ECONOMIC AND SOCIAL POLICIES IN THE EGYPTIAN ECONOMY AND THEIR IMPACT ON THE PATTERN OF CONSUMPTION, TRADE AND DEVELOPMENT 1952 - 1970

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by

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ABSTRACT

This study analyses the economic and social policies in the Egyptian economy during the period 1952-1970 and their impact on the pattern of consumption, trade and development.

The econometric method used is that of multiple regression. This technique is also combined with input-output techniques in order to obtain a macro-growth model. This model is used to analyse the major changes in Egypt's institutional and structural framework that resulted from the economic and social policies pursued during the import-substitution stage.

Chapter 1 discusses the concepts of economic development and growth, social change, economic policy goals and income distribution. It also outlines an analytical framework for distinguishing the various stages of growth and for identifying the characteristic pattern of trade and development underlying each of these stages. This is followed, in Chapters 2 and 3, by an analysis of the changes brought about by the agrarian reforms, particularly their impact on the distribution of agricultural income. Industrial and fiscal policies, the role of the public sector in controlling and allocating investment, and the sectoral pattern of employment and labour supply are discussed in Chapters 4 and 5. An evaluation of the changes in pattern of consumption and an econometric estimation of private consumption and government consumption expenditures is attempted in Chapter 6, while the specification and estimation of the structural equations of the macro-growth model of import-substitution strategy are discussed in Chapter 7. The pattern of import-substitution growth and the structural changes associated with it are analysed in Chapter 8. In Chapter 9 the model is used to diagnose past growth and then to analyse alternative future policy designs. The final chapter outlines the main conclusions of the study and puts forward certain policy recommendations.

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CHAPTER I

INTRODUCTION

The principal objectives of Egyptian public policy as announced by Nasser and his colleagues were the following:

"1. The eradication of imperialism and its agents.

2. The eradication of feudalism.

3. The eradication of monopoly and the domination of the state by private capital.

4. The establishment of a strong national army.

5. The establishment of social justice.

6. The establishment of sound democratic life."[1]

The concern with economic development of the leaders of the coup of 23 July 1952 was first related to the chronic problems of rural Egypt and the redistribution of land ownership and land holdings. Measures taken in the early years of the revolution suggest that they had, from the very beginning, other objectives. The first relates to the diversification of the economic structure, mainly through industrialisation. This involved at one stage greater encouragment to private industry; government participation in new industrial ventures, and an increase in the rate of public investment in electricity, agriculture, and certain services. An essentially free enterprise system was thus rapidly transformed into an economic system that involved a considerable degree of state intervention through planning and the operation of a large public sector.

The years 1956-1960 saw a confirmation of the growth of government control over the economy. This took two forms: increasing

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[1] Aly Sabry, Arab Socialism: Its Pattern and Its Progress, Cairo, September - October, 1961, pp. 34-36 (in Arabic).

controls over private production and expansion of the activities of already existing public enterprises. In the agricultural sector, traditional government controls over cropping patterns and water usage were extended and strengthened in areas affected by the land Reform through the appointment of government officials with strong supervisory powers. A number of the leading financial institutions were placed under sequestration in the wake of the Suez Crisis of 1956 and have remained in government hands since that time. For all other financial institutions a law was passed in 1957 requiring that they be "Egyptianized" within five years.

This meant that all shares were to be owned by Egyptians, while all members of the boards of directors as well as those responsible for the bank's management were to be Egyptians.[2] The newly formed Ministry of Industry was given extensive authority over pricing and output decisions of private manufacturing firms. Besides the government's responsibilities in the industrial sector were given a substantial boost with the adoption in 1957 of a five year plan for industrial development. This preceded the overall five year plan for the whole economy, which came into effect from 1 July 1960. The industrial plan was based on the assumption that the rest of the economy would grow steadily at 2 percent a year. Like Egypt's earlier five year plan (1946/47-1950/51), it was basically a list of projects to be undertaken;[3] yet it differed from the earlier plans in a number of important respects.

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[2] National Bank of Egypt, Economic Bulletin, Vol. X, No. 3, 1957, p. 251.

[3] These were mainly public works projects, involving the construction of roads and bridges, of irrigation and drainage facilities and of water and sewerage works. There were also expenditures on low-cost public housing and an electricity generating station. See: United Kingdom, Overseas Economic Survey, Egypt, November 1947, p. 3; and October 1951, p. 23.

The size of the undertakings in the industrial sector was very much larger than previously. While the cost of the plan for 1946/47-1950/51 was originally envisaged to be £E96 million and was substantially underspent, net investments in the five year industrialisation plan were set at £E221 million. While the government was expected to provide some 60 percent of the financing for this investment, the remainder was to come from private savings and private entrepreneurs.[4]

There was also a proliferation of controls and further extension of the role of public enterprises culminating in the nationalisations of 1960 and 1961 which brought all major industrial establishments under government ownership.

The period 1952-1961 saw the emergence of a mixed system in which the private sector co-existed with expanding the public sector and in which the government continually extended intervention and control. The radical change of the economic system took place in 1961-1962. Successive waves of nationalisation and punitive sequestrations absorbed most of modern industry into the public sector as well as large department stores, financial institutions, building and transport firms of any significant size, and large hotels. Foreign trade was placed entirely in the hands of new public organisations. In agriculture, the government became the sole purchaser of major crops and the main supplier, through the co-operatives, of essential inputs as fertilizers, pesticides and seeds. Private ownership was preserved in agriculture, within the framework and ceilings of land reforms laws, and in urban real estates. Small businesses in all sectors - and, hence most of retail trade - remained in private hands.

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[4] P. O'Brien, The Revolution in Egypt's Economic System, 1952-65, Oxford University Press, London, 1966, Chapter 4.

Objects of the Study

The purpose of this study is to analyse the basic changes in agrarian structure, nationalisation and the size of the public sector, as well as the more general change in the approach to economic planning, that have taken place since the Revolution of 1952. This last factor of social change is the change from a free enterprise system to a semi-planned economy composed of a public and a private sector; and this change is in the policy of allocating and directing the economic resources of the country. Furthermore, this study analyses Egypt's import-substitution strategy during the period 1952-1970 to describe alternative strategies for achieving optimal long-run growth and external equilibrium. Here Tinbergen's theory of economic policy is adapted and used.

The main reason for selecting 1952 as a starting point should be obvious; in that year the "ancien regime" was overthrown and a new chapter of Egyptian history inaugurated. On the other hand, the choice of the terminal year is equally significant, for Nasser, who led the revolution in 1952, died in 1970. This study could, thus, be read as an appraisal of the socio-economic transformations brought about in the Egyptian economy under Nasser's regime.

Methodology

Throughout this study, no uniform methodology has been used; rather we have used various methodologies and theories as building blocks in an attempt to construct an analytical framework that is empirically operational and suitable for achieving the aim of the study.

The econometric method used is that of multiple regression. This technique is, also, combined with input-output techniques in order to obtain a macro-growth model for analysing the major changes in Egypt's institutional and structural framework as a result of the social and

economic policies pursued during the import-substitution stage.

Before proceeding to the scope of the present study, this chapter will first review the concepts of economic development and growth, social change, economic policy ends, and measures of income distribution. It also summarises the dimensions of the income distribution issue, with a view to analysing the trends and patterns of different types of distributions and to trace the possible interactions among them, to explaining the factors responsible for changes in income distribution, and to examine the relationship between economic growth and income distribution. Finally, it develops an analytical framework to distinguish various stages of growth, and to identify the characteristic pattern of trade and development underlying each of these stages.

I.1. ECONOMIC DEVELOPMENT AND GROWTH

What we mean or ought to mean by development is a difficult question to answer. Nancy Baster could not find an entry under "development" in the International Encyclopedia of Social Sciences. Yet she has observed that the word "modernization" was defined as "the process of social change in which development is the economic components."[5] This shows the tendency (not only prevalent amongst economists) to subsume development under economic development. Economic development in turn has been equated with per-capita growth in income (and many other variables), or at least this has been used as the proxy for development. This tends to neglect the distributional aspect of income, suggesting, perhaps, that it might take care of itself through economic growth.

There is a difference, however, between using per capita income

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5 N. Baster, "Development Indicators, An Introduction", in Nancy Baster (ed.), Measuring Development, Frank Cass and Son Ltd., London, 1972, p. 1.

as a guideline for classifying countries into developed and under-developed at a point in time, and using the growth of per capita income as an index of development over time. The difficulty of using per capita income for the latter purpose is the obvious one that if, in a particular period, per capita income did not grow because population growth matched the growth of a country's total income, one would be forced into the odd position of denying that a country had developed even though its national product had increased. This is an inherent weakness of linking the concept of development to a measure of living standards.[6]

This leads on to the distinction between growth and development. Development without growth is almost inconceivable, but is growth possible without development? If per capita income is rejected as an index of development over time, an answer to this question is impossible without defining terms more precisely. The meaning of "growth" is fairly unambiguous, that is a rise in real national income. But "development" means different things to different groups of social scientists.[7] Most agree that development implies more than just a rise in real national income. It must be a sustained, secular rise in real income accompanied by changes in social attitudes and customs which have in the past impeded economic advance. But whatever definition of development is given, growth is possible without the broader social changes referred to. On the other

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6 A. P. Thirlwall, Growth and Development: With Special Reference to Developing Economies, The Macmillan Press Ltd., London, 1974, p. 22.

7 Machlup defines economic development as "those changes in the use of resources that result in a potentially continuing growth of national income per head in a society with increasing or stable population". See: F. Machlup, "Disputes, Paradoxes and Dilemmas Concerning Economic Development", in Essays in Economic Semantics, New York, Norton, 1967.

hand, development is hardly possible without growth, but development is possible without per capita income rising.[8]

However, in recent years development has been viewed as a multi-dimentional phenomenon involving different but overlapping indicators that are socio-political as well as economic. The practical significance of talking about income distribution emerges more forcefully in such discussions. Reduction of mass poverty, mobilization of mass participation, expansion of economic potential, maintenance of social and political stability for development, are just a few of the aspects of the distributional issue.

"New View" of Development

Dudley Seers comments that social problems and political upheavals have emerged in countries at all stages of development, and casts doubt on the potential of more economic growth to take care of such problems. In fact, he states "it looks as if economic growth may not merely fail to solve social and political difficulties; certain types of growth can actually cause them".[9]

More recently the writings of Dorner argue that development policy analysis, especially in the agriculture sector, should be re-oriented to take care of employment and distributional implications.[10]

Another forceful proponent of this "new view of development" has

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8 The upswing of the trade cycle is the most obvious example of the possibility of growth without development. Examples of abortive "take-offs" are not hard to find where countries have growth rapidly for a short time and then reverted to relative stagnation. Argentina is a case in point.

9 D. Seers, "The Meaning of Development", International Development Review, Vol. II, 1969, p. 2.

10 Peter Dorner, Land Reform and Economic Development, Middlesex, England, Penguin Books Ltd., 1972, p. 15.

been Mahbub ul Haq.[11] He feels that

> "... the problem of development must be redifined as a selective attack on the worst forms of poverty. Development goals must be expressed in terms of progressive reduction and eventual elimination of malnutrition, disease, illiteracy, squalor, unemployment and inequalities."

He further suggests that,

> "social indicators must be developed and progress of plans must be measured in terms of specific and quantitative goals in these fields and not in terms of average per capita income."

This shift in the focus of the students of development is also reflected in the interest and approaches of the international development agencies. The United Nation's International Development Strategy for the Second Development Decade, will try (i) "to bring about a more equitable distribution of income and wealth for promoting both social justice and efficiency of production", and (ii) "to raise substantially the level of employment."[12]

Thus, the traditional definitions, concepts, measurements, goals and tools of development are being revised and re-oriented in order to accommodate more and more social, political and more dimensions of the economic problem.

In short, economic growth is a significant but very partial criterion of success. It is

> "sometimes purchased in the present at the cost of future growth; today's successes which jeopardize tomorrow's performance do not compare with success which lay the foundation for sustained economic growth."[13]

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11 M. Ul-Haq, "The Crisis in Development Strategies", Charles K. Wilber (ed.), The Political Economy of Underdevelopment, Random House, New York, 1973, pp. 369-370.

12 U.N., International Development Strategy, Department of Economics and Social Affairs, New York, U.N., para. 18, 7, 66, 1973.

13 R. Mabro, The Egyptian Economy 1952-1972, Clarendon Press, Oxford, 1974, p. 165.

Economic development implies an ability to generate and sustain growth from within. Further, it involves structural transformations - the diversification of economic activities and a greater integration, through strong linkages and institutional intermediaries, of these activities.[14]

I.2. MEANING OF SOCIAL CHANGE

Human life is dynamic and social relationships and societies change in all places and in all times, as Inkeles says:

> "most of the societies which form part of the more recent history of man seem to have an almost continuous, often pervasive, and sometimes highly accelerated process of change. Yet with change, as with continuity, the sociologist assumes that the sequence of events is inherently orderly. The process of change is not random, even though it may at times seem chaotic, and is often beyond the conscious control of individuals and of society as a whole."[15]

Social change, as defined by W. Moore, is the significant alteration of social structure (that is, of patterns of social action and interaction), including consequences and manifestations of such structures embodied in norms (rules of conduct), values, and cultural products and symbols.[16]

This definition implies the change in the social structure that will affect the rule of conduct of the society in its values, cultural patterns, and philosophies.

R. La Piere distinguishes between two types of social change, quantitative and qualitative. For him it is the qualitative changes that make the social system at one period in time different from what it is at a subsequent period; hence, it is the qualitative rather than the

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[14] Ibid., p. 186.

[15] Alex Inkeles, What is Sociology?, Englewood Cliffs, N.J., Prentice Hall, 1964, p. 27.

[16] Wilbert E. Moore, Order and Change, John Wiley, New York, 1967, p. 3.

quantitative changes that are of primary significance.[17]

Social change in a society affects changes in other areas of the society, as pointed out by Etzioni and Etzioni:

> "Social change, it is now held, may originate in any institutional area, bringing about changes in other areas, which in turn make for further adaptations in the initial sphere of change. Technological, economic, political, religious, ideological, demographic, and stratificational factors are all viewed as potentially independent variables which influence each other as well as the course of society."[18]

Other areas that can be affected by social change include the market structure and the marketing system. The experience in the U.S., the U.K., the European Economic Community, and the U.S.S.R. shows that within the process of social and economic development there has been a parallel development and adaptation in the marketing systems of these countries.[19]

I.3. THE THEORY OF ECONOMIC POLICY

A. Aims and Targets in the Theory of Economic Policy

Economic policy is about ends and means.[20] The ends are called targets and the means are known as instruments. A "target" refers to

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[17] Richard T. La Piere, Social Change, McGraw-Hill, New York, 1965, p. 57.

[18] Amitai Etzioni and Eva Etzioni, Social Change, Basic Books Inc., New York, 1964, p. 7.

[19] See: R. S. Vaile, E. T. Grether, and Cox, Marketing in the American Economy, The Roland Press Co., New York, 1952; N. A. H. Stacey and A. Wilson, The Changing Pattern of Distribution, Pergamon Press, London, 1965; Marketing Science Institute, Marketing Development in the European Economic Community, McGraw-Hill Co., New York, 1964; Marshall J. Goldman, Soviet Marketing: Distribution is a Controlled Economy, The Free Press of Glencoe, New York, 1963; and Abdalla Abdel-Kadar Hanafy, "Implications of Social Change and Economic Development for a Consumer Market and Marketing System: A Case Study of the Arab Republic of Egypt", Ph.D. Dissertation, University of Illinois, Urbana, Illinois, 1970.

[20] B. Hanse, The Economic Theory of Fiscal Policy, George Allen and Unwin Ltd., London , 1958, pp. 1-8.

any economic magnitude deemed desirable by the decision-maker. The means to achieve the target is called an "instrument". There is distinction in the literature between aims and targets. Aims refer to the global objectives of the policy-maker or society in question. They are usually cast in broad, loose terms. The targets are more specific.

The theory of economic policy distinguishes between fixed and flexible targets.[21] A policy with fixed targets is one where the target variables take on fixed numerical values (for example, to make investment during a given period £E500 million). If, however, instead of fixing numerical values for the target variables, a function of the variables is to be optimised, the policy will be one with flexible targets. An example is the maximisation of employment, or per capita consumption, or the minimisation of the balance of payments deficit. In practice, usually a combination of fixed and flexible targets are assigned for economic policy. Distinction is also made between four types of variables:[22] data, target variables, instruments and irrelevant variables. Target variables and instruments were defined above. The data are those variables considered external to the economic context of the problem at hand. Irrelevant variables are those endogenous variables other than the targets; i.e. of no direct interest to the policy-maker.

Generally speaking, the theory of economic policy is a study of the end-means relationship in the sphere of the "economic".[23] The end-means

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21 J. Tinbergen, On the Theory of Economic Policy, 6th Edition, North-Holland Publishing Co., Amsterdam, 1975, Chapter 1.

22 Ibid., Chapter 2.

23 More broadly, economic policy is about the "what", the "how" and the "who", to quote Boulding. See: K. Boulding, Principles of Economic Policy, Englewood Cliffs, Prentice-Hall Inc., 1958. By these terms Boulding means the targets, instruments and policy-maker, respectively. See Chapter 1 of his book for very lucid non-technical exposition.

relationship by itself is very general; its study falls within the realm of logic. However, when we talk about the end-means relationship in the economic world, we discover that there is more to it than pure logic; it requires substance that emanates from the particular mechanisms and regularities prevailing in the economic phenomena. Thus one of the foremost questions is that of the consistency of economic policy. This consistency may have to do with the relationship among the targets or between the targets and the instruments. Inconsistency among the targets is a situation where the achievement of one target precludes the achievement of another. It may result from a contradiction between some targets and one or more equations in the system.[24]

There are, generally speaking, two rules of thumb for economic policy: (i) the number of instruments must be at least as large as the number of targets, and (ii) all the targets depend on all the instruments combined.[25] It is also important to note that the value of the instruments will depend on the data of the system.

B. Economic Policy Ends

There is substantial disagreement between economists concerning the government's functions. On the one hand, Downs states that political groups do not seek to gain office in order to carry out certain preconceived policies or to serve any particular interest groups; rather, they formulate policies and serve interest groups to gain office. They formulate and carry out policies as their social function, i.e. as a by-product of their private motive which is to attain income, power, and prestige of being

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[24] J. Tinbergen, op. cit.

[25] Ibid., Chapter 4, pp. 27-28. The two statements in the text should be qualified. In the cases which Tinbergen calls consecutive or partitionable, the values of some of the instruments may depend only on the values of some of the targets. A similar situation holds for cases of corresponding consecutivity or corresponding partition. See ibid., pp. 28-30.

in office. Downs rejects the idea of the social welfare function and the notion that the proper function of a government is the maximisation of such a welfare function.[26]

On the other hand, another group implicitly or explicitly assumes that the proper function of a government is to maximise the social welfare function. J. Tinbergen explicitly states this approach. He defines economic policy as actions directed toward the maximisation of the ordinary ophelimity functions. Government looks for "general interest" denoted by (Ω). This general interest is a function of different variables which may be called "target variables" indicated by Y_k or in vector form by (Y). A certain numerical value of Y_k will be called a "target". These targets will be chosen so as to make Ω (Y) a maximum. Acts meant to attain this maximum may also be referred to as the optimum policy.[27]

Economic welfare denoted by (Ω) can be evaluated in two basic norms: (a) maximum social product and (b) optimum income distribution, each of which is a function of other targets. In other words, the welfare function can be written as:

$$Y = (Y_1, Y_2, \ldots, Y_k), \quad W = \Omega(Y)$$

i.e. Y is a vector of targets, which if achieved, the welfare function (W) is maximised. A set of weights is assigned to the elements of the target vector (Y). These value weights differ from one society to another, as they also differ for different policy makers.

Many means are available for the government to achieve the specified

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26 Anthony Downs, "An Economic Theory of Political Action in a Democracy", Journal of Political Economy, April 1957, pp. 235-150.

27 J. Tinbergen, On the Theory of Economic Policy, op. cit., pp. 1-2.

goals. The effects of these means differ quantitatively and qualitatively. The kind and level of the means chosen to achieve a certain target depends on a number of considerations: the most important are the cultural values of the society, the period estimated to reach such a target, the nature of the target itself, conflicts and co-ordination between the means and goals of the economic policy, and the facilities available for the application of such means. Tinbergen denotes these available means by a vector (Z) where:

$$Z = (Z_1, Z_2, \ldots, Z_n)$$

A number of uncontrollable variables, denoted by (U), where:

$$U = (U_1, U_2, \ldots, U_n)$$

are beyond the policy-maker's command. In addition, the use of policy instruments will have side effects on other economic variables, which are not considered since they are not sufficiently important to warrant concern. These variables are denoted by a vector (X), where:

$$X = (X_1, X_2, \ldots, X_n)$$

The basic technical problem is to determine accurately the system of structural relations which connects all the variables and constitutes the model. Given an accurate model, the problem of economic policy is to use the means in a way to achieve the specified goals in spite of the disturbance terms.[28]

In a vigorous and well organised society, all various policy objectives should converge toward the overall strategy of improving and promoting social welfare. However, improving social welfare - that is,

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[28] Karl A. Fox, "The Study of Interactions between Agriculture and the Nonfarm Economy: Local, Regional and National", Journal of Farm Economics, The American Farm Economic Association, February, 1962, pp. 1-30.

maximising social product and optimising the distribution of income - is too broad a strategy to serve directly as a specific programme objective. In evaluating a certain policy it is usual to break it down into various projects, each of which has a specific end, i.e. a well defined objective. It is with respect to this end that we must evaluate the appropriateness of the policy means. Moreover, the end of every project should be compatible with general economic welfare. The degree of success of a certain programme is largely determined by the choice of its specific measures. The end of a programme may be fine, but if the measures applied are inappropriate, the whole programme may be a failure. In formulating and evaluating a certain policy all technical and institutional circumstances which serving as constraints on the policy maker, must be taken into consideration.[29]

Conflicts Between the Major Ends of Public Policy

It has been argued that the relationship between maximising social product and optimising the distribution of income is a conflicting rather than a complementary one. Such an argument may not be true, depending on the conditions and means used to achieve both goals. On the contrary, the relationship between these two ends may be the other way around. A redistribution of income in the direction of reducing poverty may tend to increase output because of the increase in labour productivity usually associated with increasing standards of living in the lower income groups through better nutrition, health, and better allocation of resources.

> "A poor man may not have enough to eat; being underfed, his health may be weak; being physically weak, his working capacity is low, which means that he is poor, which in turn means that he will not have enough to eat; and so on."[30]

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29 Ibid.

30 Ragner Nurkse, Problems of Capital Formation in Underdeveloped Countries, Basil Blackwell, Oxford, 1960, p. 4.

A better income distribution might also call for greater national product by reducing uncertainty in future market demand for consumer goods as a result of more widely distributed and better maintained consumer purchasing power.

However, a better understanding of the relationship between maximising social output and optimising the distribution of income can be obtained by an illustration, for example land reform.

Land reform has been criticised on the grounds of reducing the national income because of both fragmenting the more efficient, well equipped, better organised units of production and its unfavourable effect on the society's savings which, in turn, affects investment badly and then results in serious effects on the country's growth and development. Doreen Warriner has discussed the first argument stating that

> "When we try to apply this argument about the scale of production to the underdeveloped countries, we shall find that over a very wide range of conditions it has no validity at all ... The haciendas in Mexico and many of the latifunda in Southern Italy were not efficient large estates on any standard. They wasted both land and labour."[31]

On the other hand, if the distributive phase of the land reform is accompanied by preventing fragmentation by any appropriate type of land tenure such as co-operative farming, the effects of fragmentation not only could be avoided to a large extent but also a greater degree of efficiency may be attained.

Concerning the second criticism, namely the unfavourable effect of the land reform on the society's savings, this argument may not be true if certain measures are taken. Land reform may be used as a measure to increase the savings necessary to finance other economic development

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[31] D. Warriner, Land Reform and Economic Development, Cairo: National Bank of Egypt, Fiftieth Anniversary Commemoration Lectures, 1955, pp. 10-19.

programmes such as industrialisation, irrigation, etc. Such measures have applied with a large degree of success in Japan,[32] at the end of the 19th century and it is being applied recently in China:

> "It is reported that in 1951, of the net profits (i.e. after subtracting costs of production) 8% was retained as public savings, 40% was distributed to members dividends on the land they invested, and 52% was distributed as wages. The savings were re-invested, 60% for production and 40% for welfare, education, medical service and recreation."[33]

From the above discussion, one can conclude that there is no necessary conflict between major ends of public action, and the relationship between these ends may be complementary rather than conflicting. Thus we can conclude that maximisation of social product and optimisation of income distribution are the ultimate goals of economic policy. Starting from this ultimate goal, a series of goals are developed at a lower level of generality dealing with more specific issues in the various sectors of the economy. These goals have to be broken down further into more specific programme objectives, directed at a great variety of situations and affecting various groups of people, regions and commodities.

As far as this study is concerned, a better understanding of the aims of Egyptian public policy can be obtained by referring to the economic policy ends announced by Nasser and his colleagues. The new Egyptian regime strongly stress the optimisation of income distribution as a public policy end. The policy also implies a strategy of industrialisation, and implies that the state should play the major role in this.

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32 A. W. Lewis, The Theory of Economic Growth, George Allen and Unwin Ltd., London, 1960, pp. 224-230.

33 D. A. Baranett, "Collectivisation in China", Journal of Farm Economics, The American Farm Economic Association, May, 1953, p. 197.

I.4. CONCEPTS AND MEASURES OF INCOME DISTRIBUTION

A. Introduction

In the course of this thesis several conceptual and methodological problems have been raised as a result of the general lack of relevant statistics. Neither national nor international agencies have succeeded in establishing systematic statistical series on the main indicators of income distribution by major social class. As Dudley Seers has pointed out:

> "Lack of data on poverty, unemployment and inequality reflects the priorities of statistical offices rather than the difficulties of data collection. The conceptual problems of these measures do not seem to be more formidable than those of the national income. We have just grown accustomed to ignoring them."[34]

This general bias in economic statistics may be attributed to the fact that many economists believe that economics is concerned with the allocation of resources between products rather than the distribution of products between people. Nonetheless, in recent years there has been a growing recognition that it is not only the absolute level of national income that is important in understanding the process of growth and development but also its distribution between different socio-economic groups. This late recognition has created a growing need for more information on the existing distribution patterns of national income, on the determinants of the distribution of income, and on the interrelation between distributional shifts in income and changes in the pattern of power and property in the developing countries.[35]

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[34] D. Seers, The Meaning of Development, op. cit., pp. 2-6.

[35] See for instance: U.N., Income Distribution in Latin America, New York, 1971; U.N., Economic Development and Income Distribution in Argentina, New York, 1969; and U.N., Economic Survey of Asia and the Far East, Bangkok, 1972, Chapter 11.

B. Statistical Descriptive Concepts and Measures

In general, we have two types of statistical measures: (i) summary indicators or overall indices; (ii) disaggregated data or descriptive information. Each different statistical measure of income distribution embodies its own definition and interpretation of inequality.

At the end of the last century, Vilfredo Pareto proposed a formula which purportedly explained the upper portion of the income distribution. The formula is

$$N = Ax^{-\alpha} \qquad (1)$$

where N is the number of people with incomes greater than income x; A and α are constants to be estimated empirically.

The slope (α) represents a measure of inequality. Equation (1) further implies that the number of income recipients earning at least a given income decreases by a fixed percentage of α if income increased by 1%. According to Bronfenbrenner "Pareto believed that he had discovered an economic constant comparable in significance to the gravitational constant in physics; hence the expression 'Pareto's Laws'".[36] It is now well known that Pareto's Law does not hold with any great precision for the upper tail, and certainly not for the entire distribution.

Gini (1936), in an attempt to improve on Pareto's formula, proposed the formula:

$$\log N = P + \beta \log Ax \qquad (2)$$

where P and β are constants; and N is as defined in equation (1).

Ax is the aggregate income above the level (x).

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[36] M. Bronfenbrenner, Income Distribution Theory, Aldine Atherton, Chicago, 1971, p. 4.

The Gini formula describes the income distribution down to a much lower income level than does the Pareto formula. The slope, β, is known as the Gini coefficient and is similarly an index of inequality. The flatter the slope of the Gini function, the more equal the distribution of income.[37] M. J. Bowman points out that, although the Gini formula gives a better description of the modal range of the income distribution than that provided by the Pareto formula, it still emphasises the behaviour of the income distribution in the upper rather than the lower income levels.[38]

Gibrat (1957) hypohtesized that at any given time a number of random shocks influence incomes, the shocks being proportional to the amount of income. Over time these random shocks (assumed to be independent) cause the distribution of the logarithm of incomes to approach the normal distribution. Hence the hypothesis is that the distribution of income is log-normal and the process causing it to become so is known as "the law of proportionate effect". The log-normal distribution function, when plotted on double-log paper, produces a straight line. The variation of the slope of this line is the Gibrat index of inequality. In general the log-normal distribution does not fit empirical data well, and thus the Gibrat index shares the failing of α and β.[39]

The most widely known and used overall index of income distribution

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37 Mary Jean Bowman, A Graphical Analysis of Personal Income Distribution in the United States, Reading in the Theory of Income Distribution, George Allen and Unwin Ltd., London 1954, pp. 81-82.

38 Ibid., p. 83.

39 For more details on the Gibrat index, see M. Bronfenbrenner, op. cit., Chapter 3.

is the Gini Concentration Ratio,[40] based on the Lorenz Curve. In both nationwide measurements and international comparisons the Gini Ratio is often regarded as the basic index of inequality. This indicator relates to the cumulative distribution of total income and recipient units. Graphically, if the distribution we have is perfectly equal the Lorenz Curve will be a 45-degree line through the origin of the diagram. The more unequal the distribution the larger will be the area between the constructed Lorenz Curve and the line of perfect equality. This area is known as the "Concentration area". The ratio of this concentration area to the triangular area under the line of equality is the "Gini Concentration Ratio". Its limits are 0 and 1, inequality increasing as the concentration ratio approaches 1 and decreasing as it approaches 0. In other words, near perfect equality is shown by a Gini Ratio approaching one and vice versa.[41]

Oshima has criticised the Gini Ratio because it "tends to overstate

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[40] The Gini ratio is closely related to the mean difference. If we have n incomes x_i (x_j) where i = 1, 2, ..., n (j = 1, 2, ..., n), the mean difference (without repetition) is defined by

$$\Delta = \frac{1}{n}(n-1) \sum_i \sum_j \left| x_i - x_j \right| F(x_i)\, F(x_j),\ i \neq j$$

where F(·) is the frequency of that income. The Gini ratio is then defined to be: $G = \Delta/2\bar{x}$; where $\bar{x} = n^{-1} \sum_i x_i$. Since the mean difference divided by the mean is the relative mean difference, G is one-half the relative mean difference. A commonly used formula for grouped data which slightly underestimates the true G, the extent of underestimation diminishing as the number of groups increases is

$G = 1 - \sum_i (P_{i+1} - P_i)(q_i + q_{i+1})$, where P_i and q_i are the population and income shares respectively of all members of the lowest i groups. See: M. G. Kendall and A. Stuart, The Advanced Theory of Statistics, Vol. I, London, 1969, Chapters 2 and 10; and also J. N. Morgan, "The Anatomy of Income Distribution", Review of Economics and Statistics, Vol. 44, 1962, Appendix.

[41] See: M. Bronfenbrenner, op. cit., p. 43.

the importance of both the low and high incomes relative to the moderate income, via the process of cumulation".[42] Similarly, it tends to be insensitive to small percentage changes that might represent large income shifts in favour of the lower income classes.[43]

Another problem in using the Lorenz Curve method arises when two curves intersect. As Weisskoff has observed, "it follows that significantly differently distributions may yield identical Gini Ratios".[44] This suggests that any increase or decrease in poverty of low income groups may not necessarily be reflected in the Gini Ratio. He further states that

> "the boundaries of perfect inequality and equality are so extreme that changes in the Gini Ratio over time would tend to understate any actual gains toward equality."[45]

Some writers have attempted to suggest alternative measures to the Gini Ratio. In a recent paper Oshima has proposed an Index of Decile Inequality.[46] Here, deciles are formed by dividing the array of households, arranged in ascending order of income, into ten equal groups. Defining di as the absolute deviation from 10% of the proportion of total family income held by families (a household) in the ith decile, and expressing

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42 H. T. Oshima, "Income Inequality and Economic Growth: The Post War Experience of Asian Countries", The Malayan Economic Review, October 1970.

43 Selma Goldsmith, "Appraisal of Basic Data Available for Constructing Income Size Distribution", in "Conference on Research in Income and Wealth", Studies in Income and Wealth, Vol. 13, New York, National Bureau of Economic Research, 1951, p. 299.

44 R. Weisskoff, "Income Distribution and Economic Growth in Puerto Rico, Argentina, and Mexico", Review of Income and Wealth, December 1970, p. 307.

45 Ibid.

46 H. T. Oshima, op. cit.

di in percentage units, the mean absolute deviation can be obtained as $\Sigma di/10$. This expression would have the range 0-18, and hence the Index of Decile Inequality will be $\Sigma di/180$, which will have the range 0-1. Oshima says that the Gini Ratio will tend to be larger than this decile index because the former places relatively high weights on income shares at the upper and lower extremes of the distribution.

From a statistical standpoint it has been argued that "the logs of income conform more closely to a normal distribution than does income in natural numbers".[47] It has been further stated that the variance of logarithms of incomes is itself a ratio and independent of the original monetary units, and therefore is more suitable for international comparisons of income distribution. On this basis the standard deviation of logs of income becomes another summary indicator of income distribution; a lower standard deviation indicating a narrow differential between income groups. The standard deviation of logarithms attaches more weight to transfers at the lower end of the distribution. The interquartile measures which reflect the transfers affecting middle income classes (i.e. the middle 50% of income recipients) is another summary indicator of income distribution.

A. Fishlow, analysing Brazilian Income Distribution data, has used a statistical index developed by Theil. According to Fishlow, this measure has the advantage that it can be decomposed into income components and by sectoral division.[48]

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47 Irving Kravis, The Structure of Income, Philadelphia, The University of Pennsylvania Press, 1962, p. 180. Also, see: J. Aitchison and J. A. C. Brown, The Lognormal Distribution, Cambridge University Press, 1957.

48 Albert Fishlow, "Brazilian Size Distribution of Income", American Economic Review, Paper and Proceedings, Vol. LXII, No. 2, May 1972, pp. 391-402. The index he used is one that was introduced by H. Theil, Economics and Information Theory, North Holland Publishing Co., Amsterdam, 1967.

The United Nations team that analysed Latin American Income Distribution made use of more decomposed and detailed data presentations which enabled calculations of the proportion of the population receiving a given proportion of the mean or median per capita income to be made.[49]

In the absence of detailed data measures the mean and median can be used to arrive at a proxy for the skewness in income distribution. If a distribution is perfectly symmetrical (or normal) its median will coincide with the mean. Therefore, when the ratio of median to mean is equal to one, we can say that the distribution is normal. Income distribution of a country is assumed to be "positively skewed", where the mean income is higher than the median income. Thus, a median to mean ratio less than one will result.[50]

One method that is increasingly used is to assess the relative share of different income groups.[51] Income groups are arranged as either percentiles, deciles or quintiles, thereby enabling a comparison of the richest and the poorest segments. The choice of groups is arbitrary and will depend upon the policy focus. Turnham has suggested that (along with the decile information), a statistic representing the ratio of the share of income received by different groups (for example, top 20% to the bottom 20%) can be computed.[52]

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[49] U.N., Economic Commission for Latin America, Economic Survey of Latin America, Part 3, Special Studies (Income Distribution in Latin America), 1969.

[50] See: Folke Dovring, "Distribution of Farm Size and Income: Analysis by Exponential Functions", Land Economics, Vol. XLIX, No. 2, May 1973, pp. 133-174. Dovring points out that with the help of median to mean ratio it is possible to generate a curve portraying a distribution. He has, by using a transformed exponential function, showed that the degree of skewness and the degree of distributive equity are inter-dependent.

[51] See: H. B. Chenery, Redistribution with Growth, Oxford University Press, London, 1974, Chapter 1.

[52] D. Turnham, Income Distribution: Measurement and Problems, International Development, Dobbs-Ferry, New York, 1972, p. 37.

The foregoing summary on different indicators of income distribution is intended to give a general idea about the available choice of indicators. It suggests that it may be desirable to rely on several indicators rather than just one. This will not only help to reduce ambiguity but might also suggest what the socio-political and economic implications of the trends in income distribution are. Also, in LDCs the distribution of income between sectors (e.g. rural/urban) is also very important.

As far as this study is concerned, it might be more satisfactory to use several indicators in the absence of an agreed basis for selecting between indicators. In the final analysis, however, data limitations will often limit the choice, and the measure adopted will often be that which can be readily computed from the information at hand.

I.5. THEORETICAL DIMENSIONS OF THE INCOME DISTRIBUTION ISSUE

A. Different Aspects of Income Distribution Theory

At the outset, it must be stressed that there are many different aspects of the problem of income distribution. Each aspect corresponds to a different division of society, such as social groups, regions, races, factors of production etc. Therefore, we cannot talk about "a theory" of income distribution without specifying that distributional aspect to which we are referring.[53]

Economists, both past and present, have been mainly concerned with the functional and personal aspects of distribution,[54] although occupational

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[53] For details see: M. Bronfenbrenner, Income Distribution Theory, op. cit.; J. Pen, Income Distribution, London, The Penguing Press, 1971; and J. Marchal and B. Ducross (eds.), The Distribution of National Income, The Macmillan Press Ltd., London, 1968.

[54] M. Bronfenbrenner, op. cit., pp. 26-27.

regional, industrial and racial aspects of the problem have not been ignored.

Each of the above broad categories can be broken down into further subdivisions, but there seems to be no universal agreement about the "proper" breakdown of such categories.

In addition to the theoretical literature dealing with the various types of distribution, more recent efforts have been to relate distributional trends and patterns to the phenomena of development. Here, the concept of development refers not merely to the process of economic growth, but also to other dimensions including social and political structure and behaviour. Such an approach is necessary to understand the probable causes, consequences, and interactions associated with distributional equity and development experiences of countries.

The bulk of the refined theoretical work on income distribution comes from economists, but sociologists and political scientists have also made valuable contributions to this subject. While it is beyond the scope of this thesis to review and/or synthesize all the theoretical work in relation to the various categories of income distribution, we attempt here simply to focus attention on some of the highlights of theories of income distribution. This will help us to analyse the trends and patterns of different types of distributions, and also to trace the possible interactions among them.

B. Functional Distribution Theories

In spite of the recognition of different types of distributions, economists have generally discussed the problem of distribution "almost exclusively in terms of functional distribution".[55] But even here, one is confronted

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[55] Ibid., p. 120. But we find that statement is not quite true of the Walrasian school of neo-classical economics.

with theoretical controversy. Since income distribution can be viewed as an intermediate stage between production and consumption, it is susceptible to approach from either the supply side or the demand side. On the other hand, distribution can also be approached from the micro or the macro level.

In the classical view the size of production and national income are determined by the productive capacity. The latter is, in turn, influenced by the available amounts of the factors of production, i.e. above all capital and labour, and further by the production function, the relationship between the inputs, that is to say the amounts of capital and labour, and the size of production. The classical writers, including Marx, were primarily concerned with the distribution among factors of production (land, labour and capital) and the distribution among persons received relatively little attention.[56]

Neo-marginalists view the income distribution pattern from the production (i.e. supply) side and concentrate on the income to the suppliers of any productive input. The total income in such a context, depends on the quantity of that factor employed and its price per unit, which in turn are explained in terms of the marginal productivity theory. In other words, the distribution theory has been, under this approach, telescoped into a micro theory of input prices where in most cases the determinants of quantity employed are not explicitly stated (but taken as the quantity in existence). Hence, the value of a factor's marginal product and the extent to which that factor is employed determines its relative share.

The Post-Keynesians are primarily concerned with the demand (or expenditure allocation) side of the economy, and tend to consider income

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[56] A. B. Atkinson, The Economics of Inequality, Clarendon Press, Oxford, 1975, p. 2.

distribution as more of a macro phenomenon than a micro one. They complain that the determination of prices and quantities in terms of marginal productivity theory is based entirely on micro-economics. Furthermore, they cite the problem of "adding up" different marginal products (of the heterogeneous factor inputs) in arriving at the relative shares. They also cite empirical evidence showing deviations of "cost" per unit of input from the "returns" for the same factor.

The Post-Keynesians emphasize the importance of demand components such as investment and consumption.[57] In contrast to marginalists they concentrate upon the relationship of output and their income-generating effects, rather than on looking at relationships between inputs such as capital and labour. Consequently, and inevitably, they get involved in the economic growth process in order to identify the distribution process.[58]

After emphasizing the crucial relationships of investment to growth, and while holding to the saving-investment identity, the Post-Keynesians look at the composition of savings. They distinguish between worker's savings and capitalist's savings. The worker's source of savings is his wages, while the capitalists save from their profits. Thus, one has to consider the propensities to save of these two different groups. This savings differentiation (i.e. the higher savings ratios and capital accumulation by the capitalist segment of the economy) leads to income inequalities via demand effects.

One must conclude that neither of these two approaches should be

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[57] See: N. Kaldor, "Alternative Theories of Distribution" in his Essays in Value and Distribution, The Free Press of Glencoe, ,New York, Chapter 10.

[58] See: Ibid., Kaldor based his work on Harrod's growth equations and savings-investment identities, so that investment jointly explains growth and distribution.

preferred to the other by careful analysts. A comprehensive theory of income distribution requires that both supply and demand aspects be taken into account and both micro and macro levels be considered. Also, there are several other exogenous and endogenous factors that can be classified as either institutional or socio-political, interacting in the process of distribution of income that are not normally captured in these abstract models.[59]

C. Personal or Size Distribution Theories

In this context Adelman and Morris comment that the

> "Theories of income distribution usually emphasize explanations of functional income shares and seldom make explicit implications for the distribution of income among persons and households."

After surveying the major theoretical approaches to income distribution they felt that,

> "The implicit assumption of all theories with respect to the size distribution is that individuals possess various quantities of primary factors (capital, labour, land, etc.) which determine their income shares and that these functional shares, 'ipso facto', determine the distribution or personal income."[60]

This implies that there has been very little explicit theorizing on the non-functional aspects of income distribution. However, this is not true. Some theoretical work has accepted to explain the personal (size) and sectoral distributions. Furthermore, recent empirical studies (relating primarily to the U.S.A. and other developed countries), and the emerging interest in income distribution in LDCs, have generated a growing number of hypotheses which might help to bridge the gaps in existing theories and lead to the formulation of new theories.

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[59] J. Marchal and B. Ducross(ed.), The Distribution of National Income, op. cit., p. 1.

[60] Irma Adelman and Cynthia T. Morris, Who Benefits from Economic Development? Paper submitted to the International Meeting of Directors of Development Research and Training Institute, Belgrade August, 1972, pp. 1-2.

In relating the functional distribution to the personal distribution there is a tendency to assume, though it cannot always be the case, that the larger the individual's income the smaller the proportion that is derived from wages and salaries. As a corollary to this it is usually assumed that any measure that increases the labour share of the functional distribution will increase the equality of the personal one. Although these are not put forward as theories, they can be taken as interesting propositions stemming from functional distribution theories. However, given that some families derive income from capital as well as from their labour, and given that there are transfer processes involved in income streams differences in factor shares do not necessarily imply differences between social and economic group.

D. Factors Explaining Changes in Income Distribution

Factors responsible for changes in the distribution of income are numerous. Writers on personal or size distribution of income have in most cases attempted to project the pattern of income distribution and/or suggest causes of income disparities.

Early studies by Pareto seemed to show a remarkable degree of similarity in the inequality of personal distribution of income for different countries, and historical periods. Later, Davis recast Pareto's Law into a condition for social stability in what he calls a mathematical interpretation of history.[61]

Notwithstanding Pareto's guidelines theorists raised the question as to why the earnings of individuals are so skewedly distributed when most of the other basic human attributes, particularly ability, are normally distributed. Some answered this by arguing that extreme

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[61] H. T. Davis, Analysis of Economic Time Series, Principa Press, Bloomington , 1941, Chapter 9.

incomes can only be a temporary or a seasonal phenomena and if averaged over a number of years might approximate to a normal distribution.[62] Others suggested that although individual attributes taken separately are normally distributed, some combinations of attributes might be distributed in a skewed fashion thus giving rise to disparities in income levels.[63] Others have submitted a range of both theoretical and empirical propositions regarding the disparities in earnings and income distribution.[64] It is interesting to outline the salient features of those viewpoints.

In regard to the process of income determination both marginalists and Keynesians assume that there is complete factor mobility and effective competitive conditions in the economy. This is no doubt a very hard assumption to make, especially in UDCs which are mostly referred to as "dualistic societies". By definition "dualism" precludes the above conditions.[65] In other words, as one writer on LDC income distribution has stated, "development involves non-competing groups. Thus a single

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62 Robert Solow, "Some Long-Run Aspects of the Distribution of Wage Income, Econometrica, July 1951, pp. 333-354.

63 C. H. Boissevian, "Distribution of Abilities Depending upon the more Independent Factors", METRON 13, 1939, cited in J. N. Morgan, Income and Wealth in the United States, McGraw-Hill, New York., 1962, p. 19.

64 One must recognize that earnings differentials are just one component in income disparities. While explanation of functional income distribution (either in terms of supply or demand oriented approaches) might account for earnings differentials, it will not always account for personal, regional, racial and such other distributional disparities. Not only do households receive income from more than one factor, but also their decisions, potentials and opportunities to participate in the production process would not be fully explained by economic factors. However, a summation of the earnings of all factors of production owned by each household forms the size distribution of factor income.

65 For an account of Dual Economics, see: G. M. Meier, Leading Issues in Economic Development, Oxford University Press, 1970, p. 121.

production function cannot be used to derive income shares".[66]

Control over productive resources has been emphasized by Stanley Lebergott as another major source of income inequality. He refers mainly to the availability of credit as playing a significant part in facilitating higher receipts for some income groups.[67] In view of the Green Revolution's technological package, the importance of credit has become more crucial for farmers in LDCs.[68] If the lenders view small peasants as having a zero or negative expected return the access to credit for these groups would be low, and so will be their productive opportunities. Thus, the income distribution effects of the new technology can be unfavourable to small farmers.

Another explanation of income disparities is that people might differ in their attitudes towards risk taking or uncertainty bearing.[69] Similarly, the preference functions of different individuals, i.e. how they allocate their time between work and leisure or economic activities and socio-cultural work, can also have differential impacts on distribution.

The theory of human capital seems to have gained wide popularity in recent years as an explanation of income distributional patterns.[70]

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66 M. M. MacDonald, "Income Distribution and Economic Mobility in Taiwan", Ph.D. Dissertation submitted to the Michigan University, 1974, p. 9.

67 S. Lebergott, "The Shape of the Income Distribution", American Economic Review, 49, 1959, p. 328.

68 See: Keith Griffin, The Green Revolution: An Economic Analysis, Geneva, United Nations, 1972, Chapter 1.

69 M. Friedman, "Choice, Chance and the Personal Distribution of Income", Journal of Political Economy, Vol. 41, September 1953, p. 277 and f. 1.

70 See: Gary S. Becker, Human Capital and the Personal Distribution of Income: An Analytical Approach, Ann Arbor, Institute of Public Administration, University of Michigan, 1967; and G. C. Harcourt and N. F. Laing (eds.), Capital and Growth, Penguin Books Ltd., 1971, Part 1.

This theory emphasises investment in education, training and skill-acquisition as vital elements in the "ability" of labour. Thus even though "pure" ability may be normally distributed "acquired" ability need not be so and will therefore influence the distribution of income.[71] This implies that not only the amount invested but the process and sources of such investments are also important in determining the ultimate income distribution.

The institution of inheritance and the legal-cultural provisions with regard to property rights in a society can explain the existence and perpetuation of income disparity. For example, especially in an agrarian economy, the ownership of land and land tenure patterns can have a high degree of relation to the pattern of income distribution.[72] Hence, it becomes important to understand the impact of wealth distribution on income distribution and their two way relationships.[73]

Similarly, income distribution cannot exlusively be regarded as taking place in a free market economy. Government expenditure policies can introduce significant elements into the distributive and redistributive mechanism of a country . The real incidence and burden of government expenditure and its financing can have either vertical or horizontal distributional effects. In fact, the effect of social policy on redistribution can be assessed only when taking into consideration the whole mechanism of redistribution expenditure and taxation.[74]

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[71] Harold Lydall, The Structure of Earnings, Clarendon Press, Oxford, 1968, discusses these aspects.

[72] See for example: Peter Dorner, Land Reform and Economic Development, op. cit., Chapter 3.

[73] See: Robert Lampman, Changes in Concentration of Wealth, Edward C. Budd (ed.), op. cit., pp. 80-85 for a brief discussion to this issue.

[74] For an interesting discussion to this effect, see: T. B. Lim, "Redistribution of Income in UD Territories", in Alan T. Peacock (ed.), Income Redistribution and Social Policy, Alden Press, England, 1954, pp. 268-290.

Usually, the more progressive the direct and indirect tax structure is, the greater will be the redistributive effects of the government expenditure.

On the other hand, social benefits may be specifically geared mainly to help the low income groups, thereby reducing disparities; or they may benefit all irrespective of income levels, and hence have little impact on the initial pattern of income distribution. Egalitarian effects of government social expenditure can also be offset by inflationary tendencies in the economy depending on the market basket of goods of the poor. Furthermore, the composition and the nature of government expenditure, as well as its volume, can be important in determining the distributional impact.

In an effort to learn more about the impact of government fiscal policies on the size distribution of income, economists have conducted what are called tax and expenditure incidence studies. These empirical studies attempt to show just where the burden of taxes fall and the benefits of government spending accrue under certain tax and benefit incidence assumptions. Due to conceptual and statistical difficulties most research has been concerned with only the tax side. Only a few researchers have considered both tax and expenditure incidence together and netted out the two effects across income classes. Termed a fiscal or budget incidence study, this is obviously a more complete and satisfactory way to analyse the redistributive impact of government policies.

To sum up, a government can use its tax and expenditure policies to alter the distribution of income. The way to estimate the impact of such policies is through fiscal incidence studies, which indicate whether and to what extent the government has done its part in redistributing income and in which direction.

Besides the social and welfare expenditure policies mentioned

above, government intervention in economic activity can take several forms. For example, by designing income and wage policies, facilitating labour protection and unionism, and moreover, by direct participation as a producer and employer, governments can exert a far reaching impacts on the pattern of income distribution. Such government actions can affect the different bases of income distribution mentioned above (i.e. functional, personal, regional, sectoral, occupational and racial distributions of income).

The role of the public sector, however, must not be viewed simply from an economic viewpoint . The political dynamics associated with mass participation, pressure groups, power bases and vested interests, all influence governmental action.

As far as this study is concerned, a better understanding of the factors responsible for changes in the distribution of income can be obtained by referring to the structural and institutional changes which have been brought about by government social and economic policies during the period in question.

E. Relationship between Economic Growth and Income Distribution

The twin goals of modern economics, namely rapid economic growth and the equitable distribution of income, can be examined in two ways. One is to examine the effects of economic growth on the size distribution of income. The other is to study the effects of alternative income distribution on economic growth through its influences on aggregate savings and employment. This two-way interaction of development and income distribution can be explained in terms of economic, political, and sociological theories.

At the outset it must be said that most of the theoretical guidelines about the relationships between economic growth and income distribution have been based on time series or cross section studies undertaken by

economists, and are the outcomes of scattered empirical research. On the other hand, sociological and political theories encompassing notions of development and distributional equity have not been adequately tested. However, it is not this thesis' concern to synthesise different theories or perspectives, but rather to highlight their major propositions.

The empirical studies by Kuznets[75] are the early attempts to obtain some evidence on the changing pattern of income distribution as the economy develops over time. He presented the following major propositions:
(i) The overall income distribution of a total population is a combination of income distributions of the rural and urban populations. Overall inequality will depend on the relative sizes, average incomes and within-sector income distribution patterns of these two sectors.
(ii) The agriculture sector tends to have a more equal income distribution around a lower mean than does the urban sector. Growth usually involves a shift from agriculture to industry and hence increasing urbanization.
(iii) Eventually, due to the expansion of economic opportunities and other spread effects, distribution becomes more equal within the urban sector and therefore overall inequality can decrease with higher mean income.

The foregoing propositions suggest a U-shaped relationship between income growth and equality. Hence, the distributional equity of a country at a given time and at different points of time may be viewed as a function of its level of income and process of growth respectively.

Morgan and Kravis have studied income distribution in both LDCs and more highly developed economies and their results tend to support Kuznets' thesis.[76] However, most of their studies were based on cross

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75 S. Kuznets, "Economic Growth and Income Inequality", American Economic Review, XLV, No. 1, March 1955, pp. 1-28.

76 T. Morgan, "Distribution of Income in Ceylon", Puerto Rico, The U.S., and the U.K.", Economic Journal, XLIII, December 1953, pp. 821-835; and I. Kravis, "International Differences in the Distribution of Income", Review of Economics and Statistics, XLII, November 1960, pp. 408-416.

sectional analyses, while Kuznets' original propositions referred to the growth process of a given economy.

Weisskoff has examined changes in income distribution in some Latin American Countries. His results generally confirmed Kuznets' thesis. Ojha and Bhatt found the distribution of income in India is not much different from those in the developed countries.[77] Although they found evidence that did not support Kuznets' speculations concerning overall distribution, they did find more equality in the rural sector than in the urban sector as Kuznets' hypothesised. These studies of overall and sectoral distribution patterns and their relation to economic growth give us only vague theoretical guidelines.

When talking about economic growth and structural change, it is hardly possible to overlook the role of technology. In addition to the distributional effects that technological diffusion can induce through the process of economic growth, technology itself can have more direct implications on employment and income distribution. Technological changes associated with the rapid moves for industrialisation and Green Revolutionary strategies have been cited as such instances.

Thiesenhusen has noted the possible adverse effects of technological change on employment and income distribution in the absence of desirable institutional changes in such areas as land tenure, credit and marketing.[78] One way in which technological change affects income distribution is through its impact on labour utilization. Hence, the rate as well as the bias of technological change become determinants of

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77 P. D. Ojha and V. V. Bhatt, "Pattern of Income Distribution in an Underdeveloped Economy: A Case Study of India", American Economic Review, 54:5, September 1964, pp. 711-720.

78 W. C. Thiesenhusen, Technological Change and Income Distribution in Latin America, Land Tenure Center, Paper No. 78, University of Wisconsin, Madison, 1971.

functional, sectoral, and size distribution of income.

Adelman and Morris have attempted to observe the empirical relationship between growth and equality and to investigate the sources on inter-country variations.[79] They found no conclusive evidence to support the U-shaped relation of equality and growth.

Their second work (which involved a multivariate analysis using 31 indices of economic, political, and social factors) found four factors most crucial in shaping income distribution. These were (i) the rate of improvements in human resources, especially education; (ii) the abundance of natural resources (a proxy for wealth concentration); (iii) the extent of direct government activity (government investment and expenditure policies); and (iv) the degree of dualism (socio-economic and technological aspects of dualism). Of these factors, (i) and (iii) contribute to the reduction of inequality, while (ii) and (iv) tend to imply greater inequality. Although their work is an over-generalisation of the experiences of 44 LDCs, these variables can be taken as important guidelines for theoretical and empirical research on the income distribution issue.

While the growth process can influence the income distribution pattern, the reverse can also be true. The theoretical and empirical guidelines in this context fall into two categories: one suggests that disparity tends to foster growth, while the other argues that reduction of inequalities is desirable for growth.

It has been a conventional argument that uneven income distribution is conducive to growth. This is based on the assumption that the upper income groups have higher savings propensities than the poor, and this

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[79] Adelman and Morris, Who Benefits from Economic Development? op. cit. p. 46.

saving effect will lead to higher investment and rapid growth. Hence, the implication of equalising distribution of income would be to reduce savings, which in turn causes lower investment and growth rates. This theory, therefore, presumes that the rich tend to save proportionately more on average than do the poor. It also implies that all such savings would be channelled to productive investments. Moreover, it assumes that increases in investments assure higher economic growth.

There is no need to emphasise that all these are highly debatable statements. In many LDCs the rich have high levels of luxury consumption and also high propensities to consume. Even if they do save more, it may be deposited abroad rather than invested domestically. Thus, if the hypothesised links among inequality-saving-investment-growth are weak or non-existent, the trade-off doctrine (between equality and growth) would not be universally valid. In other words, income inequality will not necessarily promote economic growth.

The contrary-line of thought suggests that highly concentrated income might be a barrier to growth. It argues that a high degree of inequality in purchasing power distorts the demand structure and reduces the market size. The proponents of such arguments advocate better income distribution to influence the composition of demand and thereby widen investment opportunities. Income redistribution could shift demand from sophisticated capital intensive goods to more labour intensive goods and facilitate more employment.

Employment has been cited as an important variable determining distributional patterns. For instance, William Cline, concludes that "the most efficient and effective policy, for income distribution, is the expansion of employment opportunities".[80] The argument about

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[80] William R. Cline, The Potential Effects of Income Distribution on Economic Growth, in Latin American Countries, Praeger, New York, 1972, p. 234.

widening the market speculates that distribution of purchasing power to a majority would enable the exploitation of economies of scale. Also, on the basis of human capital investment theories, a productivity argument can also be made in favour of redistribution; i.e. the redistributive measures would improve the nutritional standards, education, skills and morals of the majority of labour force, hence contributing to improved productivity.

From the above discussion one can see that the state of economic theory with regard to the interrelations between equality and growth is full of mixed views and speculations that have not been adequately tested.

I.6. PATTERN OF TRADE AND DEVELOPMENT

The purpose of this section is to develop an analytical framework to distinguish various stages of growth, and to identify the characteristic pattern of trade and development underlying each of these stages.

A. Stages of Growth and Models of Trade and Development

There are five stages of development identified by Arthur Lewis:

> "A first stage where exports are the engine of growth; a second stage where import substitution sets the pace; stage three, where unbalanced growth may set off structural inflation; stage four, where the propensity to import is reduced by breaking bottlenecks; and stage five, where despite a low import propensity a ceiling is set to the growth rate of a mature economy by the potential rate of growth of exports."[81]

Here, an attempt is made to identify the formal models of trade and development implicit in each stage or group of stages. This will serve to make explicit an important dimension of growth during the various stages, namely, the changing role of foreign trade in the development process.

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81 W. A. Lewis, Development Planning: The Essentials of Economic Policy, Harper and Row Publishers, New York, 1966, p. 38.

The model of trade and development underlying Lewis' export stage is the "Vent for surplus" model.[82] This can be derived from his statement that growth during this stage is not due to "a mere diversion of output to exports, but rather an increase in output to meet an increased demand for exports".[83]

The major characteristics of the "Vent for surplus" model can be best brought out by comparing its assumptions with the alternative comparative-costs doctrine in both its classical and neoclassical versions.

In making such a comparison with comparative cost theory Myint states

> "the comparative-cost theory assumes that the resources of a country are given and fully employed before it enters into international trade. The function of trade is then to reallocate its given resources more efficiently between domestic and export production in the light of the new set of relative prices now open to the country. With given techniques and full employment, export production can be increased only at the cost of reducing the domestic production. In contrast, the 'vent for surplus' theory assumes that a previously isolated country about to enter into international trade possesses a surplus productive capacity of some sort or another. The function of trade here is not so much to reallocate the given resources as to provide the new effective demand for the output of the surplus resources which would have remained unused in the absence of trade. It follows that export production can be increased without necessarily reducing domestic production."[84]

With regard to the factor-proportions theory (i.e. Heckscher-Ohlin), Myint points out that:

> "According to the Ohlin theory, a country about to enter into international trade is supposed already to possess a highly developed and flexible economic system which can adjust its methods of production and factor combinations to cope with a wide range of possible variations in relative

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82 See: Hla Myint, "The Classical Theory of International Trade and the Underdeveloped Countries" in Readings in International Economics, Richard D. Irwin Inc., Homewood, Illinois, 1968, pp. 318-338.

83 W. A. Lewis, Development Planning, op. cit., p. 40.

84 H. Myint, "The Classical Theory of International Trade and the UDCs", op. cit., p. 327.

> factor supplies ... But in fact the economic framework of the UDCs is a much cruder apparatus which can make only rough and ready adjustments. In particular, with their meagre technical and capital resources, the underdeveloped countries operate under conditions nearer to those of fixed technical coefficients than of variable technical coefficients. Nor can they make important adjustments through changes in the outputs of different commodities requiring different proportions of factors because of the inelastic demand both for their domestic production, mainly consisting of basic foodstuff, and for their exportable commodities, mainly consisting of industrial raw materials."[85]

The basic model implicit in Lewis' second, third and fourth stages would appear to be another variant of the "vent for surplus" model with, in this case, labour being the surplus factor.

Richard Caves points out that "placed in the setting of an international economy, Arthur Lewis' model of development with unlimited labour bears a close resemblance to Myint's construction."[86] As in the case of Myint's model, Lewis' "depict(s) the effects of trade on growth as involving the exploitation of resources lacking, in that place and at that time, any alternative uses of significant economic value."[87]

The relationship between stages two to four and the "unlimited supplies of labour" model stems directly from the fact that both describe the path of an economy with surplus labour towards neoclassical conditions (i.e. where resources are fully employed).[88]

However, while the "unlimited labour" model concentrates on the relation between factor supplies, income distribution and growth, the

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85 Ibid.

86 R. E. Caves, "Vent for Surplus Model of Trade and Growth", in Trade, Growth and the Balance of Payments, Essays in Honor of Gottfried Haberler, Rand McNally and Co., Chicago, 1965, p. 96.

87 Overpopulation in relation to agricultural resources is not a pre-requisite for the validity of the model if labour supply, fed by rapid population growth, and rising labour participation ratio, is increasing at a faster rate than demand which is the case with many developing nations.

88 W. Arthur Lewis, "Economic Development and World Trade", in E. A. G. Robinson (ed.), Problems in Economic Development, Macmillan and Co. Ltd., London, 1965, p. 488.

"stages" model emphasises the pattern of sectoral growth and its interrelation with foreign trade. In other words, both models examine the same growth process but from two different angles. They thus complement each other.

It is also worth noting that the stages model differs from the unlimited supplies of labour model in examining the consequences of deviations from the long term growth path. This is indicated by the following sequence of growth stages. If "unbalanced growth" prevailed in stage two it would lead to an inconsistency in the patterns of growth of supply, demand, and foreign trade. This would, in turn, result in "structural inflation" (i.e. stage three) which would stall growth. The latter represents a "challenge" [89] to the economy and requires a response in the form of policies aimed at bringing the economy back to the equilibrium path (as defined by the "unlimited labour" model) if growth is to be resumed. Carried out successfully, such policies would constitute stage four.

When an economy reaches stage five it would have achieved the neo-classical status:

> "Production for the home market will have grown in relative importance, and investment for the home market will have become an autonomous source of economic growth. It is still necessary for the propensity to import, the rate of growth of exports and the rate of growth of output to be consistent with each other, but a mature economy adjusts foreign trade to growth rather than depending on foreign trade for growth."[90]

To sum up, the basic growth mechanism underlying Lewis' stages of growth is exports as a "vent for surplus". The primary factors of

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[89] Ibid.

[90] W. A. Lewis, Development Planning: The Essentials of Economic Policy, op. cit., p. 48.

production to be vented are first natural resources and then labour. In other words, throughout the growth process, and until the economy reaches the neoclassical stage, exports act as the principal engine of growth. Import substitution can substitute for exports only for a transitory period. When the economy reaches a level of full employment exports cease to be the engine of growth but continue to function as a constraint on growth.

B. Structural Models

To assess the pattern of import substitution and its contribution to economic growth the present study develops two structural models: a cross-section "World pattern" model,[91] and an interindustry model (which was used in studying Japan's pattern of structural change).[92]

(i) World Pattern Methodology

The "world pattern" model is based on a modified, and grossly simplified version of a Walrasian general equilibrium model.[93] The main modifications involve the introduction of intermediate demand and foreign trade in sectoral output equations. Income is treated as exogenously determined. The final specification of the equations used in estimating the model's parameters is as follows:

$$\log V_i = \log \alpha_i + \beta_i \log Y^{P.C.} + \sigma_i \log N \qquad (3)$$

$$\log M_i = \log \alpha_i + \beta_i \log Y^{P.C.} + \sigma_i \log N \qquad (4)$$

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91 See: Hollis B. Chenery and Lance Taylor, "Development Patterns: Among Countries and Over-Time", The Review of Economic and Statistics, L, No. 4, November 1968, pp. 390-416.

92 See: H. B. Chenery, S. Shishido, and T. Watanabe, "The Pattern of Japanese Growth, 1914-1954", Econometrica, XXX, No. 1, January 1962, pp. 98-130.

93 See: Hollis B. Chenery, "Patterns of Industrial Growth", The American Economic Review, LI, No. 4, September 1960, p. 624.

where:

V_i, M_i are net output and imports respectively in sector i;

$Y^{P.C.}$ is average income per capita;

N is size of population.

(All values are at constant price U.S. dollars)

The parameters α_i, β_i, σ_i represent the intercept, income, and growth parameters respectively. The coefficients of the income and population variables are referred to as growth parameters since they represent factors on both the demand and supply sides. For example, changes in per capita income not only affect demand they are also accompanied by changes in factor proportions. On the other hand, size of population influences aggregate supply through economies of scale and labour supply, and aggregate demand through import substitution.

Since, for the great majority of countries, there were no adequate time series data available for estimating the model's parameters, cross-section data were used instead.[94] The results of the attempts to estimate a world pattern were positive in the sense that all coefficients had the right sign, standard errors were low, and coefficients of determination high. Thus, from an econometric point of view, these results support the hypothesis of the existence of a uniform cross-section world pattern.

According to the exponents of the world pattern, the existence of a uniform inter-country pattern is interrelated with overtime growth in the following manner:

First, it is argued that there exists certain factors which influence the intertemporal growth pattern of most countries towards a uniform path. Broadly speaking, these uniformity factors are summed up as

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[94] Later estimates used a pooled sample of cross-section and time-series data. See: Chenery and Taylor, ibid.

follows:

> "(i) similarities in production relations - common production functions, substitution of capital for labour with rising income etc.,
> (ii) similarities in domestic demand - both in private consumption and public expenditures.
> (iii) similarities in opportunities for trade and international capital movements."[95]

Secondly, the resulting uniform inter-temporal pattern of growth is assumed to lead to a uniform cross country pattern as follows:

> "The inter-country pattern of any year is generated by the inter-temporal development pattern of all countries in prior years. If each country's pattern is dominated by a set of universal factors common to all, the cross-section relations will reveal some of the characteristics of these underlying factors. If, however, individual peculiarities of each country and changes in the universal relationships predominate, the cross-section relations may be of little use in analysing country growth pattern."[96]

Nevertheless, there appears to be two sources of variation among country growth patterns: a systematic variation in such factors as technology and tastes which are assumed to be constant; and specific country conditions such as factor endowment, economic origin, government policies, etc. However, the correspondence between inter-country and inter-temporal patterns remains subject to debate.

Attempts to estimate world pattern regression parameters based on time-series have been quite rare compared to those using cross-section data. Peret Temin's estimates, which were based on sufficiently long time-series, included only a small number (9) of high-income countries.[97] The United Nation's estimates, on the other hand, were based time-series data spacing less than ten years. Thus, although these studies (among

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95 Ibid., p. 391.

96 Ibid., p. 392.

97 P. Temin, "A Time-Series Test of Pattern of Industrial Growth", Economic Development and Cultural Change, XV, No. 2, Part 1, January 1967, pp. 174-184.

others) confirm the usefulness of a cross-sectionally derived world pattern model to explain trend growth, the evidence they provide is rather inconclusive. In addition, they have been contradicted by other evidence.[98]

(ii) Sectoral Use Pattern and Measurement of Import-Substitution

Many recent studies have presented estimates of the contribution of import substitution to industrial growth. However, there is still no general agreement on the appropriate way to measure import substitution.[99]

Most of the currently used measures of import substitution are adaptations of the procedure suggested by Chenery. Chenery's interindustry model[100] attempts to ascribe the growth in sectoral output (gross) among the following four factors:

1. intermediate demand (R); 2. final demand (D);
3. export demand (E); and 4. import substitution $(U_2-U_1)S_2$.

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98 See: Alfred Maizels, Industrial Growth and World Trade, Cambridge, Cambridge University Press, 1963, pp. 51-56; see also: M. D. Steuer and C. Voivodas, "Import Substitution and Chenery's Patterns of Industrial Growth - A Further Study", Economia Internazionale, XVIII, No. 1, February 1965, p. 47.

99 The measurement of import substitution has been discussed in Bruton, Henry J., "The Import-Substitution Strategy of Economic Development: A Survey", Pakistan Development Review, Vol. 10, 1970, pp. 123-146; Chenery, Hollis B., "Pattern of Industrial Growth", op. cit.; H. B. Chenery and S. Shishido, and T. Watanabe, "The Pattern of Japanese Growth", op. cit.; Desai, Padma, "Alternative Measures of Import Substitution", Oxford Economic Papers, Vol. 21, No. 3, November 1969; M. L. Eysenbach, "A Note on Growth and Structural Change in Pakistan's Manufacturing Industry: 1954-1964", Pakistan Development Review, Vol. 9, 1969, pp. 58-65; Fane, George, "Import Substitution and Export Expansion", Pakistan Development Review, Spring 1971; Lewis, R. Stephen, Jr., and Ronald Soligo, "Growth and Structural Change in Pakistan's Manufacturing Industry: 1954-64", Pakistan Development Review , Vol. 5, 1965; Samuel A. Morley, and Gordon W. Smith, "On the Measurement of Import Substitution", American Economic Review, September 1970, pp. 728-735; and S. A. Morley and G. W. Smith, "Import Substitution and Foreign Investment in Brazil", Oxford Economic Papers, March 1971.

100 H. Chenery, "Pattern of Industrial Growth" op. cit., pp. 639-644; and H. Chenery, Shishido, and Watanabe, "The Pattern of Japanese Growth", op. cit., pp. 104-108.

Starting with the basic identity $Q + M \equiv R + D + E$ (5)

where:

Q = domestic production,

M = imports,

R = intermediate demand,

D = final domestic demand,

and E = exports;

We can derive a similar identity for incremental values, namely:

$\Delta Q + \Delta M \equiv \Delta R + \Delta D + \Delta E$ (5)'

If $S = Q + M$ = total supply

then $\Delta S = \Delta R + \Delta D + \Delta E$

If $U_1 = Q_1/S_1$ in the base year, and if U_1 remains fixed, the change in domestic output ΔQ is given by $U_1.\Delta S$ or $U_1(\Delta R + \Delta D + \Delta E)$. If, however, U_1 alters to U_2, where $U_2 = Q_2/S_2$, then the change in output is given by:

$$\Delta Q = U_1(\Delta R + \Delta D) + U_1(\Delta E) + (U_2 - U_1)S_2 \quad (6)$$

As indicated by the above equation, in measuring the extent to which different types of demand account for sectoral growth the share of domestic production to total supply is assumed to be constant at its initial value. On the other hand, import substitution is measured as the change in total supply resulting from a decline in the import coefficient of any sector.

Lewis and Soligo used the above equation (6) in their study of structural change in Pakistan.[101] They used the first two terms on the right hand side to measure the contribution of demand expansion to the growth of output and the last term to measure the contribution of import substitution. Their study attempted to compute the sources of growth of

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101 S. R. Lewis and R. Soligo, "Growth and Structural Change in Pakistan's Manufacturing Industry: 1954-1964", op. cit., p. 105.

output in 26 manufacturing industries in Pakistan for the sub-periods 1954/55 to 1959/60 and 1959/60 to 1963/64, as well as for the whole period 1954/55 to 1963/64. They were especially interested in total import substitution for three main groups of industries - those producing consumption goods, intermediate goods, and investment goods. Their measure of import substitution for a group of industries is the sum of import substitution within each of the industries in the group - that is $\sum_i (U^2_{ij} - U^1_{ij}) S^2_{ij}$, where subscripts i and j refer to industry i in group j.

Desai[102] suggests an alternative measure of import-substitution in group j by first aggregating imports and domestic production across industries in group j and then applying the Chenery/Lewis and Soligo measure. Here the measure of import-substitution for the group is as follows:

$$\frac{\left(\sum_{i=1}^{n} Q_2^i \Big/ \sum_{i=1}^{n} S_2^i\right) - \left(\sum_{i=1}^{n} Q_1^i \Big/ \sum_{i=1}^{n} S_1^i\right) \cdot \sum_{i=1}^{n} S_2^i}{\sum_{i=1}^{n} \Delta Q_i} \qquad (7)$$

and,

$$\frac{\sum_{i=1}^{n} \left[\left\{(Q_2^i / S_2^i) - (Q_1^i / S_1^i)\right\} \cdot S_2^i\right]}{\sum_{i=1}^{n} \Delta Q_i} \qquad (8)$$

Desai notes that the different measures give different results. For example rankings might be reversed. For the Indian economy in the period 1951-1963, Desai's results[103] appear to indicate that there was positive import substitution in each of the three groups producing consumption, intermediate, and investment goods. This was true whichever

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[102] P. Desai, "Alternative Measures of Import Substitution", op. cit., p. 320.

[103] Ibid., p. 322 (Table 1, Columns 4 and 5).

measure was used. According to the Desai's measure (equation 7), however, there was negative import substitution in all industries taken together.

Desai also considers two variants of another method of measuring import substitution. According to one variant import substitution in group j is measured by:

$$(M_2/S_2 - M_1/S_1) \tag{9}$$

The second variant gives the following measures:

$$\frac{M_2/S_2 - M_1/S_1}{M_1/S_1} \tag{10}$$

where, M_1 and S_1 are the imports and total supplies during period 1; and M_2 and S_2 are the imports and total supplies during period 2.

A negative value for each of these measures indicates positive import-substitution.

It is worth noting that in all the studies mentioned above, the expansion of domestic intermediate demand for the output of an industry is treated as a source of growth of the gross output of that industry. However, Morley and Smith[104] adopted a different procedure: they assume that the economy can be described by a Leontieff open model. Let A denote a matrix whose typical element is a_{ij}, the input of i per unit of gross output of j. Let rij be the typical element of the Leontieff inverse matrix $(I-A)^{-1}$. Any given vector of final demands $(F_1, F_2 \ldots, F_n)$ requires a total gross output (domestic and foreign) from industry i defined by: $Z_i^* = \sum_j rij\ F_j$. With domestic gross output

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[104] S. A. Morley and G. W. Smith, "On the Measurement of Import Substitution", op. cit., pp. 729-32; and "Import Substitution and Foreign Investment in Brazil", op. cit.

is given by X the foreign gross output of industry i, which is implicitly devoted to supplying the needs of the domestic economy, is given by: $M_i^* = Z_i^* - X_i = \sum_j rij\ M_j$. Morley and Smith define U_i^* by:

$$U_i^* = X_i/Z_i^*; \text{ then } dxi = U_i^*\ dZ_i^*\ dU_i^* \qquad (11)$$

Morley and Smith use the second term in this identity (equation 11) to measure import substitution in industry i.

Fane[105] suggests that import substitution for industry i be measured in two parts: import substitution within the industry, denoted by Si, and the extra contribution to import substitution in all other industries, S_i^*, as a result of growth in industry i. The total contribution of industry i to import substitution, S_i^T, is defined using:

$$S_i^T = S_i + S_i^* \qquad (12)$$

Using formula appropriate for small changes, Fane defined dSi and dS_i^* by:

$$dSi = Z_i\ dU_i \qquad (13)$$

$$\text{and } dS_i^* = (U_i - U)\ dZi \qquad (14)$$

where:

$$X = \Sigma X_i;\ Z = \Sigma Z_i;\ \text{and } U = X/Z$$

The rationale for the definition of dS_i^* is that growth in an industry with a higher than average ratio of domestic production to total supply leads to an increase in this ratio for the whole group. The contribution of import substitution to the growth of all industries is denoted by S where dS = Z dU. The advantage of the above definition

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[105] G. Fane, "Consistent Measures of Import Substitution", Oxford Economic Papers, Vol. 25, No. 2, March 1973, pp. 255-257.

is that $dS = \sum_i dS_i^T$.

Fane also pointed out that one may wish to consider two or more levels of aggregation of industries. Therefore, the approach set out in the above equations was extended to yield consistent measures of import substitution in this more complex situation.

However, the framework for measuring import substitution proposed by Fane allows one to obtain consistent measures for groups and sub-groups of industries in situations involving several time periods. Also, these measures are much more useful for analysing and describing structural changes than the traditional measures which can be inconsistent (paradoxical) and thus very difficult to interpret.

Hughes and Thirlwall[106] have pointed out in a study on trends and cycles in import penetration in the U.K., that there are three main measures of import penetration at the industry level, namely:

$$P_{1i} = \frac{m_i}{O_i} \tag{15}$$

$$P_{2i} = \frac{m_i}{O_i + m_i - X_i} \tag{16}$$

$$P_{3i} = n_i/N_i \tag{17}$$

where:

m_i = the value of imports in industry i;

O_i = the value of final output in industry i;

X_i = the value of exports in industry i;

n_i = the number of units of the good imported;

N_i = the number of units of domestic sales.

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106 J. J. Hughes and A. P. Thirlwall, "Trends and Cycles in Import Penetration in the U.K.", Oxford Bulletin of Economics and Statistics, Vol. 39, No. 4, November 1977, pp. 301-317.

According to the first measure (equation 15), import penetration will always increase so long as imports increase relative to domestic output. In the second measure (i.e. P_{2i}), import penetration depends not only on imports and domestic output but also on exports. The third measure (equation 17) compares the number of units of the good imported with the number of units of domestic sales. Since this last measure is not defined in value terms it is only suitable for a single product market, but at best it is only a crude measure since it attaches equal weight to each unit and will therefore "exaggerate" import penetration if export units are more valuable than import units.

Hughes and Thirlwall suggest that a better measure of domestic performance, and of the growing dependence on imports, is obtained from movements in the P_1 measure of import penetration. The reason for their own particular choice is as follows:

> "Starting from a position of trade balance in which imports = exports (so that initially $P_1 = P_2$), an increase in exports with no change in domestic output or imports will cause P_2 to rise while P_1 remains unchanged. Conversely a decrease in exports would cause P_2 to fall with P_1 unchanged. Hence an improvement in export performance achieved by redirecting domestic output into exports will reflect itself in an increase in import penetration if the measure P_2 is adopted but not if P_1 is used. Indeed, depending on the initial balance between exports and imports, it is possible for the P_2 measure of import penetration to rise despite a slow growth of imports relative to the growth of output or exports. For example, if $X_i > m_i$ initially, a faster rise in exports than imports will raise the P_2 measure of import penetration while P_1 falls. In such circumstances it is hardly sensible to point to the growth of imports as a source of domestic weakness, as P_2 would suggest, when every encouragement is being made to foster industrial exports."

In this study, the Hughes-Thirlwall measure (i.e. P_1) is used to estimate the trend in import-substitution in manufacturing industry over the 1960s. Also, Chenery's interindustry model is used to provide an anatomy of the structure and pattern of growth of demand and import-substitution for the manufacturing sectors.

SCOPE OF THE STUDY

The remainder of this study is divided into the following chapters:

Chapter 2 examines the basic changes in the agrarian structure, policies included in the agrarian reform package and the institutions thereby created.

Chapter 3 examines the impact of the agrarian reforms on the distribution of agricultural income. It analyses the socio-economic structure of income distribution in rural Egypt with the aim of evaluating the redistributional impact of the new social and development policies pursued after the 1952 revolution. Changes in the distribution of agricultural income by factor shares is also analysed in order to discern to what extent the movement in money wages has been associated with an increase (or a decrease) in real wages during the period under study.

Chapter 4 analyses the basic changes in the industrial sector; the role of industrial policies in implementing development plans. Two policy frameworks, each pertain to one economic system and hence to a fairly well defined period of Egypt's history, are distinguished. In the first system (1930 to the late 1950s) tariff and import controls were the main policy instruments. The second framework involved direct investment by the state in industry, the nationalisation of foreign trade operations, extensive administration of prices, public ownership of modern industry, and labour and employment policies.

Chapter 5 analyses the basic changes in the fiscal policies in Egypt, i.e. changes in the structure and size of the budget, changes in the structure of government expenditure and the revenue structure used to finance the expenditures. It also analyses the changing role of the public sector in controlling and allocating investment. Finally, it examines the changes in the sectoral pattern of employment and labour supply during the period under study.

Chapter 6 attempts to evaluate the changes in pattern of consumption and standards of living in Egypt that may be associated with the changed distribution of income. Thus, this chapter first examines the general pattern of private consumption. Two family budget surveys are used to examine whether or not there is a shift in the patterns of consumption that may be associated with the changed distribution of income. Secondly, we compute some conventional summary measures of inequality in order to test whether the shift, mentioned above, is associated with a fall (or increase) in the overall degree of inequality of the distribution of total consumption expenditure among the households. Thirdly, we investigate the consumption function. Two disaggregations of aggregate consumption are used. The first divides total consumption by type of consumer and by commodity into: (a) household food consumption; (b) household non-food consumption; (c) government consumption. The second divides total non-food consumption (of both household and government) into: (a) consumption of industrial goods; and (b) consumption of services. That is food consumption is common to both classifications.

Furthermore, while multiple regression is used in estimating the parameters of the household and government consumption functions, an input-output approach is used to estimate consumption of industrial goods and services. The hypothesis is that this latter residual approach gives a better description of the pattern of consumption behaviour in the case of industrial goods and services, and therefore provides us with a better forecasting tool in the medium run.

Chapter 7 discusses the specification and estimation of the structural equations of a macro-growth model of import-substitution strategy. The aim of this is to depict the basic structure and structural transformation which took place in Egypt's economy during the period in question.

Chapter 8 attempts to evaluate the changes in the pattern of trade and development that may be associated with the major changes in economic and social policies. Imports and exports during the period under study are analysed, special attention being paid to exports of manufactured products. The purpose of this is to relate the behaviour of manufactured exports to the growth, diversification, and stability of total exports, and hence to place this behaviour in perspective. Economic factors and policies which have influenced the performance of both industrial and non-industrial exports (imports) are also discussed. This chapter also is concerned with a statistical assessment of some aspects of the pattern of import-substitution growth and the resulting structural change. Thus in this chapter we first discuss the pattern of growth of both the production and trade of primary commodities (i.e. agricultural and mineral products); secondly, we investigate the pattern of sectoral growth of manufacturing in particular; thirdly, an anatomy of the structure and pattern of growth of demand and import-substitution (as an alternative source of supply) for the manufacturing sectors is presented. Finally, we analyse the cost structure, the dependence on imports of intermediates consumption and the degree of backward integration of Egyptian industry. The main reason for this latter analysis is that some of products of the manufacturing sector are for final consumption, investment, or exports; where others are used as intermediary goods, either by industry itself or by other sectors. But the consumption of intermediate products in industry is not limited to its own products. It includes raw materials and inputs from the services sector. Industrialisation may reduce the ratio of imports to total supply of manufactured goods but lead to higher imports of raw materials and intermediate services. Therefore, an analysis of the import structure of intermediate consumption in industry is of some interest.

Chapter 9 is devoted to economic policy, analysis and design. In this chapter we use the model, stated in Chapter 7, to attempt to replicate the actual economic system during the period in question. Having been subjected to the above test, the model is used to conduct a two-gap analysis, and to undertake experiments aimed at identifying the dominant gap. This is a preliminary step to policy analysis, since if the prescribed economic policies are to be effective they must be directed towards the binding bottlenecks. Finally, the model is used to test alternative future strategies aiming at reorienting the economic system towards its long-run growth path and the requisite external equilibrium. Here Tinbergen's theory of economic policy is adapted and used.

Chapter 10 outlines the conclusions of the study and makes some policy recommendations.

CHAPTER 2

STRUCTURAL CHANGES AND SOCIALIST TRANSFORMATION IN EGYPTIAN AGRICULTURE

2.1. A HISTORICAL BACKGROUND

One of the first actions taken by the new regime after the 1952 Revolution was the enactment of the Agrarian Reform Law. Coming only six weeks after the coup d'etat, the main objective of the reform was political: to diminish the power of large landowners, who formed the power base of the "ancien regime" and represented the main source of opposition to the Revolution.

Political motivations, however dominant, should not rob agrarian reform of its social and economic significance.[1] By the beginning of the 1950s the "agrarian question" in Egypt, emanating essentially from extreme inequality and growing poverty, had reached a crisis level. Such poverty and inequality had their historical roots in the system of private land ownership established in the second half of the 19th century and the concomitant emergence of a powerful class of large landowners.[2] The most striking feature which characterised the evolution of this system was the heavy concentration of land ownership and the rapid increase in the number of small owners in relation to the area of land possessed by them.

Table 1 shows the evolution in the pattern of land ownership during

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[1] For an elaboration of this point see R. Mabro, The Egyptian Economy, 1952-1972, op. cit., pp. 56-57.

[2] The intricate history of land ownership in Egypt has been the subject of several studies. See: A. A. El-Dessouky, Large Landowners and their Role in the Egyptian Society, 1914-1952, Cairo 1975; R. Abbas Hamid, The Social System of Egypt under Large Landowners, 1837-1914, Cairo, 1973; Gabriel Baer, A History of Landownership in Modern Egypt, 1800-1950, London 1962; and Ibrahim Amer, Land and Peasant; the Agrarian Question in Egypt, Cairo, 1958.

the half century preceding the Reform Law of 1952. It shows clearly that an initial situation of extreme inequality in the distribution of land had actually worsened with the passage of time. Thus we find that at the turn of the century small farmers (owning less than five feddans) who represented 80% of the total number of landowners, possessed only 20% of the land, while large proprietors, owning over 50 feddans and representing only 1.5% of landowners, held 44%.of the land. The process of differentiation continued. A striking feature of this process was the way in which medium landowners were able to consolidate their position. Over the period 1900-1952, the average size of medium ownerships and their share in the total cultivated area remained constant. By contrast, the number of small owners more than trebled in fifty years; their share of the total cultivated area increased from some 22% to 35%. Despite this increase, the average size of their ownership fell from 1.46 to 0.80 feddans, i.e. by 45%. Furthermore, a finer breakdown shows that most of the increase in small properties took place in the bracket "less than one feddan". Between 1910 and 1952 the number of owners in this bracket increased from 783,000 to 2,018,000 (compared to an increase from 464,000 to 624,000 in the "one to less than five feddans" bracket) and the average size of property declined from 0.47 to 0.38 feddans.[3] This development was largely due to a rapid increase in rural population combined with the Muslim laws of inheritance which required the breaking up of properties among heirs upon the death of the owner. Despite the operation of these laws, both the number of large and medium sized properties and their area showed little change over time. This is partly explained by the fact that newly reclaimed land and land sold by the State

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[3] R. Mabro, op. cit., pp. 60-61.

Table 1

Changes in distribution of landownership, 1896-1952

Year	Small Ownerships (Less than 5 feddans)					Medium Ownerships (5 and less than 50 feddans)					Large Ownerships (50 feddans and over)					All ownerships	
	Owners (000's)	% of total landowners	Area (000 feddans)	%	Average size of ownership (feddans)	Owners (000's)	% of total landowners	Area (000 feddans)	%	Average size of ownership (feddans)	Owners (000's)	% of total landowners	Area (000 feddans)	%	Average size of ownership (feddans)	Owners (000's)	Area (2) (000 Feddans)
1896	611	80	994	20	1.54	144	19	1815	36	12.6	12	1.5	2192	44	183	767	5001
1900	761	84	1113	22	1.46	141	15	1757	34	12.5	12	1	2244	44	187	914	5114
1906	1084	88	1293	24	1.19	134	11	1662	30	12.4	13	1	2476	46	190	1231	5431
1916	1480	91	1450	27	0.98	133	8	1645	30	12.4	12	1	2356	43	196	1625	5451
1936	2242	93	1837	31	0.82	146	6	1747	30	12.0	12	1	2254	39	188	2400	5838
1943	2376	93.5	1944	33	0.82	147	6	1774	30	12.1	12	0.5	2142	37	179	2535	5860
1952 (1)	2642	94.3	2122	35	0.80	148	5.3	1817	30	12.3	12	0.4	2042	35	170	2802	5981

Notes and Sources:

(1) Before the promulgation of the Land Reform Law.
(2) One feddan = 0.42 hectare = 1.04 acres.

Annuaire Statistique, various issues and Statistical Indicators, 1952-63, Cairo, 1964, p.43.

from public domains was generally acquired, in the first instance, by the bigger landlords, a practice which largely offset the adverse effect of the breaking up of their properties on the total area owned by them.[4] Thus, through the parallel processes of fragmentation of small properties and consolidation of medium and large properties, the distribution of land ownership, extremely uneven from the beginning, became even more unequal.

In 1952, before the Land Reform, large landlords (owning over 50 feddans) numbered less than half of one per cent of the total number of proprietors but held 35% of the land. At the other end of the spectrum over two million persons (owning less than one feddan) represented 72% of the total landowners but held a mere 13% of the total cultivable area. These owners who owned less than one feddan each constituted the poorest section of the landowning class. Some lived in towns or worked in the villages, having leased their plots to relatives or neighbours; others rented land to supplement their holdings.[5]

Outside the spectrum of landowners there are the landless peasants, the poorest of the rural poor. Unfortunately there are no precise figures for the number of "landless families" in rural Egypt prior to the agrarian reform. However, a quantitative analysis of this problem has been undertaken recently. The findings of this analysis are summarized in Table 2. It shows that the number of "landless families" (those with no access to land, either through ownership or rent) has grown considerably, both in absolute and relative terms. By 1950 there were some 1.6 million families, representing over 60% of rural population, who owned no land at

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[4] E. Eshag and M. A. Kamal, "Agrarian Reform in the UAR (Egypt), Bulletin of the Oxford University Institute of Economics and Statistics, Vol. 30, No. 2, May 1968, p. 75.

[5] Ibid., pp. 77-78.

all and who had to rely exclusively on their labour for earning a living.

Table 2

Landless Families in Rural Egypt
Before the Agrarian Reform

(000's)

Agriculture Census Years	Population	Number of Rural Families	Number of Landholding Families	Number of Landless Families	% of Landless to Rural Families
1929	10,579	1,968	1,207	761	39
1939	11,664	2,170	993	1,177	54
1950	13,700	2,548	997	1,551	61

Source: Samir Radwan, The Impact of Agrarian Reform on Rural Egypt, 1952-1975, International Labour Office, Geneva, January 1977, Table 1,2, p. 6.

The lopsided development of private land ownership sketched above gave birth to an agrarian system that can best be described as "capitalist" in structure and "feudal" in its social relations.[6] The introduction of cash crops and the consequent integration of Egypt as a cotton producer into the world economic system, the development of a complex transport network linking the farms to the market place, the creation of a sophisticated trade and financial structure, have all contributed to the transformation of Egyptian agriculture from a subsistence into a highly commercialised and profit-maximising activity. The dual structure of land ownership - large estates and small peasant holdings - was also reflected in the

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6 This statement is a gross simplification of the outcome of the rich debate on the nature of Egypt's agrarian system which took place in the 1950s. For a summary see A. Abdel-Malek, Egypt: Military Society, New York, 1968, pp. 50-57.

mode of land exploitation. Egyptian agriculture was dominated by a large sector of small family farms totally dependent on family labour and using primitive tools and implements, while medium and large estates depended mainly on hired labour, permanent or casual, and employed modern machinery. The organisational structure of factor markets (land, labour and capital) and the land tenure relationship functioned under a "laissez-faire" system.[7] Wages in a labour-surplus economy were always pushed to subsistence levels. The cost of medium and short term credit had been monopolised by the large landowners, while small peasants had virtually no access to the modern credit market. Therefore, small landowners and tenants were compelled to turn to village moneylenders, merchants and brokers who extorted rates of interest that often exceeded 100% per annum.[8] These rates represented a heavy burden on the meagre income of these small farmers. The extremely unfavourable man/land ratio created an active land market. Heavy speculation in the rural land market resulted in a tremendous inflation of land prices without any actual increase in productive investment in land. Moreover, where ownership of land was concentrated in few hands, leasing was the only way in which the land "hunger" could be satisfied. "Absentee landlords" leased their land either directly or through intermediaries under a wide range of tenancy contracts: cash rent, rent in kind and sharecropping. It was estimated

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7 M. Riad El-Ghonemy, "Economic and Institutional Organisation of Egyptian Agriculture Since 1952, in P. J. Vatikiotis, Egypt Since the Revolution, London, 1968, p. 68.

8 Commercial banks were mainly concerned with financing trade in cotton by advancing short-term loans to big landlords, merchants and exporters, but were not willing to undertake small credit transactions with the mass of small farmers. In 1931, the Agricultural Credit Bank was established to provide short-term credit to small and medium sized cultivators, but this was precluded by Statute from dealing with tenants or sharecroppers without the written approval of their landlords, or the provision of some other collateral. For more details see Section 2.5.A.

that by 1950 some 60% of Egypt's cultivated land was tenanted, as against 17% in 1939.[9] Acute competition and exploitation by intermediaries sent rents rocketing. Average rents increased five times between 1938 and 1950.[10] In many cases, because of the rents charged were higher than the average yield from the land, it was more profitable for the landlord to lease out his lands than to farm them.

This defective land tenure system resulted in an unequal distribution of income, as we will see in the next chapter, and also enforced a pattern of social relations that could be described as feudal. The village scene was dominated by the large landlord.[11] His manor house was run by a small army of permanent workers and their families. Invariably, he, as the village mayor, was the representative of the State. In short, he represented the political and social power in the village, and he used this power to ensure his mastery. Tales of social subjection, illegal abuses, repression and human degradation of the "fellahin" were a pale description of the grim reality of Egyptian rural life.

Against this background the leaders of the coup of 23 July 1952 sensed the urgent need to tackle the "agrarian question". The revolutionary regime enacted a Land Reform Law in September 1952 which represented a direct attack on the chronic problems of rural Egypt, and was intended to bring about radical changes in the agrarian structure. This law was followed by two others in 1961 and 1969, In addition to this, the Government has since 1952 enacted other laws and has issued numerous decrees either supplementing or modifying the provisions of the original

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9 G. S. Saab, The Egyptian Agrarian Reform, 1952-1962, Oxford University Press, London 1967, P. 11.

10 Fawzi Abdel-Hameed, The Agrarian Question in Developing Countries and the Agrarian Reform in Egypt, Cairo 1973, p. 111 (in Arabic).

11 Usually referred to as the "Pasha".

reforms. Before looking at these changes in any detail, however, it is instructive to outline the various policies included in the agrarian reform package, and the institutions thereby created. These policies can be grouped in the following way:

(a) Policies to change the pattern of land ownership: the successive land reform laws of 1952, 1961 and 1969 fixing a maximum ceiling on ownership.

(b) Policies related to the organisation of land use: regulation of owner-tenant relationship, collectivisation and smallholdings into large plots, crop rotation.

(c) Policies creating the integrated co-operative system: the organisation and functions of the supervised co-operatives, first established on land reform areas and later extended to cover almost all the countryside, the role of the co-operative in providing various inputs, credit, machinery and marketing the crops.

(d) Policies aimed to improve the condition of agricultural labourers: minimum wage and the right to form a trade union.

(e) Other policies to improve the living conditions in the rural areas: introduction of drinking water and electricity, education and health facilities.

It is the aim of the following sections of this chapter to investigate the major socio-economic changes which have taken place in Egypt's agrarian structure since 1952, while its impact on structural shifts in the distribution of agricultural income between various groups of the peasantry will be examined in the next chapter.

2.2. THE AGRARIAN REFORM

The First Land Reform was promulgated on September 7, 1952 and put into force in October of the same year. It has the following aims:

(a) The redistribution of land held in excess of a maximum limit.

(b) To increase the flow of savings to industry and commerce.

(c) The development of agriculture.

(d) The regulation of the relationship between landowners and tenants.

(e) The safeguarding of the rights of agricultural workers.

In addition to these economic aims the reform also had social and political goals.[12]

At the beginning of the scheme the maximum limit of landownership was fixed at 200 feddans, with an additional 100 feddans for the owner's children provided that the total did not exceed 300 feddans. Any land held in excess of this was to be requisitioned and redistributed by the state to small farmers, tenants and labourers. However, big land owners were allowed to sell land to their previous tenants within a period of five years in small plots not exceeding five feddans each. Owing to large-scale disposition of land in this way, this concession was soon withdrawn (October 1953).[13] The law was also amended (in 1958) to fix a maximum holding by reference to families rather than individuals when it was realised that landowners were holding land in excess of the legal maximum of 200 feddans by registering it in the names of their minor children and wives. The maximum holding by each family was then fixed at 300 feddans. The law also abolished family mortmains in which the beneficiaries had control only over the product of the land. Families were forced to divide such land among their members and if, as a result, the total holding exceeded the maximum ceiling, the excess was subject to requisition. Land requisitioned under the 1952 land reform law from private landlords amounted to 434,000 feddans, or just over 7% of the

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[12] Ministry of National Guidance, State Information Service, The Charter, Cairo, May 21, 1962.

[13] It was estimated that some 145,000 feddans had been sold by that time. See Eshag and Kamal, "Agrarian Reform in the UAR", op. cit., p. 78.

total cultivated area.

Subsequent laws extended the scope of land reform. More land, amounting to about 440,000 feddans, was requisitioned for distribution in later years through a variety of actions. The Royal Family estates were confiscated in 1953; a new law in 1957 extended the reform to charity domains; in 1962 all lands held by charities became subject to requisition; more land was later acquired by the sequestration decrees of 1962 and 1964 which confiscated the properties of certain landowners - a political action which followed the Syrian secession - and by a law of 1963 which expropriated foreign proprietors. The most important single measure taken in this period was the Second Agrarian Reform Law of July 1961.[14] With the new radicalisation drive in July 1961, this reform reduced the maximum holding by any one person to 100 feddans and imposed a limit of 50 feddans on each leasehold. Finally, in August 1969, a Third Agrarian Reform Law was stipulated, lowering the ceiling for individual holdings to 50 feddans and family holdings to 100 feddans.

Expropriated owners (except for members of the Royal Family) received compensation equivalent to seventy times the basic land tax, assessed in 1949 at about £E3 per feddan. Compensation was made in the form of non-negotiable government bonds bearing an interest of 3%, redeemable in thirty years.

The requisitioned land was to be distributed in small plots of two to five feddans, depending on quality and the size of the beneficiary's family. The size of holdings allotted by the land reform authorities was calculated in such a way as to give each beneficiary and his family an

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[14] Law No. 127, 1961.

annual income just sifficient to meet bare subsistence expenses.[15]

Priority in distribution was given to the person who actually farmed the land, whether tenant or owner, and thereafter to the farmers with the largest families, and to the poorest members of the village community.

The requisitioned land was sold by the government to the new beneficiaries, who were to pay for it in equal installments over thirty years. The selling price was supposed to be equal to the compensation paid to expropriated owners plus 15% overhead charges to cover the administrative costs of the new Agrarian Reform Department, as well as 3% interest per annum.[16] The beneficiaries were not allowed to sell or sublet the land and, to safeguard against fragmentation, land subdivision through inheritance was not permitted. Land reform beneficiaries were required by law to join a co-operative society which, under the direction of a government supervisor, was to provide various inputs such as credit, marketing facilities and the services of tractors and irrigation pumps.

Another major feature of land reform, more significant perhaps than the redistribution of land, was the reform of tenancy regulations

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15 See: Sayed Marei, "The Agrarian Reforms in Egypt", International Labour Review, Vol. LXIX, No. 2, February 1954, pp. 145-147. In this article, a calculation of the cost of living of different families (of varying sizes) in Egypt showed that the cost of living for a family of seven was about £E116 per annum. On the basis of these calculations, the average share of the individual in land distribution worked out at 14 Kirat (about 0.6 feddans). This article also states that "since the income of five feddans under normal conditions is nearly £E120 a year and the cost of living of a family of eight individuals is £E128 per annum, a family of eight should be the maximum limit for the distribution of five feddans. It can just live on the income of these five feddans, supplemented by some other help from outside".

16 These conditions were later relaxed. In 1958 interest on debts was reduced to 1.5%, supplementary charges to 10% and the repayment period extended to 40 years. The 1961 law fixed the beneficiaries' liability at half the compensation price; in 1964 this was reduced to one quarter, interest charges and payments for government expenses were also abolished.

since these were to affect larger sections of the population. It was estimated that by 1950 some 60% of Egypt's land was cultivated by tenants.[17]

The 1952 land reform fixed the rent of agricultural land at a maximum of seven times the amount of the land tax levied upon it. In the case of rent based on crop-sharing, it stipulated that the owner's share should not exceed one half after the deduction of all expenses. A three-year minimum duration of tenancy agreements was also stipulated by the law to guarantee security of tenure. Moreover, it was stipulated that a copy of the lease should be filed with the village co-operative to ensure the tenant's interest.

Table 3 summarises the redistributive effects of land reform laws enacted during the period 1952-1970. It shows how much land was distributed each year and the total amounts distributed from the beginning of the reform to the end of any given year. The table shows that by 1970, 817,538 feddans of land (or slightly less than 13% of the total cultivated land during this year) had been distributed to 341,982 families,[18] that is an average of 2.4 feddans per family.

The moderate character of the reform becomes immediately clear. It touched only a fraction of the land and has certainly not satisfied the land hunger of the poorest members of the village community, the "landless peasants". As a matter of fact, land reform could have had a stronger impact had it not been for the piecemeal introduction of legislations and the illegal practices of old landowners. For instance, the area subject to sequestration under the First Agrarian Reform of

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17 It was estimated at 700,000 families. See M. R. El-Ghonemy, "Economic and Institutional Organisation of Egyptian Agriculture since 1952", op. cit., p. 74.

18 This comprises some 1.7 million persons, or about 9% of the rural population.

Table 3

Land Redistribution 1953-1970[1]

Requisition			Distribution			
Origin of Requisitioned land	Area (feddans)	Year	Areas (feddans)	Number of beneficiaries (families)	Average Amount of distributed land per family (feddans)
	1	2	3	4	5
1. First Agrarian Reform Law, 1952 (including Royal Family Estates)	450 305	1953	16 426	4 784	3.4
		54	65 285	24 295	2.7
		55	66 687	31 588	2.1
		56	35 558	15 678	2.3
2. Religious Mortmains, 1957	110 451	1957	42 067	19 701	2.1
		58	42 920	17 045	2.5
3. Second Agrarian Reform Law, 1961	214 132	1959	5 982	2 447	2.4
		60	23 426	10 345	2.3
		61	28 381	9 291	3.0
4. Charitable Turst, 1962	38 336	1962	106 150	31 605	3.6
		63	90 172		
5. Sequestrated land	69 323	1964	121 645	107 286	2.2
		65	26 013		
6. Aliens' farm properties, 1963	61 910	1966	25 668	12 013	2.1
		67	58 107	31 298	1.9
		68	20 531	8 295	2.5
7. Others (taken over from other organisations)	25 979	1969	22 743	9 056	2.5
		1970	19 777	7 255	2.7
Total	944 457	Total	817 538	341 982	2.4

Note and Sources: (1) These figures refer to land sequestrated and distributed by the agrarian reform authorities only and, therefore, exclude some 215,000 feddans of reclaimed land distributed during the same period. Statistical Yearbook of the Arab Republic of Egypt, 1952-73, October 1974, p.53; Statistical Atlas, July 1962; Landholdings and Cultivated Areas in the Arab Republic of Egypt, 1969, November 1972, pp.88 and 91; and Ministry of Agrarian Reform, Agrarian Reform and Land Reclamation, 1952-63, Cairo, 1963, p.29.

1952 was estimated to be 656,736 feddans belonging to 1,789 large landlords. But, as Table 3 shows, only 450,305 feddans were actually sequestrated and, if we deduct from these 178,000 feddans which belonged to the Royal Family, we find that the area actually taken from large landowners, 272,305 feddans, was much less than half of what it should have been.[19] Large landowners took advantage of the provision in the law which entitled them to sell land above the fixed ceiling in plots not exceeding five feddans. As mentioned above, some 145,000 feddans were disposed of in this way during one year. Moreover, some landowners were able to forge backdated sales contracts to members of their families and thereby avoid the law.

However, these deficiencies should not detract from the historical significance of the reforms as the first serious challenge to the authority of large landowners since the introduction of private land ownership in the second half of the nineteenth century.

2.3. THE IMPACT OF LAND REFORMS ON THE MATRIX OF LAND OWNERSHIP

The change in the matrix of land ownership in Egypt in the last two decades can be regarded as a direct result of the implementation of the two land reforms in 1952 and 1961. A comparison of the structure of ownership in 1952 with that in 1965 (the latest year for which data are available on a comparable basis) reveals interesting features. First, as Table 4 shows, the number of large ownerships remained almost constant both in absolute and relative terms, but their share of land dropped significantly. Thus in 1952 11,000 families, representing 0.4% of landowners, owned more than two million feddans, or 34.2% of

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19 F. Abdel-Fattah, "Land and Peasant in Egypt, 1952-1972, The Matrix of Land Ownership", Al-Taliaa, October 1972, pp. 23-24 (in Arabic).

Table 4

Changes in The Structure of Land Ownership in Egypt

1952-1965

Size Class (feddans)	Distribution before 1952 law					Distribution after 1952 law					Distribution after 1961 law					Situation in 1965				
	Owners		Area		Average Holding per owner	Owners		Area		Average Holding per owner	Owners		Area		Average Holding per owner	Owners		Area		Average Holding per owner
	(000s)	%	(feddans)	%		(000s)	%	(feddans)	%		(000s)	%	(feddans)	%		(000s)	%	(feddans)	%	
small ownerships: less than 5	2642	94.3	2122	35.4	0.8	2841	94.4	2781	46.6	1.0	2919	94.6	3172	52.1	1.1	3033	95.0	3693	57.1	1.2
medium ownerships: 5-<10	79	2.8	526	8.8	6.6	79	2.6	526	8.8	6.6	80	2.6	526	8.6	6.6	78	2.5	614	9.5	7.9
medium ownerships: 10-<20	47	1.7	638	10.7	13.6	47	1.6	638	10.7	13.6	48(1)	1.6	638	10.7	13.3	41(1)	1.3	527	8.2	13.3
medium ownerships: 20-<50	22	0.8	654	10.9	29.7	30	1.0	818	13.6	27.3	26	0.8	818	13.4	31.5	29	0.9	815	12.6	28.1
large ownerships: 50-<100	6	0.2	430	7.2	71.7	6	0.2	430	7.2	71.7	6	0.2	430	7.0	71.7	6	0.2	392	6.1	65.3
large ownerships: 100-<200	3	0.1	437	7.3	145.7	3	0.1	437	7.2	145.7	5	0.2	500	8.2	100.0	4	0.1	421	6.5	105.3
large ownerships: Over 200	2	0.1	1177	19.7	588.5	2	0.1	354	5.9	177.0	-	-	-	-	-	-	-	-	-	-
	2801	100	5984	100		3008	100	5984	100		3084	100	6084	100		3191	100	6462	100	

Notes and Source: (1) Adjusted figures. Official data as well as studies using them have been consistently reporting the number of owners in this bracket as 65,000 and 61,000 in 1961 and 1965 respectively. This is clearly not correct as the average size of ownership will work out at 9.8 and 8.6 feddans in the two respective years, which is less than the lower bound of the size class of 10-20 feddans. To correct this error we assumed that the number of owners in 1961 was 48,000 which is consistent with data published by the Ministry of Agriculture for previous years, which were 48,500 for 1956 and 48,300 for 1959. See Ministry of Agriculture, Agricultural Economy, Cairo, January 1962, Table 2, p.3. For 1965, we estimated the number of owners by assuming that the size of average holding prevailing in 1961 remained constant.

Source: Central Agency for Public Moblisation and Statistics, "Statistical Yearbook of Arab Republic of Egypt, 1952-73", Cairo, October 1974, pp.54-57.

the land. In 1965 10,000 families owned 813,000 feddans, or 12.6% of total land. This change came as a direct result of the disappearance after 1961 of the very large estates of over 200 feddans - which amounted to 19.7% of total land area in 1952. It is, however, interesting to note that the absolute area previously occupied by the lower strata of large ownerships (i.e. 50-100 feddans) did not significantly change despite the reduction of the ceiling to 100 feddans. Secondly, although the relative number of small ownership remained almost unchanged at 95%, their share of land increased from 35.4% to 57.1%, and their average size of holding from 0.8 to 1.2 feddans, during 1952-1965. This change is attributable to a number of factors. Most important was the redistribution of agrarian reform land which exclusively benefited this group. It also appears that the effect of inheritance, which tends to lower the average size of holding in this bracket, must have been more than offset by sales from big as well as very small owners to members of this group.[20] Finally, the most striking feature of Table 4 is the way in which the class of medium owners (5-50 feddans) was able to maintain and consolidate its position over the years. While their number remained constant between 1952 and 1965, the total area owned by them actually increased slightly. Changes within this group are also significant. We notice that despite a significant stability in the relative numbers of both the lower and upper strata, their shares of land ownership have increased, while the number and share of the middle group have slightly decreased. This is due to the parallel processes of fragmentation and concentration. Many large estates are continually subdivided through inheritance and their new owners will necessarily join the ranks of lower ownership brackets. One is led to think that this would be the main source of growth in the

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[20] R. Mabro, The Egyptian Economy, 1952-1972, op. cit., p. 72.

lower bound of the medium ownership group. The gain of the upper bound of this group must have resulted from purchases of land by this relatively wealthy class from large landowners, when the latter were allowed to sell land in excess of the agrarian reform ceiling, or by squeezing out smaller proprietors.[21]

We shall now examine the extent to which the above-mentioned changes in land distribution have altered the extreme inequality which characterised the pre-reform ownership structure. There is no doubt that the disappearance of the very large estates following the First Agrarian Reform of 1952 must have reduced the flagrant degree of inequality. Thus, as Table 5 shows, the Gini coefficient, which reflects the degree of concentration in land ownership, declined from 0.611 before the promulgation of the 1952 law to 0.492 thereafter. After the enactment of the law of 1961 the coefficient declined further so that in 1965 it was 0.383, showing a further decline in the concentration of land ownership during the first half of the sixties.

A similar conclusion can also draw by constructing Lorenz curves which relate to the distribution of land ownership at different points of time. This is done in Figure 1 which shows that the Lorenz curve has uniformly moved inwards to a significant degree, indicating a considerable reduction in the degree of concentration of land ownership between 1952 and 1965.

However, the above results should be treated with caution. The Gini coefficients may exaggerate the improvement in land distribution. First, the official data on the distribution of land ownership are

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[21] F. Abdel-Fattah, The Contemporary Village: Between Reform and Revolution, 1952-1970, Cairo 1975, p. 26 (in Arabic).

Table 5

Cumulative Percentages of the Number of Owners and of Owned land, and Gini Coefficient

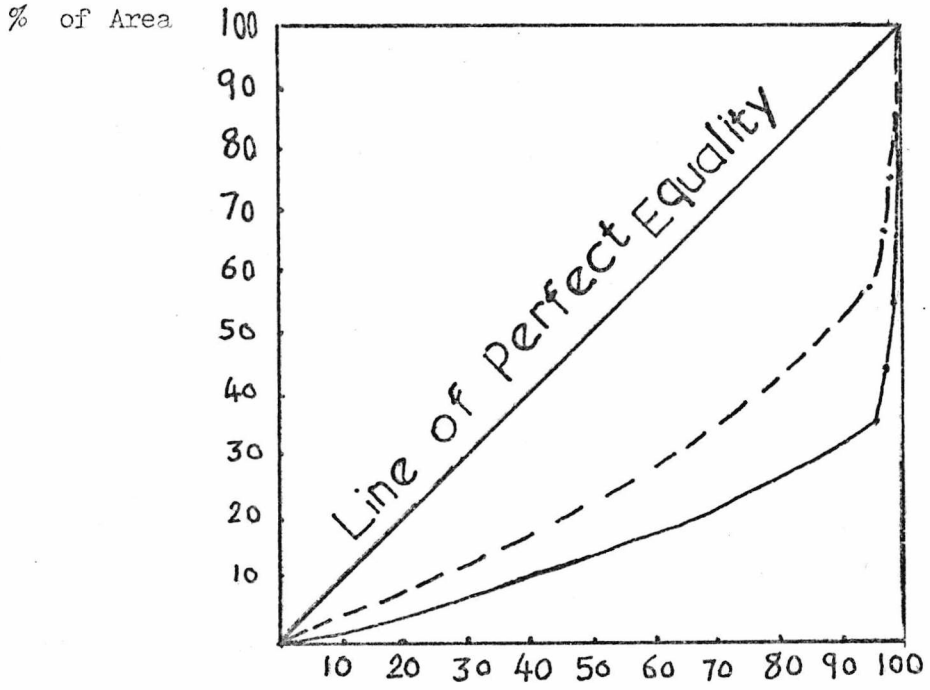
Size Class (feddans)	Before 1952 Law		After 1952 Law		In 1961		In 1965	
	Owners	Area	Owners	Area	Owners	Area	Owners	Area
<5	94.3	35.4	94.4	46.6	94.6	52.1	95.0	57.1
5-<10	97.1	44.2	97.0	55.4	97.2	60.7	97.5	66.6
10-<20	98.8	54.9	98.6	66.1	98.8	71.4	98.8	74.8
20-<50	99.6	65.8	99.6	79.7	99.6	84.8	99.7	87.4
50-<100	99.8	73.0	99.8	86.9	99.8	91.8	99.9	93.5
100-<200	99.9	80.3	99.9	94.1	100.0	100.0	100.0	100.0
Over 200	100.0	100.0	100.0	100.0	-	-	-	-
Gini Ratio (1)	0.611		0.492		0.432		0.383	

Note:(1) Computed by Central Bank of Egypt, Economic Review, vol.VIII, Nos. 3 and 4, 1968.

Source: From Table 4.

Figure 1

Lorenz Comparison for Distribution of Landownership, 1952-1965



———— Distribution Before 1952 Law

– – – – Situation in 1965

deficient in that they aggregate the "less than five feddans" ownerships, which include some 95% of all owners in one bracket.[22] Secondly, the official data are also deficient in that they tend to understate the degree of concentration of land ownership, particularly for medium and large landowners. This is because landownership statistics relate to the number of landed properties (ownerships) in each village and not to the number of proprietors. Thus they disregard the existence of multiple ownership.[23] However, these data limitations are not so serious as to affect the validity of the main trends in the distribution of land ownership outlined above.

A simple comparison of the changes in the structure of landownership in Egypt in 1952 with that in 1965, as Table 6 shows, reveals that by 1965 about 671,000 feddans had been distributed in full ownership to small landowners as a result of the 1952 and 1961 measures. The area finally transferred from big landowners to small landowners as a result of the measures was much greater. The area sold by big landowners to small farmers, according to provisions of Article 4 of the 1952 Land Reform Law (enabling the landlords to sell land in excess of the ceiling to their tenants in small plots not exceeding five feddans), amounted to 107,000 feddans.[24] Moreover, about 453,000 feddans[25] had been sold to

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22 Some evidence suggests that the distribution of ownership within this very large bracket might have become more unequal. After the 1952 reform, the "less than five feddans" owners amounted to 2,642,000 of whom 2,018,000 or 76% owned less than one feddan. A survey of ten villages in 1968 suggested that this ratio had risen to 89%. See: F. Abdel-Fattah, "The Contemporary Village: Between Reform and Revolution, 1952-1970", op. cit., p. 26.

23 G. Baer, "A History of Landownership in Modern Egypt, 1800-1950", op. cit., p. 77.

24 218,000 feddans represents private sales and other transactions which includes 111,000 feddans sold by other public organisations to small landholders. See: U.A.R., Statistical Handbook, June, 1970, p. 53.

25 671,000 feddans which represents the cumulative distributions of Land Reform up to 1965 minus 218,000 feddans.

Table 6

Changes in the Structure of landownership, 1952-65

Size Class (feddans)	Number of landowners			Total Area Owned			Sources of Change in Total Area Owned	
	Before 1952 Law (000's)	1965 (000's)	Change (000's)	Before 1952 Law (000 feddans)	1965 (000 feddans)	Change (000 feddans)	(a) Transfers of land as a result of Agrarian Reform Programme (000 feddans)	(b) Private sales and other transactions (000 feddans)
<5	2642	3033	+391	2122	3693	+1571	+671 (3)	+218 (4)
5-<10	79	78 (1)	-1	526	614 (2)	+88	0	+88
10-<20	47	41	-6	638	527	-111	0	-111
20-<50	22	29	+7	654	815	+161	0	+161
50-<100	6	6	0	430	392	-38	0	-38
100-<200	3	4	+1	437	421	-16	0	-16
≥200	2	0	-2	1177	0	-1177	-875 (5)	-302
Total	2801	3191	+390	5984	6462	+478	-204 (6)	0

Notes: (1) Adjusted figure (See notes to Table 4) and R. Mabro, The Egyptian Economy, 1952-1972, op.cit., p.73. (2) There is some doubt in this figure. In the absence of firm evidence, one assume that the decrease in the area in this size class (111,000 feddans) has its counterpart in the 111,000 feddans sold by public organizations to small farmers. (3) This figure represents the cumulative distributions of Land Reform lands up to 1965. See Table 3, column 3. (4) This figure includes 111,000 feddans sold by other Public Organizations to small holders. (5) This figure represents the total area requisitioned from 1952 to 1966. See R. Mabro, The Egyptian Economy, op.cit., p.68. (6) That figure represents the surplus of the requisitioned area over the actually distributed land.

small farmers by land reclamation organisations and companies, including Nile Deposit lands and the land distributed by the Egyptian Organisation for Desert Development. The increase in the area owned by medium-sized landowners in the size-class 20-50 feddans is totally accounted for by the crash sales and other private deals in the land market that occurred after the implementation of the 1952 Land Reform. This can be explained by the fact that the big landowners sold estates that they were legally entitled to keep, fearing a subsequent reduction of the limit on residual holdings, or more drastic tenancy regulations. These estates were, in general, purchased in plots of 20-100 feddans by farmers who either kept them or broke them up further and sold them to smaller farmers.[26]

The main conclusion to be drawn from the above discussion is that the effect of land reform had been limited to the two extremes of land ownership, that is the large and the small. The distribution of some 13% of the cultivated area to about 9% of the rural population had no doubt diminished the importance of large ownerships and, in fact, had virtually eliminated the very large ones. At the same time, redistribution slightly improved the lot of small farmers while it had consolidated the position of the medium-sized properties (landowners). This latter feature of the structure of land ownership, as we noted earlier, goes back to the 1920s, and remained unaffected by land reform. This class of medium-sized landowners, many of whom lived in the villages and represented the rural upper-income group, not only retained their share of cultivated area but also gained in social and political influence,

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[26] G. Saab, "The Egyptian Agrarian Reform", op. cit., pp. 28-29.

especially after the demise of the class of large landowners.

Furthermore, land reform did not affect the landless peasants since land distribution was limited to previous tenants and small farmers.

The existence of a sizeable pool of landless peasants was - and still is - a notable feature of the Egyptian Agrarian scene. These landless peasants, being the least credit-worthy members of the rural community, find themselves unable to rent land and can only sell their labour power for subsistence. Thus they are compelled to take casual day to day employment or to enter longer-term commitments as permanent labourers.[27]

Accurate data on the landless peasants is not available. However, a tentative analysis of the number of landless families has been undertaken recently.[28] The findings of this analysis are summarised in Table 7 which shows that there was a significant fall in the absolute number of landless families between 1952 and 1961, but an increase thereafter. This reversal of trend in the late 1960s can be attributed to the growing population pressure on a limited area of land and the freeze of agrarian reform.

To assess the impact of land redistribution on the structure of landholdings we distinguished between this impact on the structure of landholdings among landowners and among the rural population as a whole. This is done in Table 8 for the years 1950 and 1961. Despite some improvement between the two years the table shows that the distribution of landholdings was fairly skewed in both years. The land tenure system

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27 See H. H. Ayrout, The Egyptian Peasant, Beacon Press, Boston, 1963, p. 55.

28 S. Radwan, "The Impact of Agrarian Reform on Rural Egypt, 1952-1975", op. cit., p. 22.

Table 7

An Estimate of Landless Families in Rural Egypt, 1950-1972

(000's)

	1950	1961	1965	1970	1972
1. Rural Population	13 700	16 120	17 604	19 280	19 928
2. Number of people engaged in non-agricultural activities	958	1 128	1 232	1 350	1 395
3. Agricultural population	12 741	14 992	16 372	17 930	18 533
4. Number of families engaged in agriculture	2 548	2 999	3 274	3 586	3 707
5. Number of landed families	1 003	1 642	1 785	1 853	1 857
6. Number of landless families	1 545	1 357	1 489	1 733	1 850
7. Landless families as % of agricultural families	60.6	45.3	45.5	48.3	50.0

Notes and Sources:

Row (1): Figures for 1950, 1961 and 1965 are obtained by interpolating between population census years; 1970 and 1972 are estimates of the Central Agency for Public Mobilisation and Statistics and published in the 1974 World Bank Report on Egypt, Table 1.3.

Row (2): These figures were estimated at 7% of total rural population, a ratio suggested by population census data.

Row (4): Calculated by applying a uniform average size of rural family of five persons which is the size observed in successive population censuses.

Row (5): Figures for 1950 and 1961 represent the total number of landholdings as reported by the agricultural census in those years. For subsequent years data were obtained by adding to the number of landed families reported in 1965 the families receiving new land from agrarian reform authorities.

Row (6): Figures obtained as a residual.

TABLE 8

Distribution of Landholdings by Size, 1950 and 1961

Size of Holdings (Feddans)	Among Landowners								Among rural population							
	1950				1961				1950				1961			
	Total Number of Holdings (000 Families)	%	Area (000 Feddans)	%	Total Number of Holdings (000 Families)	%	Area (000 Feddans)	%	Number of Holders (000 Families	%	Area (000 Feddans)	%	Number of holders (000 Families	%	Area (000 Feddans)	%
Landless 0									1545[1]	60.6	000.0	0.0	1357[1]	45.2	000.0	0.0
0- <1	214	21.4	111.8	1.8	435	26.4	211.2	3.4	214	8.4	111.8	1.8	435	14.5	211.2	3.4
1- <2	248	24.8	335.7	5.5	386	23.5	505.3	8.1	248	9.7	335.7	5.5	386	12.9	505.3	8.1
2- <3	162	16.1	373.9	6.1	286	17.5	647.9	10.4	162	6.3	373.9	6.1	286	9.6	647.9	10.4
3- <4	99	9.9	328.7	5.4	174	10.6	566.4	9.1	99	4.0	328.7	5.4	174	5.8	566.4	9.1
4- <5	63	6.3	272.7	4.4	100	6.1	423.6	6.8	63	2.5	272.7	4.4	100	3.3	423.6	6.8
5- <10	122	12.2	818.4	13.3	170	10.4	1100.7	17.7	122	4.8	818.4	13.3	170	5.7	1100.7	17.7
10- <20	53	5.2	705.3	11.5	57	3.4	742.6	12.0	53	2.1	705.3	11.5	57	1.9	742.6	12.0
20- <50	27	2.6	792.1	12.9	24	1.5	689.3	11.0	27	1.0	792.1	12.9	24	0.8	689.3	11.0
50- <100	8	0.8	579.1	9.4	6	0.4	429.9	7.0	8	0.3	579.1	9.4	6	0.2	429.9	7.0
⩾100	7	0.7	1826.3	29.7	4	0.2	905.9	14.5	7	0.3	1826.3	29.7	4	0.1	905.9	14.5
Total	1003	100.0	6144.0	100.0	1642	100.0	6222.8	100.0	2548	200.0	6144.0	100.0	2999	100.0	6222.8	100.0

78.5% 20% 39.1% 23.2% 37.7% 84.1% 15.3% 37.8% 40.7% 21.5%

Note: (1) Compiled from Table 7, row 6.

Source: Compiled From: Ministry of Agriculture, Department of Statistics and Census, Agricultural Census 1950, vol. I, Government Press, Cairo, 1968, pp. 34-35; and UAR, The Fourth Agricultural Census 1961, Cairo, 1967, Part I.

was largely dominated by smallholdings, those less than five feddans in size accounting for 78.5% of the total number of holdings in 1950, and 84% in 1961, while the acreage they covered amounted to 23.2% and 38% of total cultivated land in 1950 and 1961 respectively. The group of medium-sized holdings (from five to 50 feddans) amounted to 20% of total holdings in 1950 and 15.3% in 1961, while their cultivated area rose from 37.7% to 40.7%. The acreage of large farm holdings (50 feddans and over) declined from 39% to 21.5% of total cultivated land as a result of land reform measures.

Table 8 also shows that the inclusion of the landless in the distribution of landholdings has fundamentally changed the picture, that is land distribution among rural population as a whole was much more unequal than among landowners only. Thus, as Table 9 shows, the Gini Coefficient of inequality declined from 0.889 to 0.800 between 1950 and 1961. Despite some improvement between these two years the table shows that while the bottom 40% of the rural population had no land in 1961, and half the population controlled only 1%, the top 10% controlled about 65% of the land. We are inclined to believe that the situation must have worsened during the late 1960s in view of the fact that landlessness has increased, the supply of arable land remained more or less constant, and the land distribution programmes affected only a small proportion of available land.

Table 9

Decile Distribution of Landholdings in Egypt, 1950 and 1961

Deciles	Percentage Share in Landholding	
	1950	1961
1	0.0	0.0
2	0.0	0.0
3	0.0	0.0
4	0.0	0.0
5	0.0	1.0
6	0.0	2.54
7	2.31	6.21
8	16.05	9.62
9	12.03	15.67
10	79.61	64.96
Gini Coefficient (average)	0.889	0.800

2.4. DISTRIBUTION OF HOLDINGS ACCORDING TO TYPE OF TENURE

Tables 10 and 11 present data on the distribution of holdings and farm area by size of holdings for the basic types of tenure.[29] From these data one can see some basic facts characterising the Egyptian agrarian structure in 1961. First, a high proportion of holdings in the size class less than one feddan (39%) were "purely leased holdings". Holdings in the size class 1-3 feddans were distributed more evenly between the three tenure systems but a large proportion of holdings in

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[29] Land tenure systems include a complex set of relationships which involves many forms and bundles of land-use rights. For, we shall concentrate in this section on the relationship between the owner of the land (the one who has a possessory claim to the land), and the land user or immediate cultivator.

the range 3-10 feddans were concentrated in the "mixed" category, where owned and leased land are combined together in one operating unit. Secondly, there was an upper limit to the area governed by a tenant-farmer as a "purely leased holding" (almost 10 feddans). Thirdly, the proportion of "purely leased" holdings and farm area (for holdings of larger size, over 10 feddans) declined very sharply with the increase in the size of holding, leaving "owner occupied" and "mixed" farms as the two dominant forms of land tenure. For the largest holdings (over 50 feddans), the "purely leased" category of tenure was negligible.

Table 12 throws some light on the relationship between the size of farm holdings and the type of tenancy arrangement that existed in 1961. It shows data on the distribution of leased holdings and farm area allocated to "cash rent" and "sharecropping and other types of leases" by holding sizes. The area under "share-cropping" was negligible for smallholdings of less than three feddans but significant for small farms of 3-5 feddans, as well as for medium size holdings of 5-20 feddans (which represents 14-18% of total leased land), while for larger farm holdings (over 20 feddans), the proportion of share-cropping averaged only 7% of the total leased land.

Although it is difficult to explain the significance of share-cropping in the tenancy arrangements of medium size holdings, it might be argued that for holdings of more than 20 feddans crop-sharing ceases to be a profitable arrangement. The incentives for increased investment as well as for capturing the returns on such investment may indicate the preference for fixed contractual payments.

The pattern of distribution of farm holdings mentioned earlier had negative implications for resource allocation in Egyptian agriculture and the government pursued a vigorous policy of land consolidation to alleviate the adverse effects. It attempted to consolidate land holdings into more efficient larger units through the development of co-operative

Table 10

Distribution of Holdings of Different Sizes by Type of Tenure, 1961

Size of Holding (feddans)	Total Number of Holdings	%	Number of "Purely Owned" Holdings	%	Number of "Purely leased" Holdings	%	Number of "Mixed" Holdings	%
<1	434 219	100	204 942	47	168 791	39	60 486	14
1-<2	385 901	100	124 479	32	138 635	36	122 787	32
2-<3	286 804	100	106 017	37	86 894	30	93 893	33
3-<4	174 595	100	58 827	34	51 109	29	64 659	37
4-<5	99 722	100	32 271	32	27 154	27	40 297	41
5-<10	170 019	100	56 193	33	40 292	24	73 534	43
10-<20	56 705	100	23 329	41	8 254	15	25 122	44
20-<50	23 811	100	11 295	48	1 991	8	10 525	44
50-<100	6 424	100	3 479	54	440	7	2 505	39
⩾100	3 960	100	2 338	59	266	7	1 356	34
Total	1642 160	100	623 170	38	523 826	32	495 164	30

Source: UAR, Agricultural Census 1961, Part I, Section A, Table III.

Table 11

Distribution of Farm Area by Types of Tenure and Size of Holdings, 1961

Size of Holding (feddans)	Total Area (feddans)	%	"Purely Owned" Holdings (feddans)	%	"Purely Leased" Holdings (feddans)	%	"Mixed Holdings" (feddans)	%	Ratio of rented to owned land in "mixed holdings"
<1	211155	100	92044	44	79658	38	39453	18	1.2
1-<2	505325	100	160898	32	173707	34	170720	34	1.3
2-<3	647912	100	236665	36	192006	30	219241	34	1.3
3-<4	566407	100	190513	34	162737	29	213157	47	1.2
4-<5	423622	100	137176	32	113471	27	172972	41	1.2
5-<10	1100669	100	363125	33	253500	23	484044	44	1.2
10-<20	742619	100	307802	41	103498	14	331319	45	1.2
20-<50	689267	100	328373	48	56193	8	304701	44	1.1
50-<100	429952	100	232611	54	29193	7	167925	39	1.0
⩾100	905911	100	615342	68	49740	5	240829	27	0.9
Total	6222839	100	2664549	43	1213926	19.5	2344364	37.5	1.55

Source: Agricultural Census 1961, Part 1, Section A, Table III.

TABLE 12

Distribution of Holdings and Leased Land by Types of Rent, 1961

	Total leased		Cash Rent				Share cropping and others			
Size of holdings	No. of holdings (000s)	Area (000 Feddans)	No. of holdings (000)	%	Area (000 Feddans)	%	No. of holdings (000)	%	Area (000 Feddans)	%
less than 1	229.3	101.2	222.7	97	98.0	97	7.0	3	3.3	3
From 1 to less than 2	261.4	269.4	247.4	95	253.3	94	15.3	5	16.0	6
2-<3	180.8	314.3	165.1	91	283.0	90	17.4	9	31.3	10
3-<4	115.8	280.7	101.9	88	240.0	85	15.7	12	40.5	15
4-<5	67.4	207.5	58.2	86	127.4	83	10.4	14	35.1	17
5-<10	113.8	517.5	97.0	85	426.3	82	19.1	15	91.2	18
10-<20	33.4	285.5	29.7	89	247.0	86	3.6	11	38.5	14
20-<50	12.7	216.5	11.7	92	200.2	92	1.0	8	16.3	8
50-<100	2.9	114.3	2.7	93	106.6	93	0.2	7	7.7	7
⩾ 100	1.6	163.5	1.5	94	151.8	93	0.1	6	11.7	7
Total	1019	2470	938		2178.8		90.6		291.8	

Source: Fourth Agricultural Census 1961, Section A, Table V

organisation. It also aimed to overcome the shortage of agricultural production, through vertical and horizontal expansions. It is the aim of the following section to investigate these policies.

2.5. CO-OPERATIVES AS AN ALTERNATIVE FORM OF ORGANISATION FOR RURAL DEVELOPMENT

One of the most striking features of the Egyptian agrarian reform was the creation of the supervised co-operatives. These co-operatives, first established in agrarian reform areas but later extended to cover almost the entire countryside, have become the most significant policy instrument through which Government influences rural development.

The principal question that arises here is to what extent did the co-operative system succeed in changing the character of a predominantly capitalist agriculture which had developed in Egypt since the establishment of private land ownership in the second half of the 19th century? To answer this question, this section first begins with a brief survey of the evolution and objectives of the co-operative system. Secondly, it examines the impact of the co-operative system and the various policies it introduced on resource allocation, the transfer of the agricultural surplus, the process of differentiation and the change in the socio-political power structure in the Egyptian village.

A. Evolution, Objectives of the Co-operatives

The creation of the supervised co-operatives in 1952 was undoubtedly a turning point in the history of the co-operative movement in Egypt. Generally, we can distinguish two phases of development prior to the 1952 Agrarian Reform. The first phase began at the turn of the century when the emerging class of Egyptian capitalists (mainly landowners and cotton merchants) were looking for an alternative source of finance to substitute the decreasing flow of foreign capital, especially after the crash of 1907. Agricultural credit was difficult

to obtain from a banking system totally controlled by foreign interests. Commercial banks were mainly concerned with financing trade in cotton by advancing short-term loans to big landlords, merchants and exporters, but were not generally willing to undertake small credit transactions with the mass of small farmers. For loans, real estate banks asked for collateral security which was far beyond the ability of small holders to provide. Given these conditions, the majority of farmers were compelled to turn to village moneylenders who extorted rates of interest that often exceeded 100% per annum.[30] These rates represented a heavy burden on the meagre income of the small farmers. Some attempts were made to improve the system of rural credit, the most important of which was the establishment, in 1902, of the Agricultural Bank of Egypt to provide loans in small sums (£E500) at a 8% interest rate. But the inability of most borrowers to repay, due to sharp fluctuations in cotton prices, led to a wave of expropriation of land which affected small farmers in particular.[31] The promulgation of the five-feddan law in 1912 (prohibiting seizure for debt of properties of five feddans or less) had the adverse effect of reducing the bank's lending operations. Thus, in 1913 the bank loans offered to small farmers amounted only to £E4 million compared to debts of £E12 million to private moneylenders. Within this context a group of reformers called for the creation of "agricultural unions" to provide farmers with the necessary credit and services on a co-operative basis.

The second phase in the development of the co-operative movement

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[30] G. S. Saab, The Egyptian Agrarian Reform, 1952-1962, op. cit., p. 8.

[31] The number of expropriations of small holdings during the period 1909-1913 averaged around 450 per year. See: E. Eshag and M. A. Kamal, "A Note on the Reform of the Rural Credit System in UAR (Egypt)", Bulletin of Oxford University Institute of Economics and Statistics, Vol. 29, No. 2, May 1967.

followed the 1919 Revolution. One of the most significant measures taken was the establishment in 1931 of the "Credit Agricole d'Egypte" to provide co-operatives with the needed credit at a 5% interest rate. Despite the notable growth of the co-operative movement during this period, the government maintained a tight grip on the movement, mainly through allocation of funds to the Credit Agricole, which limited the effectiveness of most societies. Wartime difficulties renewed the call for government support. Therefore, the government created the Department of Co-operation within the Ministry of Social Affairs as the agency through which state support was to be channelled. In addition, in 1948 the bank's name was changed to the "Credit Agricole et Cooperatif" and its capital increased in order to provide more credit to co-operatives.

Despite the notable expansion of agricultural co-operatives during the 1930s and 1940s,[32] the main weaknesses of the system remained unchanged. One of these was that agricultural co-operation lost its popular character in the face of increasing government intervention. The co-operative societies were in most cases reduced to branches of the Credit Agricole, the sole function of which was to provide credit. Even this role was extremely limited in view of the meagre resources allocated by the government or the banking system. For instance, the total loans granted by the Credit Agricole increased from £E2 million to £E5 million during the period 1933-1947, then to £E15.7 million in 1952. Despite this increase between 1947 and 1952 they could hardly cover more than a fraction of rural credit needs.[33] Moreover, small farmers, who were

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[32] The number of agricultural co-operatives increased from 559 (with a membership of 54,973 and a capital of £E158,382) in 1932 to 1,565 societies (with a membership of 545,756 and a capital of £E744,782) in 1944. See: Tarik El-Bishry, "The History of the Co-operative Movement in Egypt", Al-Taliaa, September 1965, pp. 48-50. (In Arabic)

[33] E. Eshag and M. Kamal, "A Note on the Reform of the Rural Credit System in Egypt", op. cit., p. 100.

supposed to be the main beneficiaries of the system, had little or no access to co-operative services. Most co-operatives were dominated by large landowners who found it advantageous to form themselves into co-operative societies in order to obtain cheap credit. The definition of "small owners" who could qualify for co-operative cash loans had little effect in favouring the genuinely small peasants. A "small owner" was initially defined as an owner of 30 feddans or less but later the definition was changed to include owners of 200 feddans or less. In this way, 99.9% of all landowners holding three-quarters of the total agricultural land were made eligible for individual cash loans.[34] Under these circumstances, the majority of small farmers were compelled to continue their dependence on the private moneylender, a process which usually resulted in the loss of their smallholdings and their joining the ranks of the landless.

From the foregoing survey it becomes clear that the co-operative system has reflected the main features of the prevailing agrarian system, a system which was dominated by large landowners. Thus the co-operatives were no more than credit institutions catering mainly for the needs of this dominant class, with little or no regard for small farmers.

Against this background the supervised agricultural co-operatives were created. The First Agrarian Reform of 1952 stipulated that every beneficiary must join one of the multi-purpose agricultural co-operatives supervised by appointees of the Ministry of Agrarian Reform. This was designed to assist new holders who inevitably had little experience and knowledge of agricultural management and organisation. Its aim was to provide him with credit and other inputs on easy terms and to help develop the co-operative spirit.

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[34] Ibid., p. 100.

With government concentrating its services through co-operatives the system was extended beyond the boundaries of agrarian reform areas until it covered almost all of rural Egypt by the mid-1960s. Table 13 summarises the development of the agricultural co-operatives during the period 1952-1970. It shows that agricultural co-operatives tripled in number, while membership increased fivefold and capital eleven fold.

Finally, it is worth noting that the wide network of co-operatives[35] has enabled the government to reach the remote rural areas and to influence directly the course of rural development.

B. Co-operatives and the Organisation of Agricultural Production

One of the most interesting features of Egypt's co-operative system[36] was the attempt to reorganise agricultural production through the introduction of the system of land and crop consolidation. One of the basic problems in the way of increased agricultural productivity and efficiency was the continuous fragmentation of land holdings. The problem of fragmentation - manifested by the structure of ownership being dominated by tiny and separated holdings - was a constant feature of Egyptian agriculture since the establishment of private land ownership.

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35 Three types of agricultural co-operatives can be distinguished: (i) the agrarian reform and the land reclamation co-operatives which were created in land reform and newly reclaimed areas to cater exclusively for these benefiting from land redistribution; (ii) the multi-purpose co-operatives, or credit co-operatives, which have as their members all the farmers on the "old" land, i.e. outside land reform areas; and (iii) the specialised co-operatives with a membership of producers engaged in agriculture-related activities such as animal husbandry, fisheries and food processing. The multi-purpose co-operatives are the most important ones. See: S. Radwan, "The Impact of Agrarian Reform on Rural Egypt, 1952-1975", op. cit., pp. 53-54.

36 The introduction of the co-operative system in Land Reform areas in Egypt was directly copied from the British Gezira Project in Sudan, and was adopted as a clever way of combining large scale advantages in irrigation, crop rotation and marketing with small scale production and private initiative. See: B. Hansen, "Economic Development in Egypt" in C. A. Cooper and S. S. Alexander (eds.) Economic Development and Population Growth in the Middle East, Rand Corporation Study, New York, 1972.

Table 13

Development of Membership, Capital and the Number of Agricultural Cooperatives

1952-1970

Agricultural Years	Number of Co-operatives	Members (000s)	Capital £E (000s)
1952	1727	499	661
1965	4839	2369	2653
1966	4879	2533	2682
1967	4921	2751	2801
1968	4955	2960	2974
1969	5009	2921	4248
1970	5049	2830	7415

Source: Central Agency for Public Mobilization and Statistics, Statistical Handbook, June 1971, p.52, and Statistical Yearbook, October 1974, p.52.

As we have seen the structure of land ownership was dominated by small holders and the average size of their holdings has declined over time. By the beginning of the 1950s, the problem of fragmentation had reached serious proportions with most landholdings below what was considered a minimum viable size of farm.[37] The total number of operational holdings amounted to 1,003,000, of which 62% were below three feddans and of an average size of 1.3 feddans.[38]

The system of crop and land consolidation was first applied to land reform areas. The co-operatives treated the whole land reform area controlled by them as a single unit which they divided into three blocks, each of which was planted with a single crop according to the phase of the triennial crop rotation. Though farmers retained both ownership and the responsibility for cultivating their own plots a number of important farming operations such as mechanised ploughing, crop fumigation and pest control, were done by the co-operative since they could be performed more efficiently by them.

The advantages of this system became immediately apparent. By cultivating a single crop in a large area it was possible to eliminate the maze of separate irrigation and drainage channels required by the cultivation of a variety of crops on the same land, thus saving some 10% to 20% of the cultivated land.[39] Moreover, crop consolidation made it possible to avoid certain losses caused by the contiguity of different crops with varying irrigation requirements in a single block of land,

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37 An area of three feddans was considered the minimum holding to be operated by the labour of an average family in rural Egypt. See: S. Marei, The Fragmentation of Agricultural Land in Egypt, Higher Institute for Socialist Studies, Cairo, 1965 (in Arabic).

38 Department of Statistics and Census, Agricultural Census 1950, Vol. I, Cairo, 1958, pp. 34-35.

39 S. Marei, Agrarian Reform in Egypt, Cairo, 1957, pp. 190-191 (in Arabic).

which often resulted in the transmission of pests and diseases from one crop to another. Crop consolidation made it also possible to introduce a uniform and more efficient system of crop rotation. The damage to soil fertility under the biennial system, which was popular during the post war cotton boom, was significant due to the greater frequency of cotton crops, the short fallow period and the less frequent planting of clover. Under the new triennial rotation, where cotton was cultivated every third year, soil was allowed to rest eight months and clover was grown twice every three years.[40]

The success of land and crop consolidation on land reform areas led the government to think of extending the system to non-reform areas. A pilot experiment was conducted in the village of Nawag in 1955 when the government initiated a scheme of voluntary co-operation to consolidate fragmented holdings.[41] This experiment produced impressive results. Between 1955 and 1958 there was an increase in the average yield per feddan of 30% for cotton and 15% for wheat.[42]

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[40] It was estimated that the change in the system of rotation has increased the yield of land by as much as 20%. See: E. Eshag and M. Kamal, "Agrarian Reform in the UAR (Egypt), op. cit., p. 87.

[41] In the village of Nawag 1,543 feddans of land were owned by 1,585 owners. There were 1,181 holdings scattered among 3,500 plots, each differently drained and irrigated. Of the 1,585 owners, 1,346 had one feddan or less; only 11 owners had more than ten feddans, and the two largest holdings were about 40 feddans each. The agrarian reform authorities reactivated the semi-dormant co-operative in the village and persuaded landowners to pool their land for cultivation in a manner similar to that followed in land reform villages. The entire land of the village was divided into several large blocks each incorporating a number of smallholdings. The owners of the plots in each block were required to follow a uniform system of crop rotation. Moreover, those farmers who owned separate pieces of land located in different parts of the village were induced to regroup their holdings in a single block on an exchange basis. See: G. Saab, "The Egyptian Agrarian Reform", op. cit., pp. 190-196.

[42] See: J. S. Oweis, "The Impact of Land Reform on Egyptian Agriculture, 1952-1965", Intermountain Economic Review, Vol. II, No. 1, 1971, p. 60.

By the early 1960s the movement towards consolidation was gaining strength and momentum, and the government considered the generalisation of the system to the whole country. Two provinces, Kafr-el-Sheikh and Beni Suef, were chosen as a testing ground for an elaborate system of co-operative reorganisation.[43] The results demonstrated the feasibility and desirability of the co-operative reorganisation of village economics.[44] Thus the government drew a plan to extend the system into the rest of the country by 1970.

It is worth noting that beyond the establishment of co-operatives and the enforcement of the crop rotation system, the land and crop consolidation programme had a limited success. First of all, it has failed to solve the problem of fragmentation. However, the agrarian reform law has itself exacerbated this by allowing the redistribution of land in parcels of two to five feddans.[45] Secondly, the crop consolidation programme has adversely effected poor and small peasants who found it difficult to diversify their products. Their small plots of land would inevitably fall within a single block and they would be obliged to grow a single crop. On the other hand, the larger landowners have an advantageous position as their holdings are large enough to enable them to diversify their production and have a surplus to sell.

From the foregoing discussion we can conclude that the ideas of land and crop consolidation had a great potential in creating a new form of communal land system. The co-operatives were, to a large extent, instrumental in preventing further exhaustion of the soil by introducing

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[43] Public Organisation of Land Reform, The Project of Reorganising Agricultural Production in the Governorates of Kafr-el-Shiekh and Beni Suef, Cairo, 1965 (in Arabic).

[44] See J. S. Oweis, "The Impact of Land Reform on Egyptian Agriculture, 1952-1965", op. cit., p. 60.

[45] Law No. 178, of 1952, Article 9.

the new triennial rotation, but they did not succeed in providing a viable alternative to the system of peasant agriculture except, perhaps, on land reform areas. Moreover, a negative aspect of the Egyptian co-operative system was its adverse effect on poor and small peasants since it resulted in a redistribution in favour of larger farmers.

C. CO-OPERATIVES AND THE PROVISION OF AGRICULTURAL INPUTS

One of the main objectives of the supervised co-operatives was to influence agricultural productivity through the supply of improved inputs - seeds, fertilizers, pesticides, technical advice and credit. By mid-century, agricultural development in Egypt had reached a stage where it crucially depended on better inputs and improved methods of cultivation. The co-operatives provided a convenient network, akin to an agricultural extension service, which the government used to promote "net inputs" and diffuse new techniques.[46]

The government had a monopoly of supply for fertilisers, certain selected seeds and pesticides, and used the co-operative as a distribution channel. Table 14 provides an idea of how different inputs were supplied by the co-operatives. It shows that the total value of these inputs increased significantly during the 1950s and they became the sole supplier of most inputs by the mid-1960s. Moreover, easy and cheap credit, in cash and kind, must have made it easier for poor and small farmers to have access to these inputs. Co-operatives were also instrumental in extending the use of improved seeds and, to a lesser extent, new cultivation techniques.

Another aspect of the supervised co-operatives in Egypt relates to agricultural credit. The history of agricultural credit in Egypt dates

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[46] R. Mabro, "The Egyptian Economy, 1952-1972", op. cit., p. 75.

Table 14

Value of Inputs Supplied by the Co-operatives

1960-1970

(£E thousands)

Agricultural Years	Seeds	Fertilisers	Pesticides	Pest-Control Equipment	Bags
1960	542	2149	960	116	14
61	561	1942	1539	352	137
62	523	1166	3129	480	500
63	731	3025	1894	482	700
64	856	7531	1647	1065	1000
65	1202	8993	1785	55	1174
66	1191	9153	2442	961	n.a.
67	3348	9845	2203	12	n.a.
68	4771	11679	1623	n.a.	n.a.
69	4661	10966	1655	48	1554
1970	3806	8989	1757	46	n.a.

Note and Source: n.a. = not available

Statistical Yearbook, various issues.

back to 1930 when the Agricultural Credit Bank was established. Before that date the country did not have a credit system in the real sense. As we have seen from our brief historical survey, the pre-reform rural credit system suffered from two basic deficiencies: inadequacy of loans and the absence of machinery which would direct available credit towards the poorer farmers who were left at the mercy of moneylenders who tried to get as much benefit as they could by imposing on borrowers heavy terms and exorbitant rates of interest. The question of the volume of credit was solved by authorising the Agricultural Credit Bank to raise the money needed for its lending operations by borrowing from the Central Bank and, later, through the issue of bonds up to the value of £E30 million. Moreover, from 1961 the interest levied on loans granted by the Agricultural and Co-operative Bank was abolished.[47] Further steps were taken to solve the more difficult problem of ensuring the access of poorer peasants to credit. By 1962 the co-operative had become the sole suppliers of agricultural credit, co-operative membership was obligatory for all farmers, and loans were advanced against the security of crops instead of against land as had previously been the case. But, the major step in the evolution of the rural credit system was taken in 1964 when the Agricultural and Co-operative Credit Bank was converted into an Organisation for Agricultural and Co-operative Credit. This took over responsibility for the formulation of general policy for agricultural credit and for supervising the implementation of that policy. Its function was also to supply the

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[47] In 1967 after the Arab-Israeli war, interest on loans was re-established, and fixed at 4.5%. As from 1970, a commission of 3% is charged on all loans granted by the bank, and a fine or a penalty amounting to 5% is charged in case of overdue debts. See: Central Bank of Egypt, Economic Review, Vol. XIII, No. 1, 1973, p. 16.

Table 15

Co-operative Loans by Type and Purpose

(£E million)

(1) Loans by Term

Year	Medium Term	Short Term	Total (at current prices)	Total (at constant prices)(a)
1959/60	1.5	35.1	36.6	36.6
61	1.2	38.2	39.4	39.4
62	0.9	41.5	42.4	43.3
63	2.1	51.8	53.9	37.2
64	3.2	56.3	59.5	41.6
65	2.6	62.8	65.4	46.7
66	1.3	78.1	79.4	58.0
67	2.2	84.2	86.4	66.0
68	2.3	76.3	78.6	69.6
69	1.9	66.9	68.8	63.1
70	1.8	79.0	80.8	74.1

Note and Source:

(a) The volume of credit at constant prices are calculated by using the price index of manufactured agricultural input deflator. See Appendix 2.

Egyptian Gernal Organisation for Agricultural and Co-operative Credit.

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(2) Loans by Input Classification

Year	Tractors	Machinery	Livestock (cattle)	Seeds	Insecticides	Fert-iliser
1959/60	-	0.8	0.6	1.9	-	12.6
61	-	0.7	0.6	2.3	-	16.4
62	0.5	0.7	0.2	2.8	1.6	17.1
63	0.1	1.5	0.6	2.7	6.9	20.3
64	-	0.7	1.0	2.9	9.0	20.4
65	0.3	0.8	1.3	3.0	6.0	25.3
66	1.2	0.9	1.9	4.6	7.8	34.7
67	0.9	1.8	2.3	5.8	9.6	38.0
68	0.8	1.9	0.9	8.9	7.2	35.9
69	0.2	1.6	0.9	7.5	6.3	32.0
70	0.6	1.5	2.3	7.3	9.2	35.0

Source: Egyptian General Organisation for Agricultural and Co-operative Credit.

funds necessary for the extension of credit and to provide the necessary requirements for agricultural production.[48]

As may be seen from Table 15 the most notable feature of this new rural credit scheme was its emphasis on short-run loans. These loans, which were in kind (i.e. seeds, fertilisers, insecticides, etc.) were made to each farmer according to the area of the farm and the type of crop planted. The amount of cash loans allocated to each farmer was determined by reference to his cash outlays in production. Table 15 shows that the volume of credit at current prices was more than doubled during the period 1959/60-1969/70, but the real growth of rural credit at constant prices was not that impressive. It increased from an average of £E41 million per year during the period 1960-1964 to an average of £E65 million during the second half of the 1960s. Moreover, despite this growth in the volume of credit, it was far from satisfying the farmer's needs.[49]

Detailed breakdowns of agricultural loans by purpose and kind are available for certain years in the 1960s. The disaggregated figures for 1965/66 reveal a typical pattern. Short-term cash loans, which represented 30% to 40% of total loans, were particularly biased in favour of the large landowners and capitalist farmers who operated with wage-labour. Medium-term loans, repayable over five to ten years, were also advanced to farmers for the purchase of machinery and animals, and for land reclamation.[50] These medium-term loans represented about 2%

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[48] Ibid., p. 13.

[49] The ratio of co-operative credit to the cost of agricultural production increased from 24% in the 1950s to 28% in the 1960s. See: M. A. El-Shabaat and S. Z. Nasser, "An Economic Analysis of State Farm Credit in Egypt", L'Egypte Contemporaine, No. 353, July 1973, p. 96.

[50] R. Mabro, The Egyptian Economy, 1952-1972, op. cit., Table 4.5, p. 78.

of the total agricultural credit and generally speaking they went to the landholders and capitalist farmers. This is not surprising since these are the only farmers able to undertake the kind of investment projects mentioned above.[51] Thus co-operative finance has made it possible for these farmers to invest in fixed agricultural investment to a greater extent than would have been possible had they had to rely entirely on their own investible surpluses.[52] Finally, a serious aspect of the process of credit differentiation was that many privileges were enjoyed exclusively by rich farmers by virtue of certain provisions of the agrarian reform laws. For instance, in the system of livestock insurance, only the owner of at least three head of cattle is formally eligible to insure his livestock, and subsequently to obtain a ration of 150 kg fodder at the subsidised price fixed by the State. The poor peasant who cannot insure his livestock is deprived of such privileges; in most cases he has to buy fodder on the black market. Moreover, only owners of more than 15 feddans were eligible to buy selected seeds at subsidised prices.[53]

Nevertheless, in spite of all the shortcomings of the new supervised rural credit scheme, increases in the volume and changes in the terms of rural credit were among the most important complementary measures to land reform.

The improved supply by co-operatives of credit and other inputs were successful in improving the yields of cotton and basic food crops,

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[51] E. Eshag and M. Kamal, "A Note on the Reform of the Rural Credit System in UAR (Egypt)", op. cit., p. 103.

[52] The low rates of interest charged by the co-operative in relation to the borrowing rate of interest in the village market were crucial in this respect. See M. Abdel-Fadil, Development, Income Distribution in Egypt, 1952-1970, Cambridge, 1975, p. 149.

[53] Ibid., p. 149.

TABLE 16

Inidces of Yields for Seven Crops, 1952-70 (base: average 1948-51=100)

Agricultural Years	Cotton	Wheat	Maize	Millet	Barley	Rice	Sugar-cane
1952	102	101	101	107	107	88	125
1953	109	112	105	105	109	98	127
1954	100	125	105	105	122	115	117
1955	83	124	107	108	115	130	130
1956	89	128	103	109	126	139	129
1957	100	126	96	111	128	140	130
1958	107	129	103	114	122	124	133
1959	118	127	92	118	127	132	136
1960	116	133	106	118	132	131	143
1961	76	135	115	121	140	133	132
1962	124	142	125	129	142	154	137
1963	123	145	123	134	141	145	130
1964	141	149	132	133	149	133	130
1965	124	143	167	142	137	132	130
1966	110	145	171	148	129	125	139
1967	121	133	165	150	115	133	137
1968	134	137	167	151	128	135	139
1969	150	130	181	152	125	135	144
1970	141	150	180	156	124	143	133

Source: R. Mabro, The Egyptian Economy 1952-1972, Clarendon Press, Oxford, 1974, Table (4.7), p.81.

as can be seen from Table 16. Considering the period 1952-1970 as a whole, it is clear that improvements have been impressive. In general, yields did not rise in the years corresponding to the first stage of the Land Reform (between 1952 and 1960). Cotton performed badly until 1957 when yields just regained the average level for 1948-1951. Wheat yields, after an early rise, remained stagnant until 1959. The yields of maize (the main ingredient of the peasant diet), did not improve during the 1950s. Rice yields had increased by 40% by 1957, but thereafter tended to decline.

Table 16 shows that increases in yields in the late 1950s and 1960s coincided with the expansion of co-operatives.[54] However, other factors had been at play. The government invested heavily in the development of irrigation and drainage systems, including the High-Dam.[55] It also promoted the use of fertilisers and initiated measures to improve seeds, pest control, research, marketing and agricultural education generally.[56] As a result of all these measures the productivity of land was raised while the area under cultivation was extended.

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[54] R. Mabro, The Egyptian Economy, 1952-1972, op. cit., p. 80.

[55] The area of land reclaimed between 1960/61 and 1964/65 amounted to 536,000 feddans as compared with 78,900 feddans during the period 1952-59. Under the period 1965/66-1969/70, an integrated programme of horizontal agricultural expansion was proposed, proceeding at an annual rate of about 140,000 feddans of reclaimed land. See: Institute of National Planning/International Labour Office, Research Report on Employment Problems in Rural Areas UAR (Report E on Impact of National Development Projects), Cairo 1965, p. 88. However, official statistics claim that the total area actually reclaimed during the period 1960/61-1969/70, amounted to 884,300 feddans. In other words, the actual progress in land reclamation proceeded at a moderate pace of 88,000 feddans per annum, only about half the target figure for this period. See: Central Agency for Public Mobilisation and Statistics, Statistical Handbook, June 1971.

[56] For a detailed account of these government policies see: Egypt, The Permanent Council for the Development of National Production, 1955, Cairo 1955, pp. 24-173, and United Arab Republic of Egypt, Ministry of Agrarian Reform and Land Reclamation, Agrarian Reform and Land Reclamation, 1952-63, Cairo 1963.

The completion of the first phase of the High-Dam project in 1964 led to an increase in the area under cultivation as a result of land reclamation and an extension of irrigation. This would have resulted in a large increase in the total cropped area had not urbanisation encroached upon agricultural lands, consuming about 640,000 feddans in the process. The increase for the 1960s was therefore confined to about 5% (about half a million feddans).

The completion of the first phase of the High Dam project provided sufficient water for irrigation throughout the year and made possible the perennial irrigation of 700,000 acres of land that had previously been under basin irrigation in Upper Egypt, thus enabling more than one crop a year.[57] The horizontal expansion in other areas had also been made feasible pending only the preparation of land to receive the irrigation water when extended thereto.

Thus the availability of additional water supplies from the High Dam made considerable flexibility in "cropping patterns". Before the construction of the Dam many crops were competing for land during the Nili (autumn) season, from August to November, in order to benefit from the flood waters generously available during that season. With the completion of the High Dam the Nili round crops ceased to be all that important. This was matched by important increases in the acreages of summer crops such as rice and summer maize. The area of land cultivated with rice increased to about one million acres, and with summer maize to about 1.5 million acres by the late 1960s. The share of rice production increased by 19.6% compared to the annual average of the

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57 M. Clawson, H. Landsberg and L. T. Alexander, The Agricultural Potential of the Middle-East, American Elsevier Publishing Co. Inc., New York, 1971, p. 131.

1965-1969 period.[58]

These changes in crop mixes are such that they will contribute significantly to the future growth of the Egyptian economy, since rice is a leading export crop and maize is considered to be the main subsistence crop in rural areas. It seems reasonable to argue that changes in the level and composition of agricultural production that occurred in the late 1960s contributed to the solution of Egypt's balance of payments problem.

To sum up, the main changes in acreage and production may be traced to major crops affected by the High-Dam projects. The sharp drop in the acreage and the production of onions[59] emerges as a result of the shift from basin to perennial irrigation in Upper Egypt made possible by the completion of the first stage of the High-Dam.

D. Co-operatives and the Mobilisation of Agricultural Surplus

As stated earlier, the wide network of agricultural co-operatives provided the government with an effective institutional set up through which it was able to carry out its policies. This section analyses the impact of the two most important of these policies, co-operative marketing and pricing on the mobilisation and transfer of the agricultural surplus. The basic objective of these policies was to manipulate the agricultural terms of trade in such a way as to squeeze as much of the agricultural surplus as possible in order to finance the process of accumulation in other sectors of the economy and redress the deficit in the balance of payments. This was achieved through three main types

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[58] See Table 17 and Appendix 1, Table 5.

[59] See Table 18.

Table 17

Cropped Area Developments

(000's feddans)

Year	Winter Crops	Summer Crops			Nili (autumn) Crops	Orchards	Total
		Cotton	Sugar-Cane	Others			
1952	4364	1967	92	967	1824	94	9308
59	4770	1760	112	1533	1969	126	10270
60	4808	1873	111	1549	1898	131	10370
61	4692	1986	112	1429	1616	137	9973
62	4822	1657	121	1925	1695	145	10365
63	4717	1627	133	2140	1588	152	10357
64	4758	1611	134	2171	1536	167	10377
65	4624	1900	129	2668	762	178	10261
66	4739	1859	133	2802	760	195	10488
67	4776	1626	137	3094	622	207	10462
68	4929	1464	155	3326	646	225	10745
69	4849	1622	170	3258	601	232	10732
1970	4835	1627	186	3240	618	244	10750

Source: 1) Central Agency for Public Mobilization and Statistics, Selected Statistics, various issues

2) Appendix 1, Tables 1-4.

TABLE 18

Area in Feddans 000's Production in Metric tons 000's

Crop	Acreage			Production		
	1960	1970	% change	1960	1970	% change
Rice	706	1,143	+62%	1,486	2,604	+82%
Maize	1,821	1,504	-17%	1,691	2,393	+42%
Wheat	1,456	1,304	-11%	1,499	1,516	+12%
Sugarcane	111	186	+67%	4,545	6,930	+52%
Onions	49	34	-31%	504	437	-13%

Source:

Compiled from: Appendix 1, Table 5.

of state purchasing, (i) co-operative marketing, (ii) contracts; and (iii) compulsory deliveries.

Since the year 1952, the co-operatives belonging to the Ministry of Agrarian Reform have come to play an important role in marketing member's cotton crop. The system of co-operative marketing of cotton was first introduced in 1953 in land reform areas, and in 1962 was voluntarily introduced in four governorates. In 1965 the system became compulsory and was extended to cover all governorates producing cotton.

Table 19 indicates the quantities of cotton marketed co-operatively during the period 1952-1970. It shows that by 1965/66 the whole of the cotton crop was marketed co-operatively. Under this system farmers delivered their cotton to collecting centres where it was registered, weighted and graded. The cotton was then transported to the ginning mills where it was processed and pressed into bales before being sent to local spinners, or exported. Farmers were paid the value of their crop (according to the year's price fixed by the government) after deduction of all debts to the co-operative. Similarly, the other main export crops, rice, onions, groundnuts, potatoes, sesame etc. were marketed through co-operative channels. Table 20 shows the importance of these channels during the 1960s.

The contract system of agricultural purchasing was introduced for certain crops, including some that are exported. It covers sugar cane, rice, onions, groundnuts, tomatoes, sesame, green beens as well as others. These contracts are concluded before production decisions are taken and involve peasants, and state trading organisations, co-operatives and nationalised industries. They stipulate the sale of predetermined quantities of certain products of defined standard at certain prices. They are voluntary and their popularity is to be ascribed mainly to the guaranteed prices and other sales conditions that they stipulate. These other sales conditions include supplying farmers with seeds, fertilizers,

TABLE 19

Quantities of Cotton marketed Co-operatively, 1952/53-1969/70

Agricultural Years	Quantities in metric Kantars (1)	As a % of The Total Cotton Production
1952/53	27700	
53/54	84826	
54/55	162700	
55/56	237000	
56/57	311137	
57/58	369208	
58/59	403000	
59/60	454849	
1961/62	699648	
1962/63	1428000	17
63/64	3684000	42
64/65	5561000	60
65/66	9573000	100
66/67	8223000	100
67/68	7696000	100
68/69	7683000	100
1969/70	9387000	100

Notes and Sources: (1) One Kantar (metric) = 50.0 Kilogr.
The period 1952/53-1961/62, From: Bulletin of the General Co-operative and Agricultural Credit Organisation, Quarterly, No. 3, 1964, p. 48 (in Arabic).
The period 1962/63-1969/70. From: National Bank of Egypt, Economic Bulletin, Vol. XXVI, No. 2, Cairo, 1973, p. 138.

Table 20

Cooperative Marketing of Some Selected Export Crops

1964/65-1969/70

Agricultural Years	Rice		Onions		Groundnuts		Potatoes		Sesame		Flax straw	
	Quantities marketed (000 dariba) (1)	% of Total output	Qunatities marketed (000 Tons)	% of Total output	Quantities marketed (000 Tons)	% of Total output	Qunatities marketed (000 Tons)	% of Total output	Quantities marketed (000 tons)	% of Total output	Quantities marketed (000 Tons)	% of Total output
1964/65	-	-	241	36	13	26	39	9	5	23	5.5	10
65/66	901	50	213	31	11	25	70	18	5	31	34.0	63
66/67	1090	52	188	29	20	55	54	18	8	80	45.0	86
67/68	1226	48	170	33	20	59	n.a.	n.a.	6	70	41.0	60
68/69	1277	47	231	46	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1969/70	1343	49	141	28	24	60	n.a.	n.a.	15	80	n.a.	n.a.

Note and Source: (1) One dariba of rice (in husk) = 945 Kg.
Central Agency for Public Mobilization and Statistics, The Annual Bulletin of the Cooperative Activities in the Agriculture Sector, various issues. The percentages computed From: Central Agency for Public Mobilization and Statistics, Statistical Handbook, June , 1971, pp.33-35 (on a 2 year moving-average basis).

pesticides, credit facilities and other services.[60] But in spite of the well-known advantages of the contract system of agricultural purchasing, and the reliance placed upon it in both socialist and capitalist countries, it is only slowly expanding in Egyptian agriculture. One of the key problems encountered is the multiplicity of Egyptian organisations concerned with contracts for farm produce. This not only presents serious organisational difficulties but also causes trade expenses to be high.

The third form of state purchasing of agricultural products is compulsory delivery. This system was introduced for wheat in the early 1950s whereby the farmers had to deliver to the state a part of their wheat crop at "administered prices". This was achieved through the introduction of "allocated quotas". In the mid 1960s this system was extended to cover part of the output of rice and onions. This system of obligatory deliveries had been introduced mainly to achieve two goals:[61]

(i) to ensure that the growing urban population had sufficient supplies of agricultural products, particularly wheat at stable prices;

(ii) to increase the exports of rice and onion crops which, together with cotton, were main export crops.

The "allocated quotas" of different crops to be delivered to the State, and their prices, are fixed each year by the State. As Table 21 shows the prices for obligatory deliveries were lower than those for non-obligatory deliveries. Such a difference in prices can be considered as a tax on agriculture. Where farmers fail to deliver the "obligatory quotas" to the State in time they become liable to fines of £E51 for each

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60 Nassar Saad, "Structural Changes in Agriculture of the UAR (Egypt), L'Egypte Contemporaine, No. 337, Cairo, July 1969, p. 123.

61 Ibid., pp. 124-125.

Table 21

Obligatory deliveries of different Crops for the period 1965-70, and its Prices as Compared with Free Market Prices (Prices effective during 1967-1968)

Crop	Obligatory deliveries			Prices for obligatory deliveries and non-obligatory purchases		
	Minimum Compulsory deliveries per Feddan in absolute Number (1)	Average Yields per feddan for the period 1965-1970	Obligatory deliveries in % of average Yields per feddan	Average Prices for Compulsory Purchases in £E (2)	Average Prices for non-obligatory Purchases(£E)	Price Ratios %
Wheat (ardab)	2	7.5	26.7%	4(3)	5	125
Rice (daribas)	1.5	2.5	66.0%	20(4)	40	200
Onions (tons)	4	7.0	57.0%	11	16.5	150

Notes and Source: (1) This figures represent only an "average quotas". In practice, it differs from one district to another according to the quality and fertility of the soil.
(2) Purchase prices listed in that column are average prices. In practice, these prices for the same crop differ according to the quality of produce and the date of delivery.
(3) The average purchase price for the Hindi wheat raised to £E50 in 1969/70.
(4) Purchase prices for rice vary widely according to the quality. Effective purchase prices fixed by State ranged from £E20 up to £E28.5 per dariba.

R. Abdel-Rassoul, Prices and Income Policies in Egyptian Agriculture, in: Institute of National Planning, Memo. 168, Cairo, 1971 (in Arabic); And A.M. Salem, The Agricultural Cooperative Marketing, in the light of local practices, Dar-el-Maaref, Cairo, 1968, pp.96-97 (in Arabic).

non-delivered ton of rice, and £E12 for each non-delivered ton of onions.[62] Such severe fines are clearly intended to prevent farmers from distributing their output according to normal market criteria.

It is also worth noting that the use of price differentials as a means of appropriating the agricultural surplus was not limited to the requisitioned crops, but also extended to other crops marketed through co-operatives, especially cotton. As Table 22 shows, during the period 1960-1970 the difference between producers' prices and f.o.b. export prices for cotton amounted to some 70%-80%. Moreover, the differential between producers' prices and the selling prices of cotton to domestic mills ranged between 115% and 125% during the same period.[63] Similarly, during the period 1965/66-1969/70 the differential between the government buying price and the export price of rice ranged between 161% and 186%.[64]

In addition to using price differentials, the government sought to influence the agricultural terms of trade through the manipulation of the prices of inputs. For instance, a ton of chemical fertilisers was sold to farmers at £E25, when the import price was only £E15-16 during the 1960s.[65]

It appears therefore that the government, through the system of co-operative marketing and pricing, was able to regulate the domestic terms of trade by purchasing agricultural products at one set of prices

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62 A. M. Salem, The Agricultural Co-operative Marketing (in the light of local practices), Cairo 1968, pp. 97 and 113.

63 M. Abdel-Fadil, "Development, Income Distribution and Social Change in Rural Egypt", op. cit., pp. 94-95.

64 Price Planning Agency, Report on Rice, Memo No. 13, Cairo, August 1972, Tables 43 and 81.

65 R. Mabro, The Egyptian Economy, 1952-1972, op. cit., pp. 78-79.

Table 22

Development of Producer and Export Prices and Government Profit Margins For The Cotton Crop, 1960-1970

Years	Producer's Price (£E per metric Kantar) (1)	Average Export Price (£E per metric Kantar) (2)	(1) — (2) (3)	Government's Profit Margin (£E per Kantar) (4)	Quantities Exported (000 metric Kantar) (5)	Total Government Revenue (£E million) (6)
1960	15.0	18.0	83%	3.0	8497	25.5
61	14.6	18.1	81%	3.5	6740	23.6
62	14.8	16.7	89%	1.9	5010	9.5
63	15.2	18.8	81%	3.6	6447	23.2
64	16.8	19.2	87%	2.4	5835	14.0
65	16.1	22.3	72%	6.2	6843	42.4
66	16.0	20.8	77%	4.8	6848	32.9
67	17.0	20.2	84%	3.2	6043	19.3
68	17.5	21.8	80%	4.3	5194	22.3
69	18.0	25.3	71%	7.3	4760	34.7
1970	18.2	26.0	70%	7.8	6438	50.2
Average						27.0

Source: Computed from: Central Agency for Price Planning, Report on Cotton, Memo. No.11, Cairo, May 1972, Tables 17, 24 and 28.

and selling them at higher prices (consumer's retail or export prices). We have attempted to measure the effects of such policies on the movement in the terms of trade for the agricultural sector during the 1960s.

The first question that arises here is which types of agricultural products should be included in the index of the terms of trade? Generally one can distinguish between three main types of farm produce: (i) field crops; (ii) fruits and vegetables; and (iii) animal products.

In Egyptian agriculture, field products (mainly cotton and cereals) rank first among both plant and total agricultural production.[66] Thus the crops included in the index of the terms of trade are cotton, rice, wheat, maize, onions, and sugarcane. Taken together they represent the most important commodities sold by farmers.[67] Moreover, fruits and vegetables are also included.

The second question involves the choice of prices and weights to be used for computing the indices of agricultural terms of trade.[68]

Three sets of indices are calculated for all farmers:

(a) An overall index of the terms of trade between agricultural output and all manufactured goods;

(b) An index of the terms of trade between agricultural outputs and manufactured consumer's goods; and

(c) An index of the terms of trade between agricultural outputs and manufactured inputs.

The conventional method of estimating a single index of the terms of

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66 See Central Bank of Egypt, Economic Review, Vol. XIII, No. 2, 1973, p. 138.

67 This index leaves out some minor crops which can be safely neglected, since their data are not avilable for the whole period in question and their impact on the farm income is not all that great.

68 See Appendix 2.

trade for the agricultural sector as a whole can be useful in studying the "urban bias" in government policies, but it is of little or no use in analysing the distributional effects of such policies within the rural economy itself. For various reasons, all farmers do not confront the same set of prices for their products and purchases. First, there are significant differences in the pattern of consumption of the different groups of the peasantry. Food represents a very high proportion in poor farmers consumption while the pattern of consumption of rich farmers includes more manufactured goods, the prices of which may be heavily subsidised. Secondly, there are differences in the crop mixes of the small and rich farmers. Small farmers usually grow traditional crops while the rich are able to diversify their products by growing fruits, vegetables and breeding livestock. As a matter of fact, these latter products were never subject to the co-operative marketing regulations and their prices increased much faster than the prices of cash and food crops.

For these reasons two sets of terms of trade indices, one for "poor farmers" and the other for "rich farmers", are calculated to reflect the changes in relative prices of the commodities produced and consumed by either group. The results are shown in Table 23.

Considering the period 1960-1970 as a whole, Table 23 shows that the overall agricultural terms of trade for all farmers (index $1/I_L$) have remained more or less constant. But a closer look at this index shows that the terms of trade in fact deteriorated following the cotton crisis of 1961, began to recover in 1965, and then remained constant until the end of 1970. This constancy reflects the impact of two opposing movements, an improvement in the prices of agricultural products vis-à-vis prices of manufactured goods used as inputs to agriculture (index 1/Im), and a deterioration in agricultural prices vis-à-vis the prices of consumer's goods consumed by the rural population (index $1/I_c$).

Table 23

Indices of Terms of Trade for the Agricultural Sector

(1960=100)

Year	1. All Farmers			2. Poor Farmers			3. Rich Farmers		
	I_L	I_C	I_M	I_L	I_C	I_M	I_L	I_C	I_M
1960	100	100	100	100	100	100	100	100	100
61	99	99	100	99	99	101	100	100	101
62	88	96	68	88	96	68	90	99	70
63	86	94	71	87	94	70	90	97	73
64	94	100	78	94	100	78	100	107	83
65	85	88	79	86	88	79	92	95	86
66	93	94	90	93	94	89	105	106	101
67	99	96	112	99	95	115	109	107	121
68	97	93	116	98	92	120	106	102	124
69	99	95	118	100	94	123	108	104	126
1970	98	98	101	99	98	104	111	111	111

Notes:

I_L = Over-all index of terms of trade between agricultural output and all manufactured commodities.

I_C = Index of terms of trade between agricultural output and manufactured consumer's goods.

I_M = Index of terms of trade between agricultural output and manufactured inputs.

Source: See Appendix 2.

In general, farmers have gained from the government policy to stabilise the prices of manufactured inputs to agriculture, especially fertilisers,[69] but this gain was wiped out by the rapid increase in the prices of commodities entering into the consumption basket of the rural population, especially foodstuffs and textiles. Considering the period 1960-1970 as a whole, we conclude that there were no improvements in the relative prices of agricultural output vis-à-vis agricultural inputs and consumer goods.

Finally, as Table 23 shows, while the terms of trade for "poor farmers" have remained fairly stable rich farmers have benefited from relative price movements.

To sum up, the system of co-operative marketing and pricing resulted in an improvement on the pre-reform methods under which intermediaries appropriated substantial amounts of the agricultural surplus for themselves. The government was successful in using the

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69 The prices of fertilisers are controlled at each stage of the distribution chain. At the producer level prices are determined on a cost-plus basis. The cost figures are worked out by the producer to cover costs of production and transport to the Agricultural and Co-operative Credit Organisation designated depots. Then, these figures are checked by a cost accountant and a technician from the Ministry of Industry. The margin added to these costs is determined by the Ministry of Industry.

At the wholesale level prices are determined on a cost-plus basis. At this level, cost includes the producer's delivered price, transport and storage costs and the costs of financing credit sales. The margin added to these costs is determined by the Ministry of Agriculture.

At the retail level, prices are also determined on a cost-plus basis, and a reasonable mark-up which covers co-operatives' expenses for storing and marketing is fixed by the Ministry of Agriculture. Thus, prices are uniformly fixed throughout the country.

It is also worth noting that fertiliser prices are sometimes subsidised through the "Fertiliser Prices Stabilisation Office". See: Abu-el-Dahab, M. G. and Hammam, Ezz-el-Dine, Fertiliser Distribution in the Arab Republic of Egypt, E. O. De Guia (ed.), Paris, Organisation for Economic Co-operation and Development, Development Centre, 1972.

new system to mobilise and transfer the agricultural surplus[70] to finance industrial accumulation and redress the balance of payments deficit. Nevertheless, the new marketing and pricing policies seem to have contributed to the aggravation of social differentiation in rural Egypt by favouring the large farmers and discriminating against the poor and small farmers for whom the agrarian reform was promulgated.

2.6. THE POLITICAL DYNAMICS OF AGRARIAN TRANSITION

Following the implementation of land reforms and the consequent erosion in the power of the "landed aristocracy" and the "mercantile rural élite", a group of rich peasants (over 20 feddans) and middle peasants (5-20 feddans) emerged as a new rural élite with dominant political and economic power in the new agrarian system. In contrast to this are the much larger masses of poor peasants and landless labourers who rely mainly on selling their labour power to earn their livelihood.

Given the existing configuration of social forces in rural Egypt, an alliance of interests between the middle and rich peasants seems "natural", or at least highly favourable. Together they control most of the productive assets in the agricultural sector,[71] and tend to submerge their objective differences and make common cause against the interests of the rural poor.

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[70] The net transfer of surplus from agriculture was in the range of 5%-8% of agricultural income during the period 1960-70. This net transfer of surplus from the agricultural sector was calculated as the difference between the sector's contribution to the government budget through direct and indirect taxation and price differentials and investments allocated to agriculture during a given year. See M. Mahmoud Abdel Raouf, Vertical Agricultural Development in Egypt: an Appraisal of the Period 1952/53-1969/70, Institute of National Planning, Memo No. 1029, Cairo 1973.

[71] 62% of the farm area and about 80%-90% of the stock of farm machinery.

Since the 1952 revolution the major change in the village level power structure has been the replacement of one class of notables by another, while small and poor peasants have made very limited progress in assuming political leadership roles. Land reform struck at the power basis of the Royal Family, the landed aristocracy and very large landlords, but not that of the rich peasants.[72]

It has been argued that the Nasser regime's success in controlling the countryside, despite the hostility of the big landlords and the old mercantile rural élite, was attributable to the presence of a class of rich farmers as an alternative élite.[73] However, the structural changes in the economic and political system during 1961-1962 unleashed important conflicts of interest between the regime and the new rural élite, which became much more clearly exposed during the second half of the 1960s.

By the mid-1960s it had become clear that the new rural élite obstructed the effective implementation of the regime's agrarian policies. This led to a change in policy designed to encourage the small peasants to assume a new political role in the countryside and to train to become a new competing élite. This became the guiding principle behind the reforms in the provincial structure of the Arab Socialist Union (the single political party) during 1965-1966.[74]

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72 I. F. Harik, "Mobilisation Policy and Political Change in Rural Egypt", in R. Antoun and I. Harik (eds.), Rural Politics and Social Change in the Middle East, Indiana University Press, 1972, p. 304.

73 Ibid., p. 307.

74 Under the new reforms, the Arab Socialist Union village branch, known as the Committee of Twenty, was by-passed and a new body called the Leadership Group was created to function as the main organ responsible for party activities, with its members selected by the district party secretary in consultation with trusted party militants. The main objective of these changes was to take the political initiative away from the Committee of Twenty, thus neutralising the rich peasants who dominated these committees by placing their peasant clients in office. The chairman of the leadership group and its secretary were, as a rule, selected from amongst the small peasantry in the village. The new party reforms have created well-informed local cadres, who were able to explain the regime's reforms and policies to the rural masses. See ibid., pp. 306-307.

In effect, the 1965 reforms in the structure of the Arab Socialist Union were limited to the changes required for the party to assume a new political role in implementing the official policy line in the countryside and in checking the influence of the old and new rural élites. Ideological indoctrination and political participation were therefore encouraged as catalysts to speed up the implementation of national policy and to enable the rural masses to protect themselves and national goals from the obstructive tactics of the rural élite.

However, the new political structures did not eliminate class conflicts in rural Egypt, but simply subsumed and organised them under a set of patronising constraints. Political competition rivalry and class conflict continued to exist openly among various groups of the peasants. By the end of the 1960s, because of the new compromise between the urban and rural élites with the regime, the balance of power in rural Egypt had shifted once again in favour of the middle and rich peasants.

CONCLUSION

From the foregoing analysis in this chapter one can conclude that the Egyptian policy-makers actively pursued a series of "agrarian reforms" which were prompted by the unequal distribution of land ownership, the disparity of incomes, and unsatisfactory tenancy arrangements that existed before 1952. These "agrarian reforms" released almost a million feddans of land for redistribution and improved the economic and social conditions of 341,982 families. Priority in the distribution of land was given to tenants and permanent wage labourers from the expropriated estates, then to farmers with large families, and finally to the poorest members of the village.

The redistributive effect of the agrarian reform has been limited. The distribution of some 13% of the cultivated area to about 9% of the

rural population had virtually eliminated very large ownerships, slightly improved the lot of small peasants, but consolidated the position of the medium stratum which represented the economic and political power in rural Egypt. Thus the initial inequality in the distribution of land ownership was not changed in any fundamental way. It is more important perhaps to stress the fact that the new agrarian changes did not contribute much to solving the structural problems of the landless peasants since land distribution was mostly limited to previous tenants and small farmers.

Despite the great potential promised by the introduction of land and crop consolidation and the development of the new communal land system, very little was achieved in practice. The two main obstacles were the unequal distribution of land and bureaucratic domination over the experiment. In this respect, Egyptian co-operatives only managed to patch up some of the obvious deficiencies of the existing system of production, mainly through the reorganisation of agricultural rotation. More serious was the negative effect the crop consolidation system had on small and poor peasants. They were obliged to cultivate all their land with a single crop a year and had to depend on the open market for satisfying their needs.

The improved supply of credit and other agricultural inputs produced favourable results as far as land productivity is concerned. But the credit policy favoured large landowners rather than poor and small peasants. Unequal distribution of credit and the accumulation of large arrears enabled large landowners to appropriate the greater part of co-operative finance at cheap prices.

Finally, the co-operatives were successful, through the manipulation of the agricultural terms of trade, to ensure the mobilization and transfer of a sizeable portion of the agricultural surplus to finance the process of industrial accumulation and redress the balance of

payments deficit. But it had negative effects, through marketing and pricing systems, on the process of differentiation among the farmers. While the terms of trade of "rich farmers" improved, they remained unchanged for "poor farmers".

CHAPTER 3

CHANGES IN THE DISTRIBUTION OF AGRICULTURAL INCOME

3.1. INTRODUCTION

In the previous chapter, the major socio-economic changes which have taken place in Egypt's agrarian structure since 1952 were examined. In the present chapter, the main concern is with the impact of these changes in the agrarian system on structural shifts in the distribution of agricultural income between various groups of the peasantry.

The effects of agrarian reforms on the distribution of agricultural income are first considered. This is followed by an analysis of changes in the real wages of agricultural workers. This analysis is carried out in order to find out to what extent has the movement in money wages reflected changes in real wages during the period under study. Finally, changes in the distribution of agricultural income by major socio-economic groups, and by factor shares are analysed.

3.2. THE IMPACT OF THE AGRARIAN REFORMS ON THE DISTRIBUTION OF AGRICULTURAL INCOME

As Chapter 2 shows, the redistribution of wealth in the form of land was the most publicised aspect of the Egyptian land reforms. However, this aspect represented a less significant change than the remarkable "income effect" arising from the rent ceiling.[1]

It is suggested that up until 1960 about 1,100,000 tenant-cultivators benefited from the first land reform law,[2] which implies that the livelihood of about five million of the rural population

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[1] Doreen Warriner, Land Reform and Development in the Middle East, Oxford University Press, London 1957, p. 33.

[2] Hammam Ezz-el-Dine, The Real Impact of the Agrarian Reform on the Distribution of Income between Landowners and Tenants in Egypt, Institute of National Planning, 1964, Memo 492, p. 7.

were affected. Assuming that the average gross farm income per feddan remained the same as in the pre-reform period, the increase in tenants' net income resulting from the enactment of tenancy regulations would have been equivalent to the difference between the pre-reform rent level and the new "statutory"rent". As stated earlier for tenants subject to cash rents the 1952 land reform law fixed the annual rent per feddan at seven times the basic land tax. Since the latter averaged about £E3 per feddan, the annual statutory rent was therefore fixed at about £E21 per feddan, which was about £E10 less than the average level of cash rent that prevailed during the two years immediately preceding the enactment of 1952 agrarian reform.[3]

Although the system of share-cropping before 1952 varied largely from one crop to another, and from region to region, in cotton cultivation it was common practice for the landlord to take all but a small fraction of the cotton crop and half or more of the wheat crop, leaving the maize and clover for the cultivator and his buffalo.[4] In other words, under the system of sharecropping before 1952 reform, the landlord provided seed and fertiliser for the cotton crop and got the labour free. After 1952 the landlords and tenants shared equally in the cost of cultivation and in the produce of the land. The total area affected by these new regulations for share-tenancy amounted to about 75,000 feddans of agricultural land.[5]

Thus, the main impact of the new tenancy regulations was to alter

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[3] B. Hanse and G. Marzouk, Development and Economic Policy in the UAR (Egypt), North-Holland Publishing Co., Amsterdam 1965, p. 90, (Table 4.5).

[4] D. Warriner, Land Reform and Development in the Middle East, op. cit., p. 33.

[5] According to the estimates of Sayed Marei, "The Agrarian Reform in Egypt", CERES-FAO Review, Vol. 2, No. 6, November-December 1969, p. 50.

the relative shares in agricultural income in favour of the tenant-cultivators at the expense of big absentee landlords.

According to the estimates of "Hansen and Marzouk", the absentee owner's share in agricultural output declined to almost half of its pre-reform level, thus allowing for a rise by about one-third in the share going to tenants.[6] However, this exaggerates the change in relative income shows that resulted from the reforms. Recent investigations[7] have shown that rent controls were seldom put into effect. Various methods were used to evade the rent ceiling. A common practice was to get tenant to sign a lease calling for the legal statutory rent, but at the same time compel him to sign separate bills of exchange for the extra amount.[8] Other methods were to overstate the size of area leased to the tenant, to rent land for one crop only and to get the tenant and his family to work on the landlord's estate for no wage whatsoever.[9] Moreover, many tenants were unable to obtain written lease contracts from the landowners and were, therefore, deprived of access to co-operative services, especially easy-term credit. Many landowners made large profits by using these leases to obtain credit and various agricultural inputs at subsidised prices from the co-operative and reselling them to

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6 B. Hansen and G. Marzouk, Development and Economic Policy in the UAR (Egypt), op. cit., p. 94.

7 The "Committee for the Liquidation of Feudalism". This Committee established in 1966 in an attempt to check the abuse of agrarian reform measures by rich landowners. For details see: Al-Taliaa, special issue, September 1966 (in Arabic).

8 G. S. Saab, "The Egyptian Agrarian Reform 1952-1962", op. cit., pp. 145-146.

9 Michael Kamel, "On Class Struggle in the Countryside", Al-Taliaa, September 1966, p. 55.

tenants at black-market prices.[10] The government drive to "liquidate feudalist pockets" in the mid-sixties does not seem to have altered the situation. The strong pressure for land and the domination of land reform institutions by large landowners made it easy to squeeze tenants.

By making use of the available official data on average gross income, average cost of cultivation per feddan and other overhead outlays (land taxes and contributions towards co-operative expenses), it is possible to estimate the change in the average net income of those new beneficiaries of land redistribution who cultivated their land with the aid of family (rather than hired) labour. This group represented about one fifth of the total number of landholders and Eprime Eshag and M. A. Kamal have attempted to estimate changes in net income per feddan for the group for the crop years 1952/53 to 1964/65.[11] Their findings are summarised as in Table 1.

The trend of growing money incomes was uninterrupted throughout the period 1952/53 to 1964/65. Gross money receipts per feddan increased by about 50% during the period, three-tenths (30%) being accounted for by gains in land productivity. The remaining two-tenths (20%) of the increase was accounted for by the recovery in agricultural prices, particularly cotton prices, from their post-Korean War law of 1952/53.

While receipts increased overhead outlays declined as a result of the scaling down of the annual instalments paid for the purchase of land

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10 F. Abdel-Fattah, The Contemporary Village: Between Reform and Revolution, 1952-1970, op. cit., pp. 42-44. This study provided details of irregularities by large landowners which were revealed by the "Committee for the Liquidation of Feudalism" formed by the government in 1966 to counteract the revival of large landowner's influence in the Egyptian countryside.

11 E. Eshag and M. Kamal, "Agrarian Reform in the United Arab Republic (Egypt)", op. cit., pp. 96-98.

TABLE 1

Income Per Feddan of The Beneficiaries of Land Distribution during 1952/53-1964/65

(£E.)

	1952/53	1954/55	1956/57	1958/59	1960/61	1962/63	1964/65
Gross receipts	55	58	66	66	75	76	84
Less: Cost of Cultivation	-10	- 7	- 9	-10	-10	-11	-13
Operating Profit	45	51	57	56	65	65	71
Index (1)	100	113	129	127	142	144	157
Less: Overheads Taxes and Cooperative expenses (2)	-6	-6	-6	-6	-6	-6	-6
Less: Purchase price of land	-12	-12	-12	-12	-8	-4	-1
Net Income per feddan	27	33	39	39	50	55	64
Index (1)	100	122	144	144	185	204	236

Source and Notes: Eprime Eshag and M.Kamal, 'Agrarian Reform in the United Arab Republic(Egypt)', Bulletin of the Oxford Institute of Economics and Statistics, XXX, May 1968, p.97

(1) Computed by the researcher.

(2) Land tax is estimated at £E3, supplementary tax at £E0.3 and contribution towards cooperative expenses at £E3 per feddan; total is rounded to £E6.00 per feddan.

following a series of successive governmental decrees. These decrees reduced the sale price of land to the beneficiaries, extended the indemnity period and lowered interest charges.

Although these calculations are very crude, and the margin of error is quite large, they do give some idea about the magnitude of the changes in net income per feddan for those who benefited from land redistribution.

3.3. THE TREND IN THE DEVELOPMENT OF REAL WAGES

Our discussion of the income effect of agrarian reform in the previous section, was centred around "landed" farmers, i.e. those with access to land either through ownership or rent. As stated in Chapter 2, agrarian reform aimed at improving the standards of living of landless peasants whose main source of income was their labour. Thus, minimum wage legislation fixed a minimum wage rate for an eight-hour day of 18 piasters for men and 10 piasters for women and children compared with 10-15 piasters for adult men and 6-7 piasters for women and children per day.before agrarian reform.

To assess the impact of wage legislation on the standards of living of the rural labour force, it is the changes in real rather than money wages that we examine.

Given the inadequacy of available statistical material and the conceptual and methodological difficulties associated with the notion of a "unique" measure (or index) of real wages more than one tentative measure is derived in the attempt to examine to what extent the movement in money wages has reflected changes in real wages during the period under study.

The first measure is related to the idea that, in a surplus labour economy, the consumption needs of the agricultural labourer may be equated with one basic subsistence good which tends to dominate his diet

over a relatively long period of time. Such a measure will be referred to as the "grain equivalent" of rural wages.[12]

For the rural poor of Egypt cereals (particularly maize) occupy a dominant place in the average diet.[13] Maize is mainly consumed in Lower Egypt and millet in Upper Egypt. Both are preferred to other foodstuffs by the poorer sections of the rural community because they are more filling and cheaper.[14] As a matter of fact other foodstuffs, usually regarded as superior cereals, are not offered to the rural poor on the same favourable price-calorie terms.

The Food and Agriculture Organisation Committee in 1957 estimated three levels of daily calorie requirements according to different degrees of activity. For sedentary workers the daily requirement was estimated to be 2,800 calories; for work involving a moderate degree of activity the requirement was 3,200 calories while for heavy work it was 4,400 calories per day.[15] Here we assume that an agricultural labourer requires a minimum of 3,000 calories per day to provide for a satisfactory subsistence diet that allows for an average of eight hours work a day.[16] This would require an annual rate of maize consumption of

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12 See: C. Clark and M. Haswell, The Economics of Subsistence Agriculture, 4th ed., Macmillan, London 1970, Chapter 4.

13 Eighty per cent of the peasants' calories come from maize bread, of which he eats up to three pounds a day. See: Peter Mansfield, Nasser's Egypt, 2nd ed., London 1969, pp. 202-204.

14 G. Amin, Food Supply and Economic Development with Special Reference to Egypt, Frank Cass and Co. Ltd., London 1966, p. 54.

15 Food and Agriculture Organisation, "Calorie Requirements. Report of the Second Committee on Calorie Requirements", Nutritional Studies, No. 15, 1957. The Committee considered that the figures of 2,800 and 4,400 probably represent extreme limits. However, these estimates are questioned. See: Loenard Joe, "Food and Nutrition Planning", Journal of Agriculture Economics, XXIV, 1973.

16 One kg of maize will give about 3,600 calories. This means that a labourer needs to consume up to 833g of maize per day in order to get 3,000 calories.

304 kg. Table 2 compares the money cost of such a diet, given the prices of maize that actually prevailed, with the movement of daily money wages.

Despite the fact that a legal minimum rural wage of 18 piasters had existed for men since 1952, the average level of daily money wages remained at about 11 piasters per day throughout the period 1952-1960. To avoid the minimum wage regulations employers - the state included - used to fix unusually long half-days, thus securing more than half a day's work for only half a day's pay.[17] As late as 1961, the average daily wage for men was reported to be still around 12 piasters.[18] Only in the mid 1960s did the average wage for men approach the level of the statutory minimum set in 1952. The increase in money wage rates for rural labourers was of the order of 40%-50% during the period 1960-1965.[19] This reflected the strong inflationary tendencies that developed in the Egyptian economy around the mid-sixties, and the tightness of the labour market in rural areas as a result of the increased demand for wage-labour. This increased demand for labour was generated by the construction of the High Dam and the new land reclamation schemes.[20]

However, as column (F) in Table 2 shows the money wage index declined from 1951 to 1956, the years of uncertainty following the 1952 Revolution and period during which it was difficult to enforce minimum wage legislation. There was then gradually increase between 1955 and 1971, the years of "Socialist transformation", the second agrarian

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17 H. H. Ayrout, The Egyptian Peasant, op. cit., p. 27.

18 Institute of National Planning, Wages, Incomes and Consumption in Rural Areas, Report D, Cairo 1968, p. 10.

19 Ibid., p. 11.

20 See Appendix 3.

TABLE 2

The "Grain Equivalent" of Rural Wages, 1950-1971

Year	Price of Maize (Piastres) (1)		Money Cost (Piastres) of 3000 Calories' Worth of Maize (C)	Index (D)	Daily Money-Wages (Piastres) (E)	(E)/(D) (F)
	Per Ardeb (2) (A)	Per Kg. (B)				
1951	245	1.75	1.45	100	11.0	11
1952	270	1.93	1.60	110	11.0	10
1953	270	1.93	1.60	110	11.0	10
1954	264	1.89	1.57	108	11.0	10.2
1955	378	2.70	2.24	154	11.0	7.1
1956	419	2.99	2.48	171	11.0	6.4
1957	350	2.50	2.07	143	11.0	7.7
1958	350	2.50	2.07	143	11.0	7.7
1959	350	2.50	2.07	143	12.0	8.4
1960	350	2.50	2.07	143	12.5	8.7
1961	350	2.50	2.07	143	12.6	8.8
1962	360	2.57	2.14	148	n.a.	-
1964	490	3.50	2.90	200	18.0	9.0
1965	420	3.00	2.50	172	18.6	10.8
1971	360	4.00	3.32	229	25.0	10.9

Notes and Sources:

(1) One Egyptian Pound (£E)= 100 piastres = 1,000 milliemes
(2) One Ardeb of maize = 140 Kgs.

Column(A)&(B): prices for maize are in most cases wholesale prices. See: National Bank of Egypt, Economic Bulletin, XI, No.4, 1958, and XVI, No.1-2, 1963. For the years 1964-1971, See: Central Agency for Price Planning, Memo 12, Cairo, 1973.

Column(C): Obtained by multiplying figures in Col.(B) by the standard conversion factor 0.833.

Column(E): For the years 1951-1959, See: D.Mead, Growth and Structural Change in the Egyptian Economy, p.313. For the years 1960-71, See: Institute of National Planning, Agricultural Price & Income Policies, Memo. 168, Cairo June 1971, p.25.

reform and the government drive against the "remaining pockets of feudalism". But taking the period as a whole, $\frac{(E)}{(D)}$ is at a similar level in 1971 to what it was in 1951. It is therefore our conclusion that, with the exception of a brief period in the late 1960s, the standard of living of agricultural labourers (essentially landless peasants and very small farmers) has more or less remained unchanged during the period in question.

A second approach to the problem is to make use of all the available information that throws some light on the movement in rural real wages. Table 3 combines the following indices: the "average daily money-wages"; the "grain equivalent" index discussed above; the official wholesale price index for cereals; and the "special cost of living" index [21] for agricultural labourers published by the Institute of National Planning.

As Table 3 shows there was a marked fall in rural real wages during the period 1952-62. Furthermore, the food grain indices used as wage-deflators indicate a much great fall in real wages during 1962-1962.

One final word, it is worth noting that the indices showed in Table 3 were constructed with reference to official prices rather than actual prices. Thus they tend to understate the rise in the cost of living for rural labourers over the period under study to the extent that actual prices increased faster than official prices.

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21 A special cost of living index for rural labourers, based on a representative bundle of ten commodities consumed by people in the lowest expenditure group (i.e. less than £E25 per annum), was calculated at the Institute of National Planning in Cairo up to 1961. The weights used in constructing the index were derived from the 1958/59 family budget surveys, but the index on the whole remains heavily weighted in terms of food grains, as the weight of maize in this index amounts to 45%. See: F. Zaghloul, A Cost of Living Index for Rural Labourers, 1913-1961, Institute of National Planning, Cairo, April 1965, Memo No. 557, pp. 3-7.

TABLE 3

Movement in Rural Real Wages, 1950-1971

Year	Index of Average Daily Money-Wages for men (1950=100) (1)	Index of Money Cost of the "Grain Equivalent" of Rural Wages in Terms of Maize (1950=100) (2)	Official Wholesale Price Index for Cereals (1950=100) (3)	Special Cost-of-living Index for Agricultural Labourers (1950=100) (4)
1950	100	100	100	100
1951	100	100	106	100
1952	100	110	102	100.5
1953	100	110	112	101.7
1954	100	108	118	104.3
1955	100	154	125	112
1956	100	171	136	129.7
1957	100	143	134	128.6
1958	100	143	127	131.5
1959	109	143	128	126
1960	115	143	128	128
1961	115	143	134	136
1962	115	148	133	139.3
1963	164	148	131	144
1964	164	200	137	167.5
1965	169	172	149	198.1
1971	226	229	190	214.6

Sources:

Column (1): based on figures on daily money-wage rate for agricultural labourers given in D.Mead, Growth and Structural Change in the Egyptian Economy, pp.92-95; and in International Labour Office, Report on Rural Employment Problems, pp.68-69.

Column (2): abstracted from Table 2, Column D.

Column (3): derived from data in D.Mead, Statistical Appendix, Table VI-F-1, and Central Agency for Public Mobilization and Statistics, Statistical Yearbook, October 1974.

Column (4): derived from data in F.Zaghloul, A Cost-of living Index for Rural Labourers, p.5; And for the Period 1962-1971, the Official index number of retail prices for foodstuffs, including fuel and soap, are used as the closest substitute for the Special Cost of living index.

3.4. DISTRIBUTION OF AGRICULTURAL INCOME BY FACTOR SHARES AND SOCIO-ECONOMIC GROUPS

The study of distribution of agricultural income by factor shares has been preferred by neo-classical economists. Distributive shares within a neo-classical analytical framework are determined by the marginal products of factors engaged in agriculture.[22] The acceptance of such a marginal productivity approach to income distribution is usually supplanted by the use of production functions. The one production function generally used in this type of analysis has been the Cobb-Douglas production function.[23]

Table 4 shows the changes which occurred in the functional distribution of agricultural income in Egypt over the period 1952-1970. There was a marked fall in the share of property returns[24] over the period covered (the fall being of the order of 15%-16%). About half of this can be ascribed to the decline in the share of cash rents in total agricultural income that resulted from rent controls. The same table shows that there has been a rise in labour's share during the same period. Although these developments consist with our previous analysis regarding the behaviour of land rents and rural wages over time, these trends should be interpreted cautiously. As a matter of fact, we have reasons to believe that they tend to exaggerate the share of labour and understate that of property income. The data on agricultural wages, as

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[22] For more details, see Chapter 1, Sections 1.5.B. and 1.5.C.

[23] See: B. Hansen, "Marginal Productivity Wage Theory and Subsistence Wage Theory in Egyptian Agriculture", Journal of Development Studies, II, July 1966, pp. 368-407; and C. Clark and M. Haswell, The Economics of Subsistence Agriculture, op. cit., Chapter 10.

[24] Property incomes (including rent payments) and wages represent the two major income sources of households, as they flow directly from the production process in agriculture.

TABLE 4

Development of Distributive Shares in Egypt, 1952–1970 (at Current Prices)

Financial Years (ending 30 June)	Agricultural Income[1] (£E million)	Wages (£E million)	Share in Total Income %	Total Property Returns[2] (£E million)	Share in Total Income %	Cash Rents (£E million)	Share in Total Income %
1951/52	352	60	17	292	83	58	16
1959/60	405	98	24	307	76	n.a.[3]	-
1960/61	403	99	25	304	75	47	12
1961/62	373	117	31	256	69	48	13
1962/63	425	126	30	299	70	48	11
1963/64	475	139	29	336	71	47	10
1964/65	528	166	32	361	68	46	9
1965/66	608	197	32	411	68	46	8
1966/67	612	205	33	407	67	47	8
1967/68	644	201	31	443	69	48	7.5
1968/69	688	211	31	477	69	49	7
1969/70	772	218	28	554	72	n.a.[3]	-

Notes and Sources:

(1) Net Value added (at Current Prices)
(2) Inclusive of rent payments.
(3) Not available.

The Period 1951/52 From: Hassan Abdallah, U.A.R.Agriculture, Cairo,1965, p.93 (in Arabic).
The Period 1959/60–1964–65 From: Ministry of Planning, Follow-up and Evaluation Report on the First-Five Year Plan, Part 1, Cairo, Feb.1966 (in Arabic)
The Period 1965/66–1969/70 From: Price Planning Agency, Distribution of Personal Incomes, Memo No.18, Cairo, January 1973, (in Arabic).
Rent Payments, From: Ministry of Agriculture, Agricultural Economics Bulletin, Various Issues.

reported in official statistics, represent "imputed" average annual wages for the whole labour force employed in agriculture (including unpaid family labour and landholders working on their own account), rather than wages paid in cash or kind to wage labourers. On the other hand, the share of property returns is based on estimates of income using official land rents and prices of agricultural products. Since rent controls introduced by the agrarian reform often were not enforced and existence of an active black market in agricultural products, this implies that there is no guarantee that official land rents were actually received by landowners, and that official prices were usually surpassed.

But quite apart from the particular analytical and empirical difficulties associated with the construction of an "aggregate production function" for agriculture - such that the above explained approach appears to be an excessive abstraction from reality, and is of limited use for the analysis of the interdependence between distribution of income, social change and economic growth. There are several reasons for this. First, it has not proved possible to isolate "factor incomes" except by making heroic simplifying assumptions. This is because it is often not possible to isolate factor shares for the large section of the peasantry who cultivate their own land where all factor incomes actually merge.[25] Secondly, even if the different types of income could

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[25] Professor B. Hansen has attempted to estimate distributive shares in Egyptian agriculture within a neo-classical analytical framework. According to his analysis, some awkward problems of a definitional and statistical nature raises: the absolute size of the wages' share in agricultural income was obtained by imputing average daily wages for labourers and by assuming that each person is working full time, an arbitrary assumption which introduces a systematic element of overestimation in the share of wages. Similarly, the share of rents was obtained as the ratio between the rental value of all cultivated land, and, total agricultural income. A residual share emerges, which can be attributed to the presence of some overlapping between rental values and wages on the one hand, and between rental values and usury interests on the other hand. See B. Hansen, Distributive Shares in Egyptian Agriculture, 1897-1961", The International Economic Review, Vol. 9, No. 2, June 1968, p. 192.

be isolated, they no longer correspond to distinct socio-economic groups.

Thus the need to define homogeneous socio-economic groups, with broadly similar types of incomes and broadly similar consumption and savings behaviour, is central to the analysis of the relation between distribution and the socio-economic changes in the economy.[26] It is important to focus on the process of distribution of income between broad social classes in order to be able to explain the dynamic behaviour of the economy and society at large.

To obtain reliable figures on the distribution of income in the agricultural sector between broad social classes is a difficult task. Not only are the concepts and classifications used in the official sources highly ambiguous, but also the statistics in this respect are scanty.

However, a number of writers have attempted to piece together whatever data were available in order to provide a picture of the change in the income distribution matrix.

According to Samir Amin,[27] the rural society in Egypt for 1958 was divided between: "landless peasants" who represented 73% of the rural

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[26] The recent trend in the literature on income distribution is towards a classification which will combine information on the source of income with a classification by socio-economic groups which share common patterns of behaviour. For more details see: Chapter 1, Section 1.5.A; also see: J. Marchal and B. Ducros (eds.), The Distribution of National Income, Proceedings of the Conference of the International Economic Association, London, 1968; Nancy Baster, Distribution of Income and Economic Growth: Concepts and Issues, op. cit.; and Charles Elliot, "Income Distribution and Social Stratification: Some Notes on Theory and Practice", Journal of Development Studies, Vol. 8, No. 3, April 1972, pp. 37-55.

[27] Samir Amin, L'Egypte Nassérienne, Paris, 1964, Chapter 1.

population and obtained only 15% of agricultural income; "poor peasants" (owing less than one feddan) accounting for 6% of the population and getting 2% of the income; "middle peasantry" (one to five feddans) who made up 15% of the population and received 23% of the income; "rich farmers" (five to 20 feddans) who represented 5% of the population but received 23% of the income; and finally "rural capitalists" (above 20 feddans) whose number amounted only to 1% of the population, but appropriated 36% of the income.[28]

A number of remarks can be drawn from this study. First, the rural population was estimated to be 19 million in 1959 whereas it is known that the rural population was only 16 million. This will affect the estimates of the number of landless. Moreover, the land distribution used in this study related to 1950 but not to 1958 as was stated. Finally, the stratification of landowners is far removed from Egyptian reality, For instance, one can hardly consider owners of from one to five feddans as "middle peasantry" as their income puts them nearer to "poor peasants".

Another attempt, by Donald Mead, provides us with estimates of the distribution of agricultural income for the years 1950 and 1960. The findings of this analysis are summarized in Table 5.

A number of inferences on the distributional shifts within the agricultural sector over the period 1950 and 1960 can be drawn from Table 5. The introduction of "rent control" and fixing a "maximum ceiling" on ownership after 1952 (the First Agrarian Reform) have had a downward effect on the share of income received by the "large landowners". The income received by the poorest groups of the rural population

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[28] Ibid., pp. 10-11.

(i.e landless wage earners and very small landowners) remained virtually unchanged. The biggest shift in the distribution of agricultural income was in favour of the size class 2-50 (i.e. the middle class of farmers as the study stated), whose share of total agricultural income increased by some 35%. Although the number of the "middle class" of farmers increased, their gain was so much as to raise per capita income over the period 1950-1960. Finally, the study comes to the conclusion that

> "while structural change and income distribution have helped to alleviate the pressure of population growth on rural incomes, they have not solved the problem of rural poverty, and probably cannot solve it".[29]

A few remarks concerning the data in Table 5 are in order. First, the 1960 was the year to which the study goes only to and this tended to neglect the effect of the Second Agrarian Reform of 1961. Secondly, the classification of the group of landowners of 2-50 feddans as "middle class" blurs basic differences between those who own less than five feddans, and can only be regarded as small peasants, and those who own 20-50 feddans and can be regarded as rich peasants.

Robert Mabro also has attempted to provide estimates of the distribution of agricultural income for the years 1950 and 1965. The findings of this study are summarised in Table 6.

A number of important inferences on the distributional changes within the agricultural sector during the period 1950 and 1965 can be drawn from Table 6. The introduction of the Land Reform Laws of 1952 and 1961 of fixing a minimum ceiling on ownership have had a downward effect on the share of income received by the "large landowner" who

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[29] D. Mead, "Growth and Structural Change in the Egyptian Economy", op. cit., pp. 79-80.

TABLE 5

Distribution of Agricultural Income in 1950 and 1960

	1950		1960	
	£E Million	Share in Total %	£E Million	Share in Total %
Wages for landless	20.0	5.4	20.0	5.0
Rental Payments	48.3	13.2	31.7	7.0
Other Income by Size of Holding:				
Below 2 Feddans	24.1	6.5	28.7	7.0
2-5 Feddans	160.7	43.7	218.1	52.0
Over 50 Feddans	114.9	31.2	123.5	29.0
Total Gross Value-Added	368.0	100.0	422.0	100.0

Source: D.Mead, Growth and Structural Change in the Egyptian Economy, Illinois, 1967, p.78.

TABLE 6

Percentage Shares in Agricultural Income
1950 and 1965

Groups of Peasantry	% shares in agricultural income	
	1950	1965
Landless Families	9.0	8.0
Holders of less than 5 Feddans	17.5	34.0
Holders of 5-100 Feddans	48.5	54.0
Holders of over 100 Feddans	25.0	4.0
Total	100.0	100.0

Source:
R.Mabro, The Egyptian Economy, 1952-72, Oxford: Clarendon Press, 1974, pp.218-221.

suffered a substantial loss as a result of the virtual disappearance of the "over 100 feddans" bracket from the structure of ownership. The biggest shift in the distribution of agricultural income was in favour of the size class "less than five feddans" (as they include all the new owners who benefited from land redistribution), whose share of income rose from 17.5% to 34.0%. There was also unchanged, if not deteriorating in the share of income received by the landless peasants.

Finally, a tentative analysis of income distribution by socio and economic groups has been undertaken recently.[30] The findings of this analysis are summarised in Table 7.

This study used data on landholdings from the 1950 agricultural census together with estimates of national income from agriculture for the years 1945-1947 and a rough estimate of the average money rent per feddan before 1952 in order to obtain a breakdown of income in the agricultural sector by the major socio-economic groups for 1950. A similar breakdown for 1961 was obtained by using the 1961 census.

A number of important inferences on the distributional shifts within the agricultural sector over the decade of the 1950s can be drawn from Table 7. The introduction of "rent control" after 1952 has had a remarkable downward effect on average money rent per feddan, and in most cases average rents per feddan declined by some 25% to 30%. This meant a fall in the absentee landlords' income and an increase in the incomes of tenant-cultivators. The biggest shift in the distribution of agricultural income was in favour of the size class 5-<50 feddans (i.e. the middle and rich peasantry), whose share of total agricultural

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[30] M. Abdel-Fadil, "Development, Income Distribution and Social Change in Rural Egypt, 1952-1972," op. cit., pp. 58-59.

TABLE 7

Distribution of Agricultural Income by Socio-Economic Groups in Egypt, 1950-1961

Major Socio-economic recipient groups.	1950 £E million (1)	Share in Total Income (2)	Number of Families (000's) (3)	% of Total Farm population. (4)	Average Income per head of Family (£E) (5)	2/4 (6)	1961 £E million (1)	Share in Total Income (2)	No Families (000's) (3)	% of Total Farm population (4)	Average Income per head of family (£E) money	Average Income per head of family (£E) real	2/4 (6)
1. Wages paid to agricultural labourers (income of landless peasants)	20	5.4	1217	55	16.4	0.09	39	9.6	970	37	40	30	0.26
2. Income of land-holders by size of holdings	55	15.0	787	35	70	0.43	113	28.0	1381	53	82	81	0.53
<5 feddans													
5-<50 feddans	92	25.0	201	9	458	2.77	130	32.4	251	9	518	513	3.55
≥50 feddans	144	39.0	15	1	9600	39.00	69	17.0	10	1	6900	6832	17.0
3. Rental payments for absentee landownership	58	15.6					52	13.0					
Net value added in agriculture (at current prices)	369	100.0	2220	100	166	1.00	403	100.0	2612	100	154	152	1.0

Notes and Sources

1950

(1) All labourers are assumed to work 150 days per year. See: D. Mead, Growth & Structural Change in the Egyptian Economy, Homewood, Illinois, U.S.A. 1967, p.78

(2) Incomes of different groups of landholders are based on estimates of average gross value added per feddan for different size farms. See: Mead, op.cit., p.67 and multiplied by the acreage in each size class as reported in the 1950 agricultural census.

(3) Average rental is estimated at £E 30 per feddan. See: B. Hansen and G. Marzouk, Development & Economic Policy in U.A.R. (Egypt), North-holland Publishing Co., Amsterdam, 1965, p.83. Rental payments refer to rent actually paid (in cash or kind) excluding imputed rest of owner-occupied land.

(4) In order to be able to draw more meaningful explanation for changes in the distribution of agriculture income by socio-economic groups between 1950 and 1961, it is useful to compute the percentage share in income divided by the Percentage Share in population (for each income recipient group)

1961

(1) The wage share is derived from census data on the number & age-sex composition of paid labourers, combined with a rough estimate of the average number of days worked per year for each group, and a knowledge of wage differentials by sex and age.

(2) Incomes of different groups of landholders were obtained by assuming the following uniform income levels: income of an owned feddans, net of land tax £E 62; income of a rented feddan, net of land tax £E 44. Wages paid to hired labour were netted out from the incomes of landholders as the wage bill for both casual and permanent labourers were divided up between holdings of different sizes in proportion to their respective shares of both types of hired labour as recorded in the 1961 Census. Appropriate deflators were then applied to figures on average money income by family.

(3) Average rental is estimated at £E 21 per feddan. The share of rent payments in total income in 1961 did not fall dramatically despite the enforcement of rent control. This was mainly because of the high degree of absentee landownership among the very small landowners.

income rose from 25% to 32.4%. There was also a substantial increase in the income received by the poorest groups of the rural population (i.e. wage labourers and those cultivating tiny pieces of land or small farms) with their share of total agricultural income rising from 20.4% in 1950 to 37.6% in 1961.

It is necessary to know something about changes in the number of dependents in each category before these increases can be interpreted as welfare gains. The increase in the share of the "landless peasants" group was accompanied by a substantial increase in per capita income as a result of the fall in the absolute number of landless families, from 1,217,000 in 1950 to 970,000 in 1961,[31] as well as the rise in number of wage earners.

On the other hand, the increase in the income received by the group holding <5 feddans (i.e. the poor and small peasantry) was accompanied by a substantial increase from 787,000 to 1,381,000 in the number of farmers as a result of the land redistribution programme. The transfer of land ownership implied significant income increases for those in this group. Finally, the absolute income received by the big landlords (i.e. ≥ 50 feddans), as well as their relative share of total agricultural income, dropped markedly during the 1950s.

A few remarks concerning the data base in Table 7 are in order. First, 1950 was the year of the Korean War boom and this tended to bias upwards the non-wage income share of agricultural income. Thus there was a downward bias to the share of agricultural income earning to wage labourers. Secondly, the >5 feddan's holdings group in 1961 included the beneficiaries of land reform. The interest payments to the

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[31] This amounted to a decline from 44% to 30% in the total number of rural families. See: ibid., p. 44, Table 2.12.

government and the amortisations associated with the newly distributed land were left out of the picture; this might be because they were considered to be a kind of compulsory savings.[32] Thirdly, it should be stressed that the use of a uniform average income per feddan, without regard to the size of farm, leads to some upward bias in the incomes of small owners and tenants. In most countries many small farmers are compelled to sell the whole of their crop immediately after the harvest at unsuitable prices, and then buy some of it back at a substantially higher price later.[33] These losses in incomes arise mainly because of the shortage of adequate storage facilities and the pressing need for cash.

It is clear from the preceding discussion that the "middle and rich" peasantry benefited most in terms of per capita income increases. It is also obvious that the "landless and small" peasantry achieved significant gains in income, though to a lesser degree. For the rest, incomes declined very sharply particularly for the very large landlords.

Despite the conclusion drawn from the above discussion, we cline to believe that the conceptual and statistical bases were not accurate for some reasons. First, the estimates of "landless peasants" suffers from a gross understatement emanating from a wrong reading of the population census results. According to the 1960 population census, total rural population over six years of age amounted to 13,072,236 while those engaged in agricultural activities and those inactive were 12,136,716 which leaves 935,605 or 7.2% exactly of rural population who

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[32] B. Hansen and G. Marzouk, "Development and Economic Policy in UAR (Egypt)", op. cit., p. 94.

[33] See: C. Clark and M. Haswell, "The Economics of Subsistence Agriculture", op. cit., p. 63.

were engaged in non-agricultural activities.[34] What the study, mentioned above, seems to have done was to take the difference between total rural population which amounted to 16,120,398[35] and rural population over six years of age engaged in all activities which was 13,072,236.[36] Thus, the study assumed that this difference (of 3,048,162 or 18.9% of total rural population) represented the number of population engaged in non-agricultural activities. On these grounds the ratio of non-agricultural to total rural population which estimated at 19% has to reject as the assumption on it is crucial to the estimate of landless.[37] Secondly, the study stated that "figures for the incomes of different groups of landholders are based on estimates of average gross value added per feddan for different size farms" for which it cites Mead , p. 67, as a reference. As a matter of fact, the figures in Mead refer to "gross value of output/feddans" but not value-added. Finally, the estimates of income shares of various landholding classes are erroneous. After allocating income to ownership classes the study referred the difference between their combined share and total agricultural income to a separate category labelled "rental payments for absentee land ownership", and forgotten that this group were included in the estimate of income by ownership class. Moreover, a simple addition of the number of families in various socio-economic recipient groups, which the study presented in the same table, would have shown that the study has accounted for all landholders in Egypt, and the estimates as they stand contain a grave double counting.[38]

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[34] 1960 Population Census, Table IV, pp. 13-16.

[35] Ibid., Table II, p. 11.

[36] Ibid., Table IV, p. 16.

[37] S. Radwan, "The Impact of Agrarian Reform on Rural Egypt, 1952-1975", op. cit., p. 6.

[38] Ibid., p. 35.

CONCLUSION

The foregoing analysis enables us to draw some broad conclusions about the distributive effect of agrarian reform during the period 1952-1970. We cline to believe that the changes in the distribution of income among rural classes is basically a reflection of the changes in the structure of land ownership. In this respect, the Egyptian agrarian reform had an important impact on the process of differentiation among the peasantry. The class of big landowners (mostly absentee) has weakened, if not eliminated and has been replaced by a class of rich and medium capitalist farmers who depend on hired labour and modern machinery in the cultivation of their land. At the other end of the spectrum, the majority remained in the class of poor and lanless peasants who depend on their labour to earn a living. Moreover, minimum wage legislation and rent controls have, to some extent, replaced the semi-feudalist relations by contractual ones. In other words, the reform has largely transformed the relations of production from semi-feudalist, semi-capitalist, into capitalist relations. The distribution of income reflects this transformation. Thus, we cline to believe that during the period under study the absolute income received by big landlords (i.e. over 50 feddans) as well as their relative share of total agricultural income must have fallen considerably. Meanwhile, the middle and rich peasantry (i.e. 5-50 feddans) benefited most by increasing both their share of agricultural income and income per capita. Poor and small peasants (i.e. < 5 feddans) must have increased their share of agricultural income mainly due to the increase in their numbers, also increased their per capita income, but to a lesser degree. Finally, the problem of landlessness seems to be far from being solved.

CHAPTER 4

STRUCTURAL AND SOCIAL CHANGES IN THE INDUSTRIAL SECTOR OF EGYPT

4.1. INTRODUCTION

The concern with economic development of the leaders of the coup of 23 July 1952, was not limited to the chronic problems of rural Egypt and the redistribution of wealth, income and political power. Measures taken in the early years of the revolution suggest that they had, from the very beginning, other objectives. The first relates to the diversification of the economic structure, mainly through industrialisation. This involved at one stage greater encouragement to private industry; government participation in new industrial ventures, and an increase in the rate of public investment in electricity, agriculture, and certain services. An essentially free enterprise system was thus rapidly transformed into an economic system that involved a considerable degree of state intervention through planning and the operation of a large public sector.

The need for economic diversification was closely related to another concept, that of Egyptianisation. The Egyptian governments, until the Second World War, were generally timid in undertaking measures leading to a significant diversification of the economic structure. Tariffs, established in 1930 and raised on several occasions afterwards were primarily designed to finance government expenditures. After the War it became an important policy instrument. Two Five-Year Programmes for public expenditures on irrigation and social infrastructure were drawn up and approved by Parliament in 1935 and 1947, but implementation was incomplete and sluggish. The old regime, however, took steps (especially during the late 1940s) towards Egyptianisation.

It imposed ceilings on the proportion of foreign manual workers (limited to 10%), and salaried employees (25%), and on the proportion of capital held by non-Egyptians in joint-stock companies (49%). Arabic became the official language for book-keeping and all commercial documents. Finally, the Egyptianisation of the judicial system was completed in 1948 with the abolition of the Mixed Courts.[1]

From the start the new leaders were more determined than the old to carry out the objective of economic diversification. Discussion of the requisites and probable implications attaching to the structural changes in industrialisation, requires a thorough study of the lessons and experiences of past industrialisation policies. Equally important is to view "industrial development" in the broader perspective of the social and cultural change that is concomitant with economic development. It is the aim of the following sections of this chapter to investigate these policies.

4.2. INDUSTRIALISATION

"Industrial developments"[2] have a long and fascinating history in

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[1] R. Mabro, "The Egyptian Economy, 1952-1972, op. cit., p. 108.

[2] Industrial development is not simply the expansion of production capacity and of output of manufactured goods. In the strict sense of the term it implies the building of an "industrial society" characterised by the following features: a rational organisation of production, both in manufacturing and in other sectors of the economy, which in turn implies the intensive application of science and technology throughout the whole field of production of goods and services; an equally extensive participation of the population in consumption, so that the benefits of technical progress reach all social groups; and an "open" social stratification system, supported by modern methods of education, capable of providing the necessary talent and educating the whole population to understand and take part in the industrialisation process.

See: United Nations Economic Commission for Latin America, The Process of Industrial Development in Latin America, New York, 1966., Sales No. 66 II G4, p. 228.

Egypt. The Revolution of 1952 did not initiate these developments, but gave the state the leading role in furthering them.

Two landmarks in the history of industrial development in Egypt were the establishment of a separate Ministry of Industry in 1956, and the Industrial Organisation of Law of 1958. The First Five Year's Industrialisation Programme (prepared in 1957 and later incorporated with the general plan of 1960-1965) was another important step towards the consolidation of industrial policy in this early period.

The process of economic development in Egypt was accompanied by significant organisational changes of a far-reaching nature. With the rapid socialisation of the economy, a major portion of the industrial sector was transformed into state-owned enterprises. Consequently, it has been necessary to evolve new economic management techniques in order to improve the overall efficiency of the industrial sector. The evolution of the public sector in the industrial field, both in structural organisation and managerial efficiency, was a salient feature of Egyptian industrial policy in the 1960s, while private-owned enterprises continued to play an important role in industrial activity.

The process of industrial development in Egypt was carried in three stages: the First Industrialisation Programme (1957-June 1960); the First Five Year Plan (1960/61-1964/65); and the Second Five Year Plan (1965/66-1969/70).

Table 1 shows the list of projects classified by major branches of industry that were included in the above three stages.

Industrial policy during this period, as formulated in the First Industrialisation Programme, aimed at:[3]

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[3] F. H. Awad, "Industrial Policies in the Arab Republic of Egypt", L'Egypte Contemporaine, Vol. No. 351, January 1973, p. 7.

(i) self-sufficiency through import substitution;

(ii) expansion of industries with export market orientation;

(iii) obtaining a balance between the development of basic[4] and consumers industries; and

(iv) achieving an equitable regional distribution of industry.

These policy considerations were observed through later stages of industrial development. They were re-shaped and emphasised in the National Charter of 1962,[5] but with certain additions: (i) heavy industries should have prior importance, without however jeopardizing consumers' industries expansion.

The list of criteria for determining the priority of projects was rather lengthy but not always clear. The first Industrialisation Programme enumerated, without order of preference, such conditions as: contribution to national income, local and foreign finance needs, rate of profit, increase in productive capacity of capital goods, contribution to the supply of consumption goods, savings of foreign exchange, the length of the gestation period, absorption of locally available factors of production such as raw materials and non-skilled labour, and national strategy. It is of particular significance that import substitution and export promotion did not appear explicitly on the list. The Second Industrialisation Programme was more decisive in coming out in favour of export promotion industries and in giving top priority to the non-defined-strategic factor and to "important" basic industries. Two totally new conditions were also laid down: inter-industrial complementarity, and fundamental industries location considerations.

Below we describe the successive policy frameworks within which

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[4] The term, here, seems to refer to producer's industries.

[5] Ministry of National Guidance, State Information Service, The Charter, op. cit., Chapter 7.

Table 1

Industrialization Plans in Egypt, 1958-1970

	1st Industrial Programme 1958-1960		2nd Industrial Programme 1960-1965		3rd Industrial Programme 1965-1970	
	No. of Projects	Total Cost	No. of Projects	Total Cost	No. of Projects	Total Cost
		Million £E		Million £E		Million £E
Mining	14	15.0	95	105.3	27	59.1
Petroleum			22	97.8	23	96.9
Petrochemicals	14	55.7	1	55.0	1	55.0
Chemicals			214	231.6	68	212.8
Building materials			17	5.6	57	65.2
Metallugical industry			32	107.4	48	202.5
Engineering industry	456	258.1	319	151.7	64	185.6
Food processing			339	157.6	43	84.3
Textiles			187	104.9	103	87.3
Handicraft, rural & small industries			174	8.2	488	22.3
Training Centres	18	1.7	40	7.4	20	6.6
Total	502	330.5	1440	1032.5	942	1077.6
Realized at end of programme	105	83.5	931	467.0	-	507.2
Rate of achievement			65%	45%		

Source: Compiled from; United Nations, Industrial Development in Africa, (Industrial Development in the UAR), New York, 1967, Sales No.66 II B24, pp.289-301.

industrialisation has proceeded in Egypt since 1930. The policy framework changed with the economic system first dominated by free private enterprise until the mid-1950s. Since 1961 the economic system, then, dominated by planning, public investment and ownership of modern means of production. There was an overlap in the second half of the 1950s when the private sector operated in a mixed set up side by side with an expanding public sector. It is useful to distinguish two policy frameworks, each pertain to one economic system and hence to a fairly well-defined period of Egypt's history. In the first system (1930 to the late 1950s) tariffs and import-controls were the main policy instruments. The second framework involved direct investment by the state in industry, the nationalisation of foreign trade operations, extensive administration of prices,[6] public ownership of most modern industry and labour and employment policies.

A. Tariff Protection in Egypt

Industrial policy in the field of tariff protection passed through a number of stages. Prior to the 1930 comprehensive tariff there was a uniform de-valorem duty of 8% on import values. Duties on exports were initially also 8%, but were gradually reduced to 1%.[7] The main function of tariffs at that time was to finance government expenditures.

In view of domestic industrial expansion and various recommendations from governmental and foreign experts, the need for new comprehensive tariffs was stressed. On 14 February 1930, a new tariff came into operation. Accordingly, a 15% ad-valorem duty on finished goods for average income consumers was imposed, against a 25% and 30% rate on

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[6] This policy and others, such as exports, will be taken up in Chapter 8.

[7] For a detailed survey of Egypt's tariff system, see: Nagib Keladah, Tariff as a Tool for Economic Policy, Monshaat Al-Maaref, Alexandria, 1965, pp. 7-18 (in Arabic).

luxury and extra-luxury goods respectively. On the other hand, the ad-valorem duty was reduced to 4% to 6% on imports of industrial raw materials and fuel, and to 8% on imports of semi-manufactured goods used for local production.

Between 1930 and 1950, the process of industrialisation was relatively slow, and the structure of industry was basically characterised by the concentration on a small number of industries processing agricultural products, especially cotton. Only Bank Misr and its affiliated companies took the initiative in establishing large scale industries. The reduction of external supplies during the Second World War strengthened these "infant" industries and encouraged the introduction of many new lines of industrial activity. With the restoration after the "War" of former foreign trade contacts, these industries began to feel the onus of severe competition from abroad. Therefore, in 1948 the government raised duties on a number of imported manufactures to protect local industrial production and at the same time contributed to government revenue. Further, imported raw materials for industry gained more preferential treatment in the form of lower import duties, while imported machinery and parts were exempted to encourage Egyptian industries carry out deferred plans for the replacement and modernisation of fixed capital.

Another stage of industrial development in Egypt, was marked by the creation of the "Permanent Council for the Development of National Production" in late 1952. The "Council" wasted no time in coming all out in favour of more organised industrial development policy. This "Council" was asked:[8]

(i) to examine and recommend projects of development in all fields

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[8] Permanent Council for the Development of National Production, 1955 Report, op. cit.

of economic activity;

(ii) to finance projects directly through public appropriations;

(iii) to issue bonds with government guarantees; and

(iv) to participate in the formation of joint-stock companies, and secure government guarantees for an annual return on paid-up capital in addition to fiscal privileges.

Meanwhile, preliminary studies led to a series of stop-gap enactments:[9]

(a) Imported raw materials for industry were finally exempted from customs duty.

(b) Priority was given to the importation of machinery and equipment required for local industry.

For instance, to encourage the new tyre industry, the import duty on natural rubber, previously fixed at £E8.70 per ton, was abolished while the ad-valorem duty was reduced from 3% to 1%. To encourage the new electrical wires industry, the import duty on copper was abolished and the ad-valorem duty reduced from 8% to 3%. To encourage the assembly of cars in Egypt, the additional ad-valorem duty on imported component was reduced from 30% to 20%.

In the other direction, supplementary duties were levied on most imported goods. These supplementary duties were:[10]

(i) An ad-valorem duty of 8% which was levied on all imports with the exception of about 150 items.

(ii) An additional ad-valorem tax of 9% was imposed on most imports

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[9] National Bank of Egypt, Economic Bulletin, No. 4, 1961, p. 3.

[10] S. K. Mohamed, The United Arab Republic's Balance of Payments, Commercial Policy, and Economic Development, 1952-1962, Ph.D. thesis, The Ohio State University, 1963, pp. 155-156.

except printed materials, some raw materials and industrial and agricultural equipment.

(iii) A supplementary ad-valorem duty was levied on 160 luxury items. These duties ranged from 20% to 100%.

(iv) A statistical duty of 1% of the c.i.f. price.

(v) A wharfage duty of 10% of the customs duty was imposed on all items except tobacco. For tobacco the wharfage duty was three "milliems" (£E1 = 1,000 milliems) per kilogram of tobacco.

(vi) An excise tax on some items: alcohol, alcoholic drinks, benzine, sugar, coffee, cement, and playing cards.

(vii) A paving duty on all imported goods.

The above brief account of the history of the tariff rate and tariff policy suggests that by the early 1960s a complicated structure of tariffs had evolved as a result of piecemeal changes. There was therefore a need for new tariff legislation.

In 1962 a new structure of tariffs was introduced. This had two principal features - a unified proportional rate and a differential rate. For the purpose of determining the differential rate imports were classified into three broad groups - raw materials, semi-manufactures and finished goods - and reference was made to the capacity of domestic industry. In general the differential tariff on raw materials was lower than that on semi-manufactures, which in turn was lower than that on finished goods. Where domestic production of a particular good was low or non existent, thus the differential tariff was accordingly reduced. Imports of coal were totally exempted, from all tariffs, because of the requisites of the newly established iron and steel industry.[11]

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[11] Federation of Egyptian Industries, The New Customs Tariff, Egyptian Universities Publishing House, Cairo, 1963 (in Arabic).

As a result of the 1962 tariff reforms customs duties have been changed to bring in more revenue to the public budget. Customs duties have accounted for an increasing share of total tax revenue. Excise and customs duties rose from 65.3% to 77.4% between 1957/58 and 1964/65.[12] This was a direct outcome of governmental policy to shift emphasis to indirect taxes. In this context, Egypt has a remarkable success compared with other developing countries in raising revenue pari passu with its needs.[13]

In addition to the tariff structure discussed above, protection measures were consolidated by a highly bureaucratic import and export licensing system which has similar characteristics to the tariff structure. It prohibits import of commodities which are domestically produced and shifts imports towards necessary foodstuffs, raw materials and capital goods - in that order of priority. From 1963, the public sector has been the only authorised organ for imports. The private sector can only import through public organisations and in accordance with the priorities laid down in the Central Plan.

The licensing system for exports was extended in 1959 to cover seventy different agricultural products (compared to only twelve before 1952), and many other industrial exports have been under the central government authority.[14]

In view of this historical background, a somewhat complicated structure of protection evolved. The protectionist policy was the

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12 Based on data compiled from: Bank Misr, Economic Review, No. 4, December 1963, pp. 174-175; and J. R. Lotz, "Taxation in the United Arab Republic (Egypt), STAFF PAPERS, International Monetary Fund, Vol. 13, 1966, Table 3, p. 126.

13 J. R. Lotz, ibid., p. 128.

14 M. S. Mourad, and F. Moursi, Foreign Exchange Budget and the External Finance of Development, Dar Al-Maaref, Cairo, 1967, pp. 199-215 (in Arabic).

result of a mixture of measures and instruments that were governed both by the strictly protectionist aim and by the need to obtain more revenue, or to improve the balance of payments. Its real influence, however, was to create a climate of excessive protection for domestic industry on such a large scale that there was no pressure on the newly established branches of industry to improve productivity and efficiency.

Furthermore, manufacturing industries expanded at a rapid rate by producing almost anything that could be produced for the domestic market. Once domestic production had begun their imports were behind through the introduction of high tariffs and direct controls regardless of comparative costs. The leit-motiv for the First and Second Industrialisation Programmes (1957-1964/65), was self-sufficiency and import-substitution. Import-substitution was considered to be the most effective way to make a developing country with a single export commodity - such as Egypt - less dependent on foreign trade. Consequently the choice among industries was determined by reference to the need for diversification at one level and for heavy industry at another, regardless of comparative advantage.

Inefficient import substituting industries, combined with an implicit bias against exports, seemed to have had adverse effects on the growth of the manufacturing sector. Beyond the easy initial stages of import substitution in producing consumer goods for the limited domestic market, expansion in intermediate and capital goods has been increasingly difficult due to an increasing shortage in foreign exchange. A direct result of that has been a chronic balance of payments deficit which has always been met by strict control on imports and foreign exchange.

B. Financing Industrial Development

Sources of finance of the industrial sector are either endogeneous to the sector, in the form of depreciation reserves and profit

reinvestment, or exogeneous to it. Funds from abroad are an obvious exogeneous source and these can be either official or private in nature. Such funds can, in turn, be either in the form of loans and credit facilities, or direct capital participation. A comprehensive coverage of all these sources would be outside the prescribed scope of this study.

Registered capital of industrial companies with head offices in Egypt (taken as a crude indicator of the development of industrial investment) increased from £E46 million at the end of 1955 to £E101 million at the end of 1959.[15] Net new investments between 1951-1959, as may be seen from Table 2, amounted to £E90 million, out of which investments on expansion alone amounted for £E21 million. The bulk of these investments were in joint stock companies. The general trend over the period is also quite interesting: net new investments in industry increased from £E2 million to £E19 million, whereas those for commerce and trade were at best stagnant. Whereas investment in commerce and trade was more than three times the level of industrial investments in 1951, it went down in 1959 to as low as 26%.

Since 1959 the government has been the main founder of new industrial projects. These were part of the First Five Year's Industrialisation Programme of 1957 and were later embodied in the Development Plan of 1960/61-1969/70. Since the start of the "Programme" and until June 1970, public investments in industry totalled £E945.3 million,[16] that is more than ten times as much what was invested in industry during the corresponding period of the 1950s.

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15 National Bank of Egypt, The Economy of the UAR during the 1950s, Cairo, 1963, p. 104 (in Arabic).

16 Central Agency for Public Mobilization and Statistics, Statistical Handbook, op. cit., p. 61; and Ministry of Planning, Follow-up Reports.

Table 2

Net New Investments in Industry, and Trade and Commerce, 1951-59, in Millions of £E

	1951	1952	1953	1954	1955	1956	1957	1958	1959	Total 1951-59
1. New registered Capital	1.1	1.2	1.9	2.8	7.3	27.3	13.6	8.7	14.3	78.2
joint-stock Companies	-	-	-	-	4.0	24.0	10.6	6.1	9.4	
2. Expansions	1.3	1.2	1.3	1.3	3.3	1.3	1.0	5.2	5.3	21.2
joint-stock Capital	-	-	-	-	3.1	0.8	0.7	4.7	4.5	
3. Contractions	0.3	0.3	0.2	0.5	0.9	2.4	1.7	1.1	0.7	8.1
joint-stock Capital	-	-	-	-	0.3	2.1	1.2	0.3	0.2	
4. Net New Investment	2.1	2.1	1.2	3.6	9.7	26.2	12.9	12.8	18.9	89.5
joint-stock Capital	-	-	-	-	6.8	22.7	10.1	10.5	13.7	
5. Net New Investment in Trade & Commerce	6.9	9.4	6.1	6.3	3.0	2.9	2.7	3.3	5.1	45.7

Note and Source: - means not available

Compiled From: Federation of Industries Annual Year-Book, Cairo, Several Issues (in Arabic).

The government also concluded a number of economic and technical agreements with foreign countries, especially the Soviet Union, in order to help finance the foreign currency needs of industrial development. In January 1958 a loan of 700 million roubles (£E60.9 million) was contracted to finance imports during the first[17] Industrialisation Programme; in September 1964 another loan of 300 million roubles was agreed.[18] Several countries including the Federal Republic of Germany, Japan, Spain, France, the Netherlands, the Democratic Republic of Germany, China, provided loans and credit facilities which totalled some £E370 million during the whole period.[19]

Another exogenous source of finance for industrial development funds is the banking system. Incentives in this field may result from general provisions governing the allocation of bank credit and from the establishment of public bodies (such as industrial banks) with the aim of offering industry more credit on better terms.

To assess the share of total bank credit that has fallen to manufacturing industry, the overall contribution that bank credit resources have made to the economic development of Egypt as a whole must first be borne in mind. As may be seen from Table 3, the relation between bank credit and the gross national product remained fairly stable during the period 1960-1967, fluctuating around 20%. However, credit facilities specifically channelled towards the industrial sector exhibit a steady rising trend from 37% of total bank credit at the end

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17 And later on the Second Industrialisation Programme also.

18 The exchange ratio between the rouble and dollar was 6:1; and the credit facilities provided to Egypt until 1963 amounted to $333 million. See: K. Billerbech, Soviet Block Foreign Aid to Underdeveloped Countries, p. 50.

19 F. H. Awad, Industrial Policies in Egypt, op. cit., p. 16.

Table 3

Contribution of Bank Credit to General Economic and Industrial Development

(In Millions of Current £E and Percentages, 1960-1967)

Period	Bank Credit (End of June)			Bank Credit (End of December)			% Contribution of Bank Credit To	
	Total	Industry	% of Industry To total	Total	Industry	% of Industry to Total	Gross Domestic Product (1)	Industrial Income (2)
1960	257.0	115.4	44.9	297.7	110.1	37.0	20	44.9
1961	283.0	127.1	44.8	321.0	136.7	42.6	20.8	44.5
1962	309.2	146.8	47.5	382.0	151.0	39.5	21.9	47.4
1963	372.3	177.4	47.6	424.0	195.0	46.1	22.8	50.4
1964	304.0	168.8	55.5	456.0	187.0	41.1	17.5	43.1
1965	411.8	192.0	46.6	509.0	197.0	38.7	21.9	45.3
1966	409.6	193.5	47.2	475.0	220.0	46.3	19.6	41.8
1967	425.2	225.7	53.1	...	...	..	19.5	47.3

Source and Notes: These figures Constructed From Data available in: Central Bank of Egypt, Credit and Banking Development, Several Issues; And Ministry of Planning, Follow-up Reports, Several Years.

(1) Total Bank Credit, end of June Figures, to gross domestic product in fiscal years ending June of year shown.

(2) Industrial Bank Credit, end of June figures, to Industrial income in fiscal years ending June of year shown.

of 1960 to 46% at the end of 1966. This trend is also confirmed by the mid year figures.

The terms on which bank credit is generally offered are no less relevant. Long term credit has traditionally constituted a low proportion of total commercial bank credit but the Industrial Bank was established in 1948, and commenced operations in October 1949, to supply medium and long term loans to industry.[20] Since its establishment this bank has undergone several changes, in its lending operations; while at the same time its lending resources were considerably increased. In successive steps, the upper limit set for the bank to borrow from the government, or be guaranteed by it, was raised to reach £E10 million. The bank's lending operations were necessarily very modest in the early phase of its evolution when up to the end of 1953 its total loans to industry had not reached £E2 million. During this period, large loans of £E50,000 or more took up nearly half its industrial credit, while short-term loans of up to one year also constituted just under 50% of the total.[21] As may be seen from Table 4, this trend in short term loans continued until 1965, in which year they accounted for over 75% of all loans. However, as far back as 1958, a large number of enterprises were permitted to borrow short for one year renewable up to ten years, which meant that a large part of these loans in fact belonged to the category of long term loans.

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20 The statutory purpose of the Industrial Bank was to "develop Egyptian industry and handle banking business pertaining to it, and in specific: (i) to participate in establishing and assisting Egyptian industrial establishments; (ii) to provide Egyptian industry with raw materials or basic equipment; (iii) to lend on short-term for a maximum of twelve months, on medium term for no more than ten years, and on long term for no more than twenty years for the purpose of setting up new industries or new branches thereof". See: Industrial Bank, Industrial Bank Bulletin, 1965 (in Arabic).

21 Central Bank of Egypt, Credit and Banking Development, several issues.

Table 4

Distribution of Industrial Bank loans and advances, by maturity

(in Millions of £E and Percentages, 1958-1968)

Period	Total (Millions)	% To Total of loans Payable		
		Within 1 Year	1-5 Years	5-10 Years
End of December 1958	5.2	75.5	7.5	17.0
End of December 1959	6.7	82.1	7.5	10.4
End of December 1960	8.5	75.3	15.3	9.4
End of December 1961	9.1	76.9	11.0	12.1
End of December 1962	8.6	77.9	9.3	12.8
End of December 1963	8.5	84.7	4.7	10.6
End of December 1964	8.4	83.3	3.6	13.1
End of December 1965	8.2	76.9	2.4	20.7
End of December 1966	11.5	36.5	20.0	43.5
End of December 1967	14.2	54.1	23.9	22.0
End of December 1968	14.6	17.3	25.5	57.2

Source: Central Bank of Egypt, Credit and Banking Development, several issues.

Table 5

Annual Disbursements of Industrial Bank loans & Advances by maturity; by Size of loan and by Sectors, 1962/63-1967/68

Period	Total (£E.000's)	Payable						Size of loan Disbursements						Sector			
		Within 1 Year		1-5 Years		More than 5 Years		<10		10-100		≥100		Public		Private	
		Value (£E000's)	%	Value (£E000's)	%	VAlue (£E000's)	%	£E 000's	% of Total	£E 000's	% of Total	£E 000's	% of Total	£E 000's	% of Total	£E 000's	% of Total
1962/63	917	92	10	49	5.3	776	84.7	70	7.7	147	16	700	76.3	674	73.5	143	15.6
63/64	880	102	11.6	80	9.1	698	79.3	147	16.7	133	15.1	600	68.2	689	78.3	191	21.7
64/65	1169	32	2.7	238	20.4	899	76.9	19	1.6	229	19.6	921	78.8	1002	75.7	167	14.3
65/66	2524	..	..	379	15.0	2145	85.0	228	9.1	428	16.9	1868	74	1973	78.2	551	21.8
66/67	4781(1)	..	..	1248	26.1	3533	73.9	241	5.2	725	15.1	3815	79.7	3941	82.4	618	12.9
67/68	3973(2)	..	..	2196	55.3	1777	44.7	547	13.8	1062	26.7	2364	59.5	2376(3)	59.8	1360	34.8

Source and Notes: These Figures constructed From data available in: Report of the Board of Directors of the Industrial Bank, Cairo, Several Years.

(1) Includes £E222000's granted to the Cooperative Sector.
(2) Includes £E237000's granted to the Cooperative Sector.
(3) Includes £E126000's granted to Organizations off listed to Arab Socialist Union.

As may be seen from Table 5 (which gives the de facto distribution of annual "paid out", bank loans; and the distribution of disbursements according to size of loan and sector) long term loans have clearly been getting the lion's share of the Industrial Bank resources during the 1960s. In addition to this shift towards long term loans there was also a tendency to grant large loans. Large loans of £E100,000 or more have nearly always accounted for over 70% during most of the 1960s, though there was a sharp decline in the percentage share of this group in 1967/68. Table 5 also shows that this decline in the share of large loans was accompanied by a change in favour of medium sized loans to the private sector on the medium term. This change may be a reflection of the new policy of the government of lending more support to the private sector which would be expected to borrow smaller size loans for a relatively shorter period.

Finance is one of the major problems facing small enterprises in the industrial field. Normal credit terms are often too burdensome for small firms both because of high rates of interest and commissions charged and the requirements. In 1968, the Central Bank of Egypt took a decision to exempt loans to craftsmen and small industrialists from 6% statutory minimum interest rate. As a consequence the Industrial Bank was able to lend to this category of borrowers at interest rates as low as 3.5%. Furthermore, the standing commission of ¼% for banking services was also waived for them.[22] However, the volume of loans that the Industrial Bank extended to small industries was not very impressive.[23]

To sum up, the reliance of industrial policy upon the indirect

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[22] Central Bank of Egypt, Circular No. 161/1968. The exemption relating to the minimum rate of interest was later cancelled according to Circular No. 186/1970.

[23] F. H. Awad, Industrial Policies in Egypt, op. cit., p. 19.

instruments discussed above had not succeeded in laying the foundations of modern industry in Egypt. Industrial activity before 1952 had been limited to certain lines of production which have originated during the conditions of the Post-Depression and Post-Second World War periods, and which were largely based on the processing of agricultural raw materials. Industrial investment in 1952 accounted for approximately 12% of total gross investment, and the contribution of the industrial sector to national income did not account for more than 10% in the same year.[24] As a result of the sporadic measures taken by the Egyptian government in the early 1950s (i.e. the setting-up of the National Production Council, the consolidation of the Industrial Bank, etc.) there has been a steady increase in private and public investments in different branches of industrial activity including oil, mining, iron and steel, textiles, fertilizers and chemical industries.

C. Fiscal Policy and Industrial Investment

In addition to the incentives that derived from protectionist policy and other measures designed to foster the installation and expansion of industry in Egypt, direct industrial investment by the State has gradually taken the lead in promoting industrial development.[25] Thus, the Ministry of Industry was established in July 1956 with the purpose of "drawing-up a well defined industrialisation plan and supervising its execution". Further, in 1958 a law (No. 12/1958) was passed with the aim of "regulating and encouraging industry". This law

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[24] U. N. Industrial Development in Africa, op. cit., p. 289. (This means that productivity of investment in industry was lower than average.)

[25] The direct contribution of the State to industrial finance, in the form of new investments in Industrialisation Programmes totalled £E83 million between December 1957 and June 1960; £E516.5 million between July 1960 and June 1965; and £E507.2 million between July 1965 and June 1970. See: Ministry of Planning, Follow-up Reports, various issues.

stipulated that:[26]

" (i) No industrial establishment shall be set up, expanded or have its production line or location modified without the prior consent of the Minister of Industry, and with due regard to the national economic needs, requirements of local consumption and exports, and within the economic and social plans of the state;

(ii) Directors of industrial establishments are to provide the Ministry with all data and information that it may require regarding their field of activity;

(iii) No industrial establishment active in basic industries or enjoying a monopoly shall cease production or reduce it beyond the set limits without prior reference to the Ministry;

(iv) All existing industrial establishments - falling into one of the categories designated by the Minister - shall apply for registration at the Ministry within three months."

The second element of organisational control over industry (embodied in the above mentioned law) appears in the powers given to the Ministry to fix uniform standards to be applied in production, and to define the specifications of products and raw materials employed. An Egyptian product is defined as the product in which the proportion of the value added by industry in Egypt is not less than 25% of final cost. Further, to foster industry, the Ministry shall provide industrialists with necessary information, offer grants for research work, and take part in creating training centres and other bodies for design and specifications. Also, to encourage industry a levy not exceeding 6% (raised in 1962 to 10%) of the cost of raw materials or total wage bill of the preceding financial year would be imposed on industrial establishments for the stated purpose of industrial development.[27]

Since 1958, however, the Egyptian government has taken a more

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26 Official Journal of Egypt, No. 7 "bis" A of 29 April 1958.

27 National Bank of Egypt, The Economy of the UAR during the 1950s, op. cit., p. 88.

positive role in forming industrial projects, first under the pioneer Industrialisation Programme of 1957 and later within the Comprehensive Development Plans. By the time the First Comprehensive Plan was launched on 1 July 1960, the decade of the 1950s had witnessed a spectacular increase in industrial production, which had raised its contribution in gross national product to almost 20%.[28]

The government's contribution to industrial finance was not confined to participation in new enterprises. The analysis of the public budget over the two periods 1950-1960 and 1960-1970 shows that a considerable share of the increase in public expenditure had been allocated to existing industry. Table 6 shows public expenditure on development projects during the 1950s totalled £E615 million, out of which £E184 million was allocated to industry. At the same time, current government expenditure on industrial and electricity projects (including the operating costs of Public Organisations and Public Authorities) amounted to £E258 million out of a total current public expenditure of £E2,443 million. During the period 1960-1970, development public expenditure allocated to industry totalled £E1,611 million out of a total development allocation of £E3,410, while current public expenditure allocated to industry amounted to £E1,148 million out of a total of £E8,729 million. In other words, 23% of public expenditure was allocated to industry during the 1960s compared with 14% during the 1950s. Between 1950/51 and 1969/70 the proportion increased from 7.5% to 24%.

Other fiscal policy measures were important during this period. In 1961, the Companies Law (No. 26 of 1954) was amended to allow the

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28 See: Central Agency for Public Mobilisation and Statistics, General Statistics and Analytical Studies, Vol. No. 7, 1970, p. 401.

Table 6

Public Expenditure on Industry[1], Millions of Egyptian Pound 1950/51-1969/70

Period	(A) Current				(B) Development			
	Total Public Expenditure		Industry		Total Public Expenditure		Industry	
			Value	%			Value	%
1950/51	160		5	3	31		9	30
51/52	199		6	3	35		6	17
52/53	185		5	3	25		5	18
53/54	185		8	4	48		19	40
54/55	213	2443	15	7	57	615	13	23
55/56	255		16	6	88		17	19
56/57	292		37	13	67		16	24
57/58	260		21	8	59		14	24
58/59	336		66	20	78		26	33
59/60	338		79	22	127		59	46
1960/61	414		78	19	286		109	38
61/62	459		81	18	315		122	39
62/63	650		73	11	362		168	45
63/64	669		67	10	411		218	53
64/65	742	8729	60	8	442	3410	200	45
65/66	861		77	9	345		184	53
66/67	948		78	8	368		180	49
67/68	849		57	7	232		105	45
68/69	1496		267	18	298		164	55
1969/70	1641		310	19	350		161	46

Source and Note: (1) Includes mining and electricity; and the High Dam after 1960. Computed from: Central Bank of Egypt, "The Economy of the UAR during the 1950's", Cairo 1963, pp.102-103; and Central Bank of Egypt, "Credit and Banking Development", Several Issues.

government to raise sufficient funds for the finance of general economic development. Accordingly the companies had to purchase government bonds to the value of 5% of their distributional profits. In addition, in 1967 several enactments stipulated that:[29]

(a) A further 5% of the net profits, for distribution, of all joint stock companies will be credited to "The legal reserve account";

(b) Another 5% (in the case of public sector companies) will be allocated to "the reserve for the rise in prices of fixed assets";

(c) 10% of "net" profits of public sector companies available for distribution (after above deductions) will be allocated to "the consolidation fund" if the company's liquid assets fell short of its short term liabilities;[30]

(d) 5% of paid-up capital will be allocated as a first distribution to shareholders and labour;

(e) 10% of the remaining profits would be set aside for director's remuneration to cover managerial and administrative expenses. In the case of private sector enterprises this represents an actual distribution, while for public sector enterprises it is transferred to the corresponding Public Organisation;

(f) The balance of profits would further be distributed among shareholders and labour.

The allocation under paragraph b, governs public sector companies which are subject to the newly applied "Uniform System of Accounts".[31] In that system, the shortcomings of the historical cost basis for

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29 National Bank of Egypt, Economic Bulletin, Vol. XX, No. 4, 1968, p. "new legislation".

30 Prime Minister's Decree No. 41 of 1969.

31 Central Agency for Accounts, Uniform System of Accounts, Cairo, 1968 (in Arabic).

calculating depreciation was acknowledged. To rectify it, while retaining the historical cost basis in formulating the profit and loss account funds would be earmarked (in the appropriation account) to meet the probable rise in prices of fixed assets. The distribution of profits to shareholders and labour (paragraph d and f) in public sector enterprises was again governed by specific legislation whereby 75% of it represented the state share, 5% was used to finance social and housing services for labour, 10% was pooled for central social services for the district (to benefit labour), and 10% set aside for direct cash distributions to labour.

Further fiscal incentives to industry took the form[32] of allowing the aggregation of profits and losses over a number of years, thereby maximising tax liability.

In addition to the above measures that were designed to stimulate new activities action was also taken to secure the necessary improvement in the productivity and efficiency of existing enterprises to provide pre-investment services in the stage of project formulation, to encourage foreign capital, and to promote industrial exports.[33]

According to law 21 of 1958, the Ministry of Industry was expected to provide industrialists with necessary information, offer grants for research work, and take part in creating training centres and other bodies for design and specification. The Ministry's advice had to be sought by those concerned with drawing up plans for industrial financing. The above law also allowed public authorities to dispose of land for industrial building on easy terms, and to assist with the finance of such buildings. Provision was also made for the Industrial

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[32] Originally embodied in the taxation law No. 14 of 1939.

[33] Central Bank of Egypt, Economic Review, Vol. XI, No. 1, 1971.

Bank to participate in the preparation of feasibility studies for industrial projects in the private sector.

Foreign investment was also encouraged to take an increasing role in the development of industry. The minimum share of Egyptian capital in joint-stock companies was reduced from 51% to 49%; the right to transfer profits abroad, and to repatriate capital on five annual instalments after five years of investment was guaranteed foreign capital profiting from these provisions was defined as that employed in economic development projects.[34]

In order to encourage industrial exports, state promotion and assistance extended in various directions. Export subsidies were introduced in the form of grants-in-aid to a number of industries. The "Cotton Spinning and Weaving Industry Assistance Fund" was formed in 1953 following the crisis that industry faced after the Second World War, when inventory accumulation had reached such a level that the government found itself obliged to act. It made a grant of £E0.5 million to the industry in order to encourage it to redirect part of these inventories to export markets. The "fund" was managed by the Federation of Egyptian Industries where was empowered to grant loans to factories to enable them to gear their production to export requirements.[35] These grants were termed "export differentials" and were intended to cover the higher cost of local raw materials used, and also the relatively high production cost. In 1967/68 an additional grant equal to 20% of the value of exports (f.o.b.) was introduced for exports to

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[34] Law 156 of 1953 amended by Law No. 475 of 1954.

[35] Similarly, the "Assistance Fund" for the rayon industry was set up within the Federation of Industries in 1957. It, also, had the purpose of promoting the disposal of synthetic yarn and fabrics on local and foreign markets. The management of the Fund was to lay down the policy for activating exports. See: Federation of Egyptian Industries, Annual Yearbook.

hard currency countries.[36]

D. Nationalisation and the Expanding Role of Government

By the time comprehensive planning began in July 1960, the Egyptian economy had undergone a steady expansion of the public sector and the government had already assumed much greater responsibility for economic development. Since 1956, there had been an extension and a tightening of controls in the private sector. The Egyptian economy could no longer be described as a free market economy.

Three forces, mutually reinforcing each other, were behind the expansion of the public sector through successive waves of nationalisation. These were the Egyptianisation drive; the development drive - which called for the implementation of development programmes with a large and growing volume of public investments; and the involvement of the state in the wider management of the economy.

The 1956 tripartite aggression following the nationalisation of the Suez Canal Company led to the sequestration of British and French assets in Egypt and those of certain Jewish residents. The government became the owner of seven important commercial banks, specialist credit institutions, and five major insurance companies. These measures gave the state control over half the banking sector and over two-thirds of all insurance business transacted in Egypt. These sequestrations were followed immediately by Egyptianisation measures, as required under Law 22/4 of January 1957. This required all foreign banks, insurance companies, and local branches of foreign commercial concerns to change their legal status to that of "societes anonymes Egyptiennes", with an

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[36] Central Bank of Egypt, Economic Review, Vol. X, No. 1, 1970.

Egyptian majority of shareholders and an Egyptian management. Later, in 1961, Belgian economic interests were sequestrated.[37]

The rapid expansion of the public sector since 1956 necessitated its reorganisation. A new institution, "The Economic Organisation" was created in January 1957, and then soon became the most important public agency for promoting industrial expansion. Thirty-one industrial firms were affiliated with it in 1958.[38] Some of these were old established public enterprises, others were new, consisting of joint public-private enterprises. Policy decisions of all firms had to be reported to the Organisation, and policy revisions could be demanded by the Organisation when the State owned 25% of the capital.[39] The Organisation was empowered to appoint a majority of directors to each firm's board when the State owned 25% or more of its shares. By the end of 1960, the Organisation's investments totalled £E71,235,000 compared to £E57.9 million in 1957, as may be seen from Table 7.

Towards the end of June 1961 there began what is referred to as the "Social Revolution". First, the entire cotton trade passed into government hands. The Alexandria futures market was closed and the Egyptian Cotton Commission assumed responsibility for buying and selling all raw cotton at fixed prices.[40] Concurrently, houses exporting cotton had to assume the form of joint stock companies with a minimum government shareholding of 35% in their equity capital.[41] Four firms

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37 Rashed Al-Barrawy, Economic Development in United Arab Republic (Egypt) Anglo-Egyptian Bookshop, Cairo, 1970, pp. 64-66 (in Arabic).

38 Bank Misr, Economic Bulletin, September 1957, p. 7.

39 Ibid., p. 66.

40 Laws 69 and 70, 1961. For more details about nationalisation measures of 1961, see: National Bank of Egypt, Economic Bulletin, No. 3, 1961, pp. 323f.; Institute of National Planning, Memo 137, "Social Laws and Decrees issued in July 1961 (1962)", and Information Department, "Socialist Laws 1961 (1962)", Cairo.

41 Law 71 of 1961. The proportion was later raised to 50% by Law 120 of 1961.

which pressed and baled raw cotton (an integral part of the organisation for the export of cotton) were nationalised outright on 9 July.[42] At the same time all export-import houses were compelled to exchange 25% of their share capital for public bonds bearing interest at 4% and redeemable after fifteen years.[43] By bringing all firms engaged in external trade under the jurisdiction of the Ministry of Economy, the government strengthened control over supplies of foreign exchange.

Table 7

Economic Organisation's Investments in 1957 and 1960

(Money Amounts in Millions of Egyptian Pounds)

Sectors	Investments	
	1957	1960
Banking	7.1	8.145
Insurance	0.9	1.041
Mining and Oil	6.8	7.465
Manufacturing	38.0	49.357
Trade and Transportation	4.9	4.204
Others	-	0.23
Total	57.9	71.235

Source: Rashed Al-Barrawy, Economic Development in the United Arab Republic (Egypt), The Anglo-Egyptian Bookshop, Cairo, 1970, p. 68, adaptation.

Coinciding with the ninth anniversary of the Revolution of 1952, the State nationalised a massive share of Egypt's industrial and commercial property. Banks and insurance companies which had remained in private hands were taken over completely; so were 44 companies in

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[42] Law 110 of 1961.

[43] Law 107 of 1961.

such basic industries as timber, cement, copper, electricity and motorised transport.[44] The state expropriated half of the capital of 86 companies, mainly in commerce and light manufacturing.[45] The owners of a further 147 companies were dispossessed of the bulk of their assets by Law 119, which limited individual shareholdings in the firms to a market value of £E10,000; all shares in excess of that amount passed into state ownership.[46] Laws 122 and 123 transferred public utility concessions - electricity in Alexandria and tramways in Cairo - to the public sector.[47]

The Syrian secession from Egypt provided an opportunity for sequestrations of an explicitly punitive character (October-November 1961). The regime needed scapegoats and it proved expedient to pursue the nationalisation under a new pretext. The property of 167 Wealthy Egyptian families, many of Levantine origin, was sequestrated on 22 October. In November the list was extended to some 600 persons. Though sequestration was later lifted in a few individual cases, the measure was tantamount to confiscation in most instances, and as a result of it yet further private wealth was transferred to the public sector.

The nationalisation policy did not extend to small firms and establishments in commerce, manufacturing, construction, or transport. The regime was interested in the large and medium size concerns of the modern sector.[48] Since these were relatively easy to manage and

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[44] Law 117 of 1961.

[45] Law 118 of 1961.

[46] Law 119 of 1961.

[47] Laws 122 and 123 of 1961.

[48] The sector is defined as the group of manufacturing establishments in which ten persons or more are engaged.

provided sources of profits for the State, and employment for officers and technocrats. Small establishments do not conform such advantages for the ruling elite. Nationalisation was not extended to agricultural land, as mentioned in an earlier chapter, or urban real estate, for systematic expropriation would have created insuperable managerial problems, and more significantly would have alienated the middle classes, the very social groups which the regime represented.

The government also nationalised a considerable number of companies in spheres of production largely untouched by the original decree of July 1961. Thus in June 1963 the industry for the manufacture of drugs and pharmaceutical products passed into public ownership.[49] Similarly, (after short-lived experiments, first with private and then with mixed ownership) the government found it appropriate, for planning purposes, to nationalise all the major concerns in building construction, civil engineering, road haulage, and water transport.[50] Finally, a tidying up operation led to the nationalisation of firms which had unaccountably been omitted from the schedules of earlier measures while at the same time private family firms were nationalised.[51]

By the end of 1964, the government owned most of the means of production in the modern sector. The movement which began in 1952-1953 with small public participation in mining and manufacturing had transformed, through a succession of steps, the whole character of the economic system within a space of twelve years.

It is also worth noting that in addition to its programme of outright nationalisation the government also curtailed still further

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[49] Law 65 of 1963.

[50] Laws 63, 67, 70 and 825 of 1963 and Law 52 of 1964.

[51] Laws 72, 77-81, 140, 145-151, 157, 168-169 of 1963 and Laws 2, 41, 48-51, 120-124, and 141 of 1964.

the autonomy of producers within the private sector between 1961 and 1965. Thus, although "the Charter"[52] recognised internal trade as an area for private business, the Ministry of Supply interfered in retail and wholesale distribution in 1963. This interference was partly to facilitate the distribution of government products, and partly a response to rising prices.

After 1964, there were two minor but interesting developments. First, there was the emergence of a "new" private sector consisting largely of small firms, repair workshops, and commercial intermediaries. These often consisted of partnerships involving public sector employees. The size and significance of this sector is not known but there is evidence of some linkages[53] between public companies and private firms or middle-men. Secondly, after the Arab-Israeli War, the government relaxed restrictions on private exporting and this led to an increase in exports of "private sector goods" such as leather products, handicrafts, fruit and vegetables after 1967.[54]

One of the most interesting features of the Egyptian economy is that nationalisations automatically improved the relative distribution of wealth by transferring the ownership of means of production in large areas of the modern manufacturing sector to the State. The measures were essentially privative rather than redistributive and did not entail, directly at least, increases in income for other groups.

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[52] Information Department, The Charter, op. cit., Chapter 6.

[53] Either through sub-contracting or sometimes through black-market operations.

[54] The value of footwear exports, for example, increased from £E189,000 in 1965/66 to £E844,000 in 1967/68 and £E4.108 million in 1968/69; that of furniture exports, from £E85,000 to £E96,000 and £E766,000 in the same years. See: Central Agency for Public Mobilisation and Statistics, Monthly Bulletin of Foreign Trade, Cairo, various issues.

They were accompanied, however, by the socialist laws which granted substantial benefits to workers. Managing directors and members of company boards were displaced and replaced by new men whose income most probably increased as a result. The measures enabled the government to create new jobs. They also hastened the emigration of foreigners, thus opening up opportunities for Egyptians in a number of activities. The sequestrations also implied higher incomes for civil servants and other officials appointed to the trusteeship of the sequestrated properties. However, the main change was a considerable reduction in the volume and share of the profit income of households. The direction of distributional changes that occurred is clear, but it is impossible to assess the magnitude of these changes since data on the personal distribution of income is not available.

E. Industrial Policies in the Context of International Co-operation

In the field of industry, international co-operation covers a much wider scope than the act of negotiating (bilaterally or multilaterally) the development of one or more branches of industry. International co-operation is desirable not only as an objective but also as a basic instrument of industrial policy.

Several bilateral and multilateral agreements with foreign countries have been signed which bear directly on industrial development. A few of these serve to indicate the impact on industrial growth in Egypt.

Bilateral agreements with the USSR helped initiate the First Industrialisation Programme of 1957; many industrial projects in this and later programmes were supplied by the Soviet Union within industrial protocols that were signed for that purpose.[55]

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[55] National Bank of Egypt, Economic Bulletin, No. 4, 1957, and 1963.

On 7 December 1964, Egypt and Poland concluded an Economic Co-operation Agreement to come into force as from 9 February 1967. Thus, Poland supplied Egypt complete plants for production of electric zinc and aluminium, lead, zinc, foundries, transformer stations, steam boilers, building materials, kraft paper, nitrogenous fertilizers, cutting rools, mining and road construction equipment and railway carriages.[56]

On May 1965, a protocol was signed between Egypt and Yugoslavia committing both to industrial co-operation in the production of tractors and agricultural machinery, engines and motor vehicles, and the production of electrical equipment. It also laid down the basis for reciprocal credit facilities through the establishment of a Bureau for Economic Co-operation in Industry.[57]

In December 1966, Egypt, India and Yugoslavia signed an agreement, whereby it was decided that co-operation in the field of industry could be intensified and enterprises encouraged to negotiate tripartite agreements. More specifically, it was considered that industrial co-operation could be extended to industries engaged in the processing of agricultural products and minerals, in the manufacture of capital goods and durables, and in the production of fertilizers and other chemical products. Of particular significance was the reference to joint consultation in order to identify areas of fruitful co-operation with a view to promoting specialisation in production, bringing about economies of scale.

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[56] National Bank of Egypt, Economic Bulletin, Vol. XX, No. 4, 1967, p. 397.

[57] National Bank of Egypt, Economic Bulletin, No. 1 and 4, 1967, "New Legislation".

In December 1970, Egypt, the Sudan and Libya agreed to further their industrial development through regional co-operation. Similar bilateral agreements were also concluded with other Arab Countries.[58]

Wider economic co-operation in the industrial field has also been exercised by Egypt within the framework of Arab Economic Unity Agreement of 1957. Earlier, the Arab Trade Convention (the first multi-lateral trade agreement among the state members of the Arab League) was a first step towards an Arab Common Market. The "Convention" covered, in Schedule B, some 150 items of light manufactures or processed goods, for which a 25% reduction of the normal customs duties was provided for. Later amendments to the "Convention" added a Schedule C of nationally manufactured goods which enjoyed a 50% reduction, and a Schedule D providing for a 20% reduction of the applied tariff in favour of certain assembled manufactures for which the cost of local labour and Arab raw materials was at least 20% of total production costs.[59]

The Arab Economic Unity Council (in its often referred to Decision No. 17) set the 1 of January, 1965 as the starting date for the launching of efforts towards establishing an Arab Common Market. Industrial goods listed in Schedules B and C of the convention were to become tariff-free over a transitional period of seven and a half years and five years respectively. Import duties on all other manufactured goods exchanged among participants were to be removed gradually at an annual rate of 10% of the original duty. The freeing of all manufactured items from quantitative restrictions, irrespective of their inclusion in Schedules B and C of the Arab Trade Convention, was to take place at an annual rate of 10% of the number of items that were restricted at

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[58] See: National Bank of Egypt, Economic Bulletin, Vol. XXIV, No. 4, 1971, pp. 434-438.

[59] U.N., Studies on Selected Development Problems in Various Countries in the Middle East, New York, 1967, p. 25.

the beginning of November 1964. No special provision was made for Schedule D.[60] The rate at which manufactured items were freed from quantitative restrictions was raised to 20% in 1969. By 1 January 1970 all manufactured items in the "Arab Trade Convention" became totally tariff-free, while the tariff on other manufactures was only 20% of its original level. At the same time, 80% of manufactured items in Schedules B and C were free of quantitative and other administrative restrictions.

4.3. OUTPUT GROWTH AND STRUCTURAL CHANGES IN MANUFACTURING INDUSTRY[61]

This section evaluates the growth of output and the changes in the industrial structure which accompanied economic development in Egypt during the period 1952-1970. Thus, it examines the output growth; the size-distribution of establishments; the pattern of regional location; the ownership structure; and finally changes in the composition of output and employment by industry.

A. The Growth of Manufacturing Output

To obtain reliable figures on the indices of industrial production is a difficult task. Not only are the concepts and classifications used in the official sources highly ambiguous, but also the statistics in this respect are discontinued.

However, an analysis of index of manufacturing output during the period 1952/53-1969/70, has been undertaken recently.[62] The findings of this analysis are summarised in Table 8.

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60 Ibid., p. 26.

61 A statistical assessment will be taken up in Chapter 8.

62 R. Mabro and S. Radwan, The Industrialisation of Egypt: 1939-1973, Clarendon Press, Oxford, 1976, pp. 79-89.

Table 8

Index of Manufaturing Output, 1952/53-1969/70

Year	Index	Rate of Growth	(Adjusted)
1952/53	100.0	-	
(1953)			-
1953/54	108.2	8.2	
(1954)			(10.5)
1954/55	120.7	11.5	
1955/56	129.6	7.4	
1956/57	140.2	8.1	
1957/58	152.9	9.0	
1958/59	162.5	6.3	
1959/60	175.9	8.2	(11.8)
1960/61	203.2	15.5	(11.8)
1961/62	224.7	10.6	
1962/63	250.5	11.5	
1963/64	280.2	11.8	
64/65	292.8	4.5	
65/66	299.3	2.2	
66/67	297.2	-0.7	
67/68	291.0	-2.1	
68/69	301.2	3.5	
1969/70	315.4	4.7	

Source: R. Mabro and S. Radwan, The Industrialization of Egypt 1939-73, Clarendon Press, Oxford, 1976, Table 5.3.

This study used three Laspeyres indices with base years 1952/53, 1960/61 and 1967/68 chained together in order to allow for structural changes and to introduce new commodities more than that in the previous indices, as it comprised 159 commodities.

A few remarks concerning the data in Table 8 are in order. First, despite the enlarged coverage in the index it confined only on the "large" establishments (ten or more employees). The index did over-estimate the rate of output growth in the first year, and between 1959/60 and 1960/61. This is because statistical sources tend to understate levels of activity in 1952 and 1959/60 in order to boost achievements accomplished under the Revolution and during the First Five Year Plan. Thus the study did call for two adjustments. First, in assessing long-term movements it relied on the index of manufacturing output for the year 1954.[63] In assessing performance in the late 1950s and during the Plan period, the study did smooth out movements between 1958/59 and 1960/61 by averaging the rates of output growth in the interval.

However, Table 8 suggests that Egyptian industry enjoyed a fast output growth during the period 1953/54-1963/64 with average compound rates closed to 10% per year. After 1963/64 this rate began to slow down reaching negative rates during the period 1966/67-1967/68 with short recovery thereafter. This turning point in the growth performance of industry affected the whole economy, will be discussed in more detail in a later chapter. It suffices to say here that the relationship between GDP and industrial output which was close during the 1960s reflects on the widespread incidence of the problems facing the Egyptian economy and on the significant place acquired by industry in the economic structure.

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63 Ibid., p. 84.

B. Size Composition of Establishments

One of the aspects of the industrial structure is the size distribution of establishments. Concentration in Egypt's modern manufacturing approves itself in a variety of ways. The size composition of establishments, for example, is lopsided. In 1966/67, 193 units employing each 500 persons or more - that is, less than 4% of all "ten plus" establishments in manufacturing and mining - accounted for 77% of value-added and 67% of employment in that sector. The 602 establishments employing 100 persons and more - that is, 11.5% of all establishments - generated 91% of value-added and 81% of the labour force. There seems to be sharp differences in economic characteristics between industrial units 10-99 employment bracket and units with 100 workers or more. Table 9 shows that in 1966/67 net value-added per person engaged did increase with size of establishments but the differences in this parameter were not very significant between the first and second class and between the third and fourth bracket. Another aspect of industrial achievement after the 1952 Revolution can also be drawn from Table 9. An addition, through expansion of old establishments and new foundations, of 359 factories in the 50 plus bracket of the industrial structure did achieve between 1952 and 1966/67. These brackets - a third of which were in the 500 plus bracket - absorbed most of the funds allocated to industrial investment during the period 1952-1966/67 and were responsible for significant output growth.

C. Pattern of Regional Location

A significant proportion of Egyptian industry is located in three urban zones: Greater Cairo, Alexandria, and the Suez Canal governorates. Table 10 gives a comparison of the regional distribution of establishments, value-added and employment in Egyptian industry in 1952 with

Table 9

Size-Composition of Establishments in Manufacturing and Mining, Net Value-added Per Worker by size of Establishment

Class	Size-Composition of Establishments in Manufacturing and Mining						Net value-added Per Worker in 1966/67	
	1952		1961		1966/67		Average number of persons engaged per establishment	Net value-added per person engaged (index)
	Numbers	%	Numbers	%	Numbers	%		
10-49	2733	79.5	3173	78.4	4199	79.8	20	100
50-99	307	8.9	376	9.3	458	8.7	69	110
100-499	319	9.3	388	9.6	409 } 602	7.8	208	240
500 plus	75	2.3	110	2.7	193 }	3.7	2085	260
	3434	100	4047	100	5259	100		

Source: U.A.R., Census of Industrial Production, relevant years.

Table 10

Regional Distribution of Establishments, Value-added and Employment in Industry

(Ten Plus Establishments), 1952 and 1966/67

	1952			1966/67		
	Establishments %	Gross Value-added %	Labour-force %	Establishments %	Gross Value-added %	Labour-force %
Greater Cairo	49.3	39.2	37.4	51.6	37.7	44.1
Alexandria	19.2	23.1	25.4	14.6	20.9	20.8
Canal Zone	3.4	10.1	3.1	2.8	7.0	3.6
Total	71.9	72.4	65.9	69.0	65.6	68.5
Lower Egypt	19.8	20.4	25.4	20.6	24.4	23.5
Upper Egypt	8.1	3.5	6.6	10.0	6.6	6.4
Frontier Governorates	0.2	3.7	2.1	0.4	3.4	1.6
Total	28.1	27.6	34.1	31.0	34.4	31.5

Notes and Sources: Greater Cairo includes Guiza and Kalioubia. Lower Egypt excludes Kalioubia and Upper Egypt, Guiza.
Mining is mostly concentrated in the Frontier Governorates.
1952 includes a few public utility establishments which could not be separated from the source. U.A.R., Census of Industrial Production 1966/67, Part II, Tables 7 and 10; and Census of Industrial Production 1952.

that in 1966/67. It shows that a small shift in the regional distribution of industries has taken place between the two periods. The proportion of value-added generated in Greater Cairo, Alexandria, and Canal Zone did fall from 72.4% in 1952 to 65.6% in 1966/67. The emergence of Aswan, as an industrial pole, helped by the discovery of mineral resources and the installation of hydro-electric power stations, does explain one third of this shift. The remaining is attributable, partially, to conscious planning decisions as planners expressed some concern for regional development and decentralisation. But there were no signs of a systematic and significant pursuit of this purpose.

It is also worth noting that concentration of the industry in Cairo and Alexandria refers to a number of factors. These are the size of urban markets, the quality of the infrastructure, the availability of supporting services, and the proximity of other firms suppliers of inputs or consumers of industrial products. Cairo, also, has the additional advantage of its situation at the meeting point of Lower and Middle Egypt; and Alexandria, the facilities of Egypt's largest and most important harbour. Industries located outside the major centres usually process a bulky raw material and are tied to source because the advantages of an urban location do not outweigh transport costs.

D. Structure of Ownership

Before the 1952 Revolution, public ownership of industrial establishments was limited to a petroleum refinery, the Government Press, a few newly established military factories and a number of workshops belonging to various Ministries. After 1953/54 State ownership expanded by steps until 1961 when the big nationalisation waves of private firms placed a large part of modern industry in the public sector. In 1966/67 the public sector generated some 90% of gross value-added in manufacturing establishments employing ten persons or more. Its share of value-added in total manufacturing accounted for

64%, as nearly all establishments in the small scale sector[64] were privately owned. The overwhelming position of the public sector did not change significantly between 1967 and 1970.

However, changes in the structure of ownership can take place through investment. In the mid-1960s the share of private sector in industrial investment seems to have been lower than the value-added share; it later increased to 12%-15%. Given that the capital/output ratio is lower in private than in public enterprise, this may lead to that the relative size of the private sector remained almost constant until 1967 and has tended to increase slightly thereafter.[65]

The dominance of the public sector in industry varied by the size structure of establishments. In 1966/67, a mere 7% of industrial establishments employing 10-49 persons was in the public sector. This proportion increased to 49% in the 50-99 bracket, to 65% in the 100-499 employment bracket, and to 95% in establishments employing 500 persons or more.

The ownership structure by branches of manufacturing shows that the private sector was virtually excluded from all important activities, the "new" intermediate and capital-good industries and the "old" consumer-good industries as well. This can be drawn from Table 11. It reveals that the share of value-added in the private sector was as low as 4% in tobacco, 5% in textiles, and 9% in beverages during the year 1966/67.[66]

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64 This sector is defined, for statistical convenience, to include establishments in the 1-9 employment bracket. See: Central Agency for Public Mobilization and Statistics, Census of Industrial Production, Cairo, 1967 (in Arabic).

65 R. Mabro and S. Radwan, The Industrialisation of Egypt: 1939-1973, op. cit., p. 97.

66 As a rule, private sector share tend to be larger in branches of manufacturing where small workshops and small factories predominate and in thos industries which planners almost entirely neglected in their investment programmes (i.e. leather, wood products, and to some extent, printing).

The private sector in Egyptian industry displayed, after 1963/64, all the characteristics of a residual sector left in control of the small establishments and of five minor industries (leather, furniture, wood, wearing apparel, and printing) some of which accounted for less than 1% of value-added in total manufacturing.

However, the private sector retained a certain vitality. Table 9 suggests a 32% increase in the number of the small establishments (10-49 bracket) of modern manufacturing during the period 1961-1966/67. This expansion, although partially reflects improved coverage in the most recent census, still significant. Although there were no signs of perceptible change in the private "share" of modern manufacturing output, a significant achievement given the adverse conditions in which the private sector found itself after the nationalisations and its very unequal opportunities in relation to public enterprises.

In the late 1960s the private sector had also some export potential especially in leather, food, artcraft goods. It responded within its limited means to the modest liberalisation measures introduced after the Arab-Israeli war of 1967.

E. Changes in the Composition of Output and Employment

One striking feature of Egyptian industrial policy, as briefly outlined earlier, is the change in the industrial structure that it achieved. Table 12 and 13 shows that textiles retained, and sometimes increased, its very large share of both employment and value-added in manufacturing despite the continuous shifts away from consumer-good industries that occurred during the period under study.

The dominant place of textiles in the manufacturing sector of a poor agrarian economy, both before and after the advent of modern industry, is easy to understand. Spinning and weaving, like food processing, provides for basic human wants. Long before the industrial age, market development transformed textiles from a household activity into a

Table 11

Public Sector Share in Gross Value-added in Manufacturing

1966/67 (Percentages)

Manufacturing establishments employing 10 persons and more			All Manufacturing establishments		
Code	Industry	Public Sector share	Code	Industry	Public Sector share
32	Petroleum	100	32	Petroleum	100
37	Electrical machinery	97	22	Tobacco	94
34	Basic metals	96	34	Basic metals	94
22	Tobacco	96	31	Chemicals	94
23	Textiles	95	30	Rubber	93
27	Paper	95	23	Textiles	92
30	Rubber	95	27	Paper	91
31	Chemicals	95	37	Electrical machinery	90
21	Beverages	91	21	Beverages	88
38	Transport equipment	88	36	Non-electrical machinery	75
36	Non-electrical machinery	86	33	Non-metalic products	65
20	Food	81	20	Food	60
35	Metallic products	79	38	Transport equipment	59
33	Non-metallic products	79	35	Metalic products	51
26	Furniture	72	29	Leather	20
25	Wood	68	26	Furniture	20
24	Wearing apparel	66	25	Wood	20
29	Leather	47	24	Wearing apparel	14
28	Printing	16	28	Printing	14

Source: Computed From: Census of Industrial Production 1966/67, Part 1 and 2.

Table 12

Structure of Gross Value Added in Manufacturing Industry (Establishments employing 10 persons and more), 1952, 1960, and 1966/67

Code	Industry			1952		1960		1966/67	
				£E(000's)	%	£E(000's)	%	£E(000's)	%
20	Food	Basic Consumer good industries	Group 1	13553	18.2	25617	16.4	32696	10.7
21	Beverages			3100	4.2	3572	2.3	3799	1.2
22	Tobacco			5484	7.4	9158	5.9	13538	4.4
23	Textiles			24722	33.2	51977	33.3	116376	38.1
24	Wearing apparel			1400	1.9	1560	1.0	3774	1.2
25	Wood	Capital goods industries	Group 2	155	0.2	230	0.1	1110	0.4
26	Furniture			1028	1.3	1829	1.2	2578	0.8
27	Paper			976	1.3	2690	1.7	8641	2.8
28	Printing			2059	2.8	3457	2.2	6138	2.0
29	Leather			425	0.6	607	0.4	1069	0.4
30	Rubber			275	0.4	2617	1.7	2886	0.9
31	Chemicals			5570	7.5	17611	11.3	38917	12.7
32	Petroleum			6358	8.5	10957	7.0	15952	5.2
33	Non-metallic products			3176	4.3	8207	5.3	12912	4.2
34	Basic Metals			1234	1.6	7568	4.9	11995	3.9
35	Metallic products			1283	1.7	1985	1.3	10032	3.3
36	Non-electric machinery		Group 3	174	0.2	688	0.4	3401	1.1
37	Electric Machinery			340	0.4	1515	1.0	9888	3.2
38	Transport equipment			2336	3.1	2706	1.7	6496	2.1
39	Miscellaneous			865	1.2	1413	0.9	3493	1.1
				74513		155964		305691	

Note and Source: Totals may not add up to 100% because of rounding. Central Agency for Public Mobilization and Statistics, Census of Industrial Production, relevant years.

Table 13

Employment by branches of Manufacturing Industry

(ten plus establishments), 1952, 1960, and 1966/67

Code	Industry	1952		1960		1966/67	
		Numbers	%	Numbers	%	Numbers	%
20	Food	47606	18.3	47625	14.8	76484	13.2
21	Beverage	5385	2.1	3732	1.2	5635	1.0
22	Tobacco	10532	4.0	9072	2.8	12238	2.1
23	Textiles	115357	44.3	164163	51.1	246505	42.7
24	Wearing apparel	5706	2.2	4251	1.3	9472	1.6
25	Wood	944	0.4	1285	0.4	3426	0.6
26	Furniture	5614	2.2	6883	2.1	8672	1.5
27	Paper	5245	2.0	6683	2.1	13409	2.3
28	Printing	7235	2.8	8844	2.8	13354	2.3
29	Leather	1995	0.8	1942	0.6	2874	0.5
30	Rubber	186	0.3	2154	0.7	4103	0.7
31	Chemicals	11052	4.2	16906	5.3	46058	8.0
32	Petroleum	4576	1.8	3583	1.1	10192	1.8
33	Non-metallic Products	13946	5.4	12511	3.9	31992	5.5
34	Basic metals	3800	1.5	9453	2.9	22966	4.0
35	Metallic products	7292	2.8	7672	2.4	24928	4.3
36	Non-electric machinery	534	0.2	2597	0.8	8867	1.5
37	Electrical machinery	1095	0.4	1867	0.6	11178	1.9
38	Transport equipment	8746	3.4	6579	2.0	18935	3.3
39	Miscellaneous	2576	1.0	3281	1.0	6605	1.1
		260052		321083		577803	

Notes and Source: (1) Employment refers to weekly paid workers and salaried employees; owners of factories are excluded.
(2) Totals may not add up to 100% because of rounding.
Central Agency for Public Mobilization and Statistics, Census of Industrial Production, relevant years.

specialised craft. And textiles usually are like food, one of the first sectors to be taken up by modern industry in agrarian LDCs.[67]

Thus, patterns of development are not absolutely identical everywhere. In Egypt a restriction on the freedom of the government to raise tariff rates above 8% delayed the emergence of modern textile manufacturing. But, once the restriction was lifted, textiles played perhaps a more important role in Egypt than in many LDCs because cotton is the country's main primary resource. Cotton appeared to be the obvious candidate for industrialisation and continued to be treated as such throughout. After the introduction of tariffs in 1930 the private sector devoted a significant part of its industrial investment to textiles, and later the government, through planning and import restrictions, maintained and enhanced its place in Egyptian manufacturing. A significant part of recent Egyptian industrialisation can be interpreted as an attempt to increase domestic value-added by extending the production process a few stages beyond agriculture, ginning, and pressing - taking advantage of the potential offered by the size of the domestic market and exports.

Egyptian industrialisation was similar to the general patterns of industrialisation in LDCs in one respect, namely the decline in the share of basic consumer goods industries. However, as the shift did not affect textiles (the major component of this group) the decline of other branches was very pronounced. The share of basic consumer goods industries (food, beverages, tobacco, textiles, and clothing) had declined from 64.8% to 55.6% between 1952 and 1966/67 while the share of chemicals and other intermediate goods increased. The shares

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67 This is because of the availability of raw materials, the market size, and the characteristics (labour intensity, adaptability) of its technology.

of both food and tobacco in manufacturing gross value-added fell by 41% between the two years and that of beverages by 71%. The rate of relative decline of the food industry was much more significant after 1960 than before.

The rapid decline in the value-added share of the food industry, both a cause and effect of a low rate of growth, deserves some comment. The absence of significant mineral resources in Egypt and the significance of agriculture may lead us to expect a pattern of industrial development in which agricultural industries (such as food and textiles) play a major part. The expansion of the food industry was in fact constrained by supply conditions in agriculture and by the characteristics of local demand for its products. Egypt, since the Second World War, has increasingly become a net importer of foodstuffs. Though exports of rice, fruit, and vegetables have expanded, the food trade balance worsened because of greater increases in imports of dairy products, cereals, meat, and other goods. For many food industries, the constraint is on the input side. They cannot expand faster than agricultural production of inputs (e.g. sugar cane, livestock products such as milk), for which no export surplus exists. Two important food industries (sugar and dairy products) cannot break this constraint by importing their inputs. Transport and storage costs would make such an attempt uneconomical.

The second interesting feature is the emergence of "chemicals" as the second most important industry in terms of value-added. "Chemicals" comprises producer-good industries with strong forward linkages with agriculture through sales of fertilizers and pesticides, and manufacturing which it supplies with alcohol, acids, detergents, liquified gases, paints, etc. It also has forward linkages with such consumer goods industries as pharmaceuticals, soap, cosmetics, etc., which enjoy high income elasticities of demand. These factors seem to have contributed

to the rapid development of the industry and explain its privileged place in the import-substitution strategy. Its growth potential remains considerable. Import-substitution in the fertilizer industry, for example, is far from complete. In 1973 domestic output amounted to 675,000 tons and another 400,000 tons were imported. New domestic discoveries of natural gases in the Northern Delta and recent increases in the world price of petro-chemicals have reversed the cost-benefit calculations of fertilizer projects, turning them into profitable undertakings. Room for expansion is not limited to import substitution. The consumption of fertilizers in Egyptian agriculture has been growing at a fast rate since World War II.[68] The High Dam, because of its effect on soil fertility as well as the land reclamation that it gives rise to may result in even higher rates of growth of fertilizer consumption in the future. Other branches of the chemical industry have growth potential and a resumption of rapid industrialisation in a new era of inter-Arab co-operation will entail further deepening of the industrial structure and the expansion of the intermediate market for chemicals in Egyptian manufacturing.

The third interesting feature of structural changes in Egypt has been the pattern of sequential development in which a fast expansion of "intermediate" industries (Group 2 in Table 12) precedes that of the "capital-good/consumer-durable" set (Group 3 in Table 12). The share of aggregate value-added of Group 2 seems to have stagnated in the 1960s, having increased between 1952 and 1960 from 30.2% to 37.1%. This was followed by an increase in the share of Group 3 from 4% to 7.5% between 1960 and 1966/67, after an earlier decline in the 1950s.

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68 Fourfold increase between 1947 and 1967. See: Samir Radwan, Capital Formation in Egyptian Industry and Agriculture: 1882-1967, Ph.D. thesis, London, 1974, p. 271.

These observations do not amount to a general pattern of industrialisation. Nor can we say that the year 1960 is a turning-point between two irreversible stages of development. As the value-added share of the Group 3 is still very small a reversal in the pattern could easily occur. Rapid growth in one of the large "intermediate" industries (such as chemicals or petroleum refining) would be sufficient to effect the reversal even if the "capital-good/consumer-durable" set continued to expand at a significant rate. Consumer durables (cars and car repairs) are the largest component of this group since the production of capital equipment is not yet significant. The interesting feature of the structural changes that have taken place is that a significant "capital-good" industry did not emerge during the period in which "intermediate" industries lost their growth momentum. The pattern of changes after 1960 is one in which the continuing relative decline in certain "basic consumer-good" industries was largely compensated for by increases in the share of other consumer-good industries (textiles and durables).

The increasing degree of industrial diversification noted above, which was brought about as a result of the new industrial policy of the 1960s, was not confined to the home market; it also affected the pattern of Egyptian exports. In 1952/53 raw cotton accounted for 84% of merchandise exports, agricultural products for more than 92%. These shares fell by 1959/60 to 70% and 77% respectively, and the trend continued throughout the 1960s so that by the end of the decade they were no more than 49% and 68% respectively.[69]

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[69] Central Agency for Public Mobilization and Statistics, Statistical Indicators, various issues. These points will be discussed in more detail in Chapter 8.

However, the diversification of exports did not mean the emergence of many new products but rather an increase in the share of existing exports at the expense of cotton. The composition of the 1968 basket is more balanced with rice, cotton yarn, textiles, and petroleum all accounting for significant shares. Export diversification related both to the agricultural basket where a number of minor products increased their share and to the ratio of agricultural/non-agricultural goods which rose significantly.[70]

4.4. SOCIAL POLICIES

No modern government is entirely uninterested in social welfare, including labour and employment conditions, education and health. This section will be confined to an analysis of major changes in the labour policy during the period under study. Other areas of social policy such as education, health, housing etc., will be taken up in the next chapter.

After the 1952 Revolution strikes became illegal, but an Advisory Council for Labour was reconstituted to include stronger representation from trade unions.[71] The Revolutionary Goverrment realised that unions need not be a disruptive influence. They could promote stable industrial relations and help to raise productivity.[72] Therefore, the leaders of the Revolution of 1952 encouraged their formation, and amended the Trades Union Act of 1942 in order to permit additional categories of workers, including agricultural labourers, to organise.

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70 Ibid.

71 U.S. Department of Labour, Summary of the Labour Situation in Egypt, 1955, p. 8.

72 Information Department, The Permanent Council for Public Welfare Services, Cairo, 1955, pp. 35-36.

The new law also allowed for confederations of unions and stipulated that if 60% of employees in any given company belonged to a union, then the remainder could be compelled to join. Union membership rose rapidly after 1952, but the unions had little freedom of action and were subject to financial, political and administrative controls, being organised in the same pyramidal structure as the co-operatives and the whole of the public sector. Though the old regime was not particularly liberal with workers and forbade certain groups (government employees) from forming unions, important strikes did take place, especially in 1946 and 1948. And partly as a consequence of strikes and trade union activities the average real industrial wages increased between 1946 and 1952 by around 45%.[73]

Under a series of substantive amendments to the law of Individual Contracts of Service, 1944, the Egyptian government raised the industrial wage from £E0.100 a day in 1944 to £E0.125 in 1950, and to £Eo.250 in 1953.[74] Other benefits were also granted for industrial workers. In 1955 the government introduced a scheme for social insurance, prepared by the Advisory Council on Labour, in order to replace the inoperative Act of 1950, which had provided public assistance for the dependents of sick or deceased industrial workers. The new scheme covered workers in Cairo and Alexandria employed by firms with more than fifty workers. It was financed not by the state but by compulsory contributions from employers and employees, whose premiums were collected and invested by an autonomous public body, the Institute for Workers' Savings and Insurance. Out of the accumulated fund pensions were payable to the

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73 R. Mabro, 'Industrial Growth, Agricultural Under-Employment and the Lewis Model, The Egyptian Case: 1937-1965", in Journal of Development Studies, Vol. 3, No. 4, July 1967, pp. 333-335.

74 Information Department, Social Development Under the New Regime, Cairo, 1954, p. 19.

wives and children of sick, disabled and deceased workers.[75] Sick pay, indemnities for termination of employment (whether voluntary or involuntary), and the length of paid holidays were all increased, and the employer's right to dismiss workers made subject to new restrictions.

Having curbed trade union activities in Egypt, the Egyptian government attempted to placate the urban industrial labour force through changes in labour laws. In 1961 and 1962, major changes in labour legislation and policies were introduced:[76] a profit-sharing scheme compelled firms to distribute 25% of their net profits (after various deductions including a 5% compulsory purchase of State bonds) to the benefit of their employees. Two-fifths of the amount was to be paid in cash, with an upper limit of £E50 per person; two-fifths to a welfare fund jointly managed by employers and workers; one-fifth to a housing fund. Later, these provisions were slightly modified, with two-fifths of the amount payable to a state insurance scheme and one-fifth to the firm welfare fund; cash payments continued on the same basis but payments to the housing fund were abolished.[77]

Membership of company boards was reorganised; membership was limited to seven including two elected representatives of the employees, one weekly paid worker and one salaried employee.[78] Hours of work were reduced to 42 hours per week at the old wage.[79] Workers and employees were forbidden to hold two jobs, inter-firm mobility became difficult,

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75 Ministry of Social Affairs, Social Welfare in Egypt, Cairo, 1956, pp. 16-17 (in Arabic).

76 Central Agency for Public Mobilisation and Statistics, UAR Yearbook, 1962, p. 232.

77 Central Agency for Public Mobilisation and Statistics, Yearbook, 1967.

78 Laws 114 of 1961 and 141 of 1963.

79 Law 175 of 1962.

especially in the public sector where the former employer's permission had to be sought before the transfer, and overtime work was (in principle) abolished. The purpose of these stipulations was mainly to create more employment.

Social insurance became compulsory and the employer's contribution was raised from 7% to 17% of the basic wage. Manual workers were guaranteed 14 days paid holiday each year in addition to five days of public holidays. Sickness leave was increased to 180 days a year during which period the worker entitled to 70%-80% of his basic wage.[80] Dismissals became almost unknown, especially between 1963 and 1966 when the "Arab Socialist Union"[81] was at its most active, defending workers against employers in both the private and the public sectors. Given absolute security of tenure workers tended to abuse the sick leave regulations and in 1966 the government made dismissals easier in cases of gross misconduct. At the same time more strength medical control were introduced for sick leave.

The uniform wage schedules that had been introduced applied throughout the public sector. These schedules included eleven grades and promotion within and between the grades (save at the higher managerial level) depended uniquely on length of service.

These laws which were introduced in the early years of the Revolution, remained effective throughout the period under study, with very few amendments. They represented at the time of the "Socialist

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80 Central Agency for Public Mobilisation and Statistics, Statistics on Employment, Wages, and Hours of Work, Cairo, various issues (in Arabic).

81 The Arab Socialist Union represents the socialist vanguard which leads the people, expresses their will, directs and controls national action within the framework of the principles of the national Charter. The A.S.U. realises a socialist revolution that is a revolution of the working people. It safeguards the minimum representation for workers and farmers in all popular and political formations at all levels, thus guaranteeing that at least 50% of the membership of the A.S.U. itself is made up of workers and farmers. See: Central Agency for Public Mobilisation and Statistics, Statistical Yearbook, October 1974, pp. 253-259.

Revolution" a significant, but once and for all, improvement in labour conditions. The insurance scheme was the most important reform that was introduced, giving rise to deferred benefits.

One of the outstanding changes, mentioned above, may be seen from Table 14. This table shows that all types of manufacturing employment seem to have significantly increased, both in absolute and relative terms, except for the "itinerant and rural" category. Little can be said about this latter group because estimates of its size are derived as a residual.

Table 14 also shows that average incomes of weekly paid workers have increased by a larger percentage than those of employees. Deflating by the official cost of living index,[82] increases in average real income between 1952 and 1966/67 were of the order of 44% for workers and only 8% for employees. Changes in the skill-structure of the labour force in a period of significant industrialization account for part of the increase in the average income of workers. Excess supply of secondary school and university leavers whom the government employed as clerks in the public sector seems to have dampened the rise of average incomes for employees. The average gross income of employers and self-employed was relatively high in small manufacturing (£E280 per annum) compared to average manual earnings of £E169 in large sector industry and £E60 in smaller establishments. These differentials presumably involve returns to skills, entrepreneurship, and capital equipment. Certain establishments may also have enjoyed the small monopolistic advantage granted by product differentiation. Finally, increases in real income in the modern sector are understated when compared with our previous calculations because social benefits and

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[82] Cost of living index for 1952/53 is 100, and for 1966/67, 133.

Table 14

Employment and Average Annual Income of Non-Profit-earners

(Workers & Employees), in Manufacturing 1952 and 1966/67

	Labour Force (000's)		Share of National Labour Force (%)		Average Annual Income (£E's)	
	1952	1966/67	1952	1966/67	1952	1966/67
Modern Sector:						
Employees	32	80	0.45	0.95	312	450(575)
Workers	250	517	3.50	6.08	88	169(201)
Small-scale:						
Self-employed	120	170	1.70	2.00	120	280
Workers	80	115	1.10	1.35	32	60
Itinerant and Rural	80	90	1.10	1.05	32	60

Note and Source: Fringe benefits and employer's contribution to social insurances are shown by figures between brackets. Computed From: Censuses of Industrial Production, Various Issues.

social insurance were not included. Although they do not add to the present disposable income of employees and workers, they represent a significant welfare gain.

To sum up the Socialist Laws of 1961 and 1962 were accompanied by an "employment drive". The government, worried by unemployment especially among secondary school leavers and university leavers, committed itself to appoint all graduates on termination of their studies to jobs in the administration or in the public sector. It also forced public sector companies into expanding the number of jobs at all levels, from the shop floor to the top of the administrative hierarchy. Initially, the employment drive was justified on the grounds that it would compensate for the shortfall in labour inputs resulting from the reduction of hours and other measures. The government believed that many industrial firms under new public management would be able to organise extra shifts and absorb productively the additional workers and employees. But there was no need to employ new workers for extra shifts since, as mentioned above, that the ban on overtime was lifted in practice if not in law. Furthermore, increasing balance of payment difficulties led to the emergence of excess capacity. The employment drive turned out to be a burden on industry and should be interpreted as a social welfare policy. Its implications for the assessment of industrial performance are considerable as we shall see in the next section.

A. Changes in Labour Productivity

Partial measures of productivity growth are concerned with the relationship between output growth and variations in the quantity of a specific input. They attribute changes in output, but not the cause of these changes, to the factors of production singled out. The index of labour productivity growth in industry by itself, reflects the contribution of investment and the effect of structural changes in industry

rather than improvements in the quality of labour in "ceteris paribus" conditions.

Table 15 shows the indices and average annual rates of growth of labour productivity classified by two measures one of output per man and one of output per man-hour, during the period 1945-1969/70.[83]

One of the economic characteristics of production in Egyptian industry as drawn from Table 15, is the fairly high average rates of labour productivity growth during the period 1945-1962. These increases, although very partial sign of successful performance, were associated with significant increases in capital intensity,[84] and structural changes.[85] Movements in the level of output per man and man-hour after 1962 are in sharp contrast with the previous period. The level of output per man did fall by 14.8% and that of output per hour by 27.9% between 1963/64 and 1966/67. Both continued to decline, though at a much slower rate in the last years of the decade. This sudden turn accounts for the zero average rate of growth of output per man during

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83 This period is subdivided into two shorter runs. The first sub-period is 1945-1962, and the second is 1963/64-1969/70. The choice of 1962 as a dividing year is justified by a minor statistical reason that is the discontinuity in the Census of Industrial Production series, and by a substantial cause: the impact of the "employment drive" felt after 1962. The "employment drive" affected the relationship between output and labour input growth. It caused changes in the labour series and effectively broke the continuum of both labour input and productivity indices.

84 Indices of capital intensity for the years 1945, 1954, and 1962 are 100, 168, and 199 respectively. See: R. Mabro and S. Radwan, The Industrialisation of Egypt: 1939-1973, op. cit., Table 10.1, p. 170.

85 See section 4.3. of this chapter.

Table 15

Indices and Average Annual Rates of Growth of Labour Productivity

1945-1970

Years	Indices		Average Annual Rates of Growth		
	Output Per man	Output Per man-hour	Periods	Output Per man	Output Per man-hour
1945	100.0	100.0			
1954	156.2	153.3			
1962	205.0	222.5	1945-1962	4.3	4.8
1963/64	100.0	100.0			
1966/67	85.2	72.1			
1969/70	79.0	71.0	1963/64-69/70	-3.9	-5.5
1952	100.0	100.0			
1962	155.0	168.3	1952-1962	4.5	5.3
1959	100.0	100.0			
1964/65	99.1	112.7	1959/60-64/65	0	2.3

Source: Compiled From: R. Mabro and S. Radwan, The Industrialization of Egypt: 1939-1973, Oxford, 1976, Table 8.6.

the period 1959/60-1964/65.[86]

A few remarks concerning the data base in Table 15 are in order. One of the main points to explain is the behaviour of hours of work between 1963 and 1970. One possible line of explanation for the rise from 44 hours in 1964 to the higher level that obtained in later years relates to the quality of statistics.

Data in Table 15 refers to hours paid for rather than hours actually worked. The divergence between these two concepts is important when industry suffers from increases in excess capacity, if the power of firms to declare workers redundant is constrained by law. Permanent workers would be physically in the factory and paid for the normal hours even if there was little or no work to do. An increase in the discrepancy between hours paid for and hours worked would mean that the growth of labour inputs to production in the 1960s is overstated by data in Table 15.

One of the possible explanations for the fall of average number of hours paid for to 44 per week in 1963-1964 can be attributed to the application of the Socialist Laws which reduced the length of the normal working week, at the old wage, and drastically limited the right to work overtime. But, however, this does not elucidate why hours paid for should have increased after 1964 while output stagnating. Two reasons explains that.[87] The first is payment for extra hours not

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86 The "employment drive" explains only part of the fall in output per man-hour. The disturbing feature is that after 1964, while output was stagnant and employment expanding, average hours have risen to a peak of some 52-53 hours a week in 1965 and 1966 then stabilised later around 49-50 hours. An "employment drive" need not affect too adversely the level of output per man-hour, though it will necessarily lower output per man, if hours of work are reduced to accommodate the increase in numbers.

87 This is a result of interviews with managers of public sector firms. See: R. Mabro and S. Radwan, op. cit., p. 149.

actually worked in some public sector firms to compensate workers whose earnings had fallen in the preceeding year as a result of the "employment drive". The second is that the flow of imports of raw materials, semi-finished goods, and spare parts for industry became more and more erratic after 1963.

It is also worth noting that delays and restrictions on imports of spare parts and pieces of equipment must have affected the capital stock and increased recourse to labour-intensive processes. Another factor is a deterioration in industrial discipline especially between 1963 and 1966 when the "Arab Socialist Union" was at its most active, defending workers against employers. The Socialist Laws, whose objectives were the betterment of workers' conditions and an enhanced respect of their dignity, led to some abuse of the new privileges. This deterioration in the relationship between management and labour is likely to have had adverse effects on labour productivity. However, after 1966, measures were taken to correct certain legal divergence.

To sum up, the fall in output per man-hour during the period 1963/64-1969/70 cannot be interpreted without qualification as a decline in the productivity of an actual unit of labour inputs. Movements in output per man-hour worked might have been different from movements in output per man-hour paid for. The problem of Egyptian industry after 1962 was one of increasing labour costs arising from organisational defects, inefficiencies, redistributional policies, supply bottlenecks, a deterioration of relationships within firms, and some other factors. Finally, the drop in the indices of "labour productivity" reflects, on general, the poor state of the economy in the years after 1964

4.5. BRIEF EVALUATION OF THE PACKAGE OF INDUSTRIAL POLICIES USED

An evaluation of the industrial policy pursued in Egypt up to the mid-fifties indicates that although it made valuable contributions it lacked cohesion and continuity. This first phase of industrial policy witnessed unco-ordinated and often contradictory measures in terms of their possible impact on industry. For example, while industry was in this early period subject to excessive tax rates, investment in agriculture and residential construction was treated much more favourably. At the time, industry faced a number of problems which were either neglected or overlooked. These were:

(i) An absence of secure and permanent sources of finance;

(ii) A dependence on extensive protectionist policies while kept costs above standard levels;

(iii) The neglect of modern techniques of production.

While the role played by the State in industry in the 1940s and early 1950s took the form of "promotional" participation in some industries, since 1957 it has emerged as almost the sole industrial entrepreneur on a large scale. As a consequence the share of industry in total government expenditure (current and development) increased from 7.5% in 1950/51 to 24% in 1969/70.

Prior to the First Five-Year Industrialisation Programme of 1957, a small public sector emerged as a result of state investment in a few industries. Government industrial policy, therefore, was directed mainly towards encouraging private capital to participate in new ventures, and to carry on modernization and expansion of existing capital. Hence the varied nature of the legislation of that period. Following that line of policy, the National Production Council was created in late 1952. At the same time the private sector was being

encouraged by several direct and indirect means, fiscal policy was being developed in the later 1960s towards giving more financial autonomy to public corporations. The "services" budget of the government was separated from the "works" budget and as a result the losses of the publicly owned enterprises were no longer to be automatically subsidised. Under the old system, profits made by the public sector plants had gone straight back to the Treasury, which had also made good their losses. Now enterprises would be expected to finance operations, including development, from their own profits, and by recourse to the banking system.

The banking system was reorganised into five big banks each serving a particular branch or branches of economic activity.[88] In addition to the commercial banks the private sector was able to draw upon the resources of the Industrial Bank.

Legislation for the broader objective of financing development projects was, also, enacted in 1969, whereby an ad-valorem duty of 10% of the value of all imports (except some foodstuffs) was imposed for the benefit of the Ministry of the Treasury.

Since the introduction of industrial planning the efforts of the

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88 The system of banking, in which branches of foreign commercial banks played an important role, has been radically changed. In 1956 measures were taken to Egyptianize all banks. On January 15 1957 a law was enacted making all banks joint-stock companies. On 11 Feburary 1960, the National Bank of Egypt (which was also the Central Bank) and Bank Misr (the leading commercial bank) were nationalised. On 1 January 1961 the law that created the Central Bank of Egypt as an institution separate from the National Bank came into force, and the National Bank became exclusively a Commercial Bank. On 20 July 1961, the complete nationalisation of all banks and insurance companies was effected. The period since then has been one of bank mergers and as a result the National Bank of Egypt, Bank Misr, Bank of Alexandria, Bank of Cairo, and Bank of Port-Said now constitute the commercial banking system of the country.

See: Central Bank of Egypt, Credit and Banking Development in 1960, Cairo; and Central Bank of Egypt, A Report of 1970/71, November 25, 1971 (in Arabic).

state have been directed towards increasing the volume of investment, particularly in those areas where, because of the risks involved, private enterprise was not prepared to invest.

These industrial policies were an integrated part of a national economic strategy which included tariff reform. This latter also provided an important source of budget revenue for financing development projects. However, the development of the public sector, which has changed the whole structure and pattern of Egyptian economy, has also changed the role of the tariff structure. Although customs duties still compose a principal source of revenue their importance has declined relative to other items of public revenue. The protective function of the tariff has also declined in importance as the public sector because the sole importer, and its import policy was designed to conform with the comprehensive development plan. Thus led to the introduction of a unified tariff rate in January 1962, except for a limited number of commodities such as tobacco.

It is worth noting that state promotion in the field of industrial exports reflected a conscious commitment to increase foreign exchange resources through industry itself but the industrial policies pursued in the earlier periods seem to have jeopardized the attainment of this objective. The "extensive" type of industrial growth, generally employed in Egypt until recently, made it difficult to combine import substitution with the introduction and expansion of a substantial flow of exports of manufactures. Indeed this type of industrial growth might have made it more difficult to achieve industrial integration of the Arab economies.

During the period under review the objectives of industrial policy have not always been stated clearly and unambiguously. But even when they have some of the measures undertaken have not been sufficiently related to ensure success in attaining the desired objective.

The desire for self-sufficiency and the adoption of import substitution in order to attain this meant that the optimum size of the firm was often overlooked. Import-substitution policy, combined with a policy of protection from foreign competition encouraged high cost production and excessive profits. Competitiveness on export markets was either impossible or required financial aid from public funds. Selectivity does not appear to have been pursued according to rational economic criteria.

Finally, it is worth noting that while attention was paid to the economic and social aspects of industrial location in policy declarations; the policies actually pursued against their considerations. The huge industrial estate represented by the three governorates of Cairo, Giza, and Kalyoubia accounted for fourty two per cent of total industrial investments in 1970. Together with Alexandria they accounted for about two-thirds of total investments. In other words, the past industrial development did not contribute to the integration of the internal economy, nor did it reduce the economic unequalities of the component regions.

CONCLUSION

It would be a gross over-simplification to say that there has been no basic industrial policy during the period covered by this study. It might be more appropriate to say that industrial policy emerged during this period. Although several industrial policy instruments existed they were not sufficiently co-ordinated and integrated as to constitute a coherent policy. This did not, however, present a rapid and broadly based growth of the industrial sector.

The protectionist policy imposed by the external sector's limitations (inability to export) and by the import substitution needs deriving therefrom, has completely protected it from foreign competition. It

also combined to produce a relatively high cost and price level for many manufactured products.

CHAPTER 5

STRUCTURE AND THE CHANGING ROLE OF THE GOVERNMENT SECTOR IN EGYPT

5.1. INTRODUCTION

As an earlier chapter shows the most extensive redistribution of wealth and income accomplished in Egypt since the Revolution of 1952 has occurred within the agricultural sector by means of redistribution of land ownership and land holdings. Other policies included creating the integrated co-operative system to provide various inputs, credit, machinery and marketing the crops. Other policies also aimed to improve the condition of agricultural labourers and the living conditions in the rural areas.

Outside the agricultural sector, measures which directly alter the distribution of income included rent controls, minimum wage legislation, and in 1961 the introduction of profit sharing schemes. Some redistribution of income has also occurred indirectly through the provision of free or subsidised collective services financed by progressive taxation. In addition the government has achieved greater social justice through its provision of better educational opportunities at all levels, its expansion of the health services sector and its expansion of the house building programme. Positive employment policies have been pursued but at the same time the state has provided increased security against old age, sickness and unemployment.

The purpose of this chapter is to analyse the increasing direct involvement of the Egyptian government in the social and economic life of the country, and the revenue structure used to finance its expenditures. Particular attention is also paid to government control over investment. Since one of the aims of economic development is to

create productive jobs, widen the scope of employment opportunities available to members of the economy and resorb unemployment, this chapter also examines the sectoral pattern of employment and labour supply during the period under study.

5.2. STRUCTURE AND SIZE OF BUDGET

Before 1952/53 there was only one ordinary budget and a very small number of annexed budgets. The railways and the petroleum authority used to be departments of government and included in the ordinary budget. However, in 1958/59 both became independent with separate budgets. During the fiscal years 1953/54 the Development Budget was introduced listing a number of projects to be carried out by the government as a programme for economic development.

At the time of the large scale nationalisation in 1961, the budget consisted of a Current Budget, a Development Budget and several annexed budgets for the public services. The most comprehensive changes inthe budgetary system were introduced in 1962/63. Thereafter all expenditures and revenues came under two main budgets: the Services Budget and the Business (Enterprises) Budget, with each budget's expenditures divided into current and investment expenditures.

As from 1968/69, the budgetary estimates have included an additional section entitled "The Investment Fund". On the revenue side, the fund is credited with the revenue surpluses of public sector enterprises, the capital reserves of public authorities and organisations, loans from local savings institutions and other funds borrowed at home and abroad. These resources are mainly intended for the financing of capital formation in the public sector, though they may be drawn upon to meet the loan repayments and interest charges relating to local and foreign loans. Moreover, the fund's resources may be used to finance the current deficits of the Services and Business Budgets.

To supplement the resources of the Fund, the Treasury, with the agreement of the Central Bank, is empowered to issue bonds for sale to commercial banks and other economic units in both the public and the private sectors. The terms of issue are determined by the "Planning and Economic Commission". However, there has been a rise in the annexed budgets over the period 1952/53-1961/62, and an increase in the Development Budget in 1960/61.[1]

However, given the budgetary changes that have taken place it is very difficult to deduce from the table the impact of the public sector on the level of activity. After the revolution of 1952 the government initiated a policy of financial austerity, but despite this total expenditures rose rapidly in connection with development and defence, especially after 1955/56.

In February 1958 Egypt entered into the Union with Syria and a Unified Budget was introduced covering such matters as foreign affairs and defence etc.

5.3. GOVERNMENT EXPENDITURES

A detailed restatement of government budgetary expenditures, cross-classified according to the economic and functional categories, is available from 1950/51.[2] Government expenditure totalled £E191 million in 1950/51 and thereafter it increased, with only a brief respite in 1952/53 when the revolutionary government tried to restore order to the disturbed financial situation. By 1959/60 government expenditure had reached £E465 million, and by 1969/70 £E1,991 million.

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[1] See Appendix 1, Table 6.

[2] See Appendix 1, Table 7.

A twelve-fold increase in expenditure in productive sectors between 1950 and 1960 accounts for a large part of this growth in government expenditure. Within the productive sector itself the programmes of nationalisation and the development of the electricity supply industry were responsible for a good deal of the increase.

From the beginning the new government began to tackle the housing problem. One of its objectives was to provide inexpensive dwellings for the poorer sections of the urban population and a public company (later an organisation), was created for that purpose in 1953/54. The scheme resembles the French HLM (haitation à loyer modéré) and was actively implemented in the 1950s. Thousands of flats were built in Cairo. The scheme was extended to other areas and the organisation played an important role in the reconstruction of the Arab quarter in Port-Said which had been bombed during the Suez War. The "habitations popularies" benefited a small proportion of the low income urban industrial workers and low grade government clerks, and the like.[3] During the 1960s, public investment in cheap urban housing was at an average annual level of £E5 to £E6 million, representing an annual addition of 8,000 to 10,000 rooms.[4] The public sector invested a similar amount on "medium level" housing each year, mainly for officials and public sector employees. Most of the rural housing programmes related to either newly reclaimed areas or to the Nubian resettlement schemes.[5] In the 1960s government expenditure on housing declined and unfortunately this coincided with a similar decline in private investment in housing between 1960 and 1967.

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[3] R. Mabro, "The Egyptian Economy, 1952-1972", op. cit., p. 162.

[4] Central Agency for Public Mobilisation and Statistics, Statistical Indicators, 1952-1970, op. cit., p. 205 (in Arabic).

[5] See Appendix 4 on "Housing Conditions in Rural Areas".

The state current expenditures on education and research increased from some £E23 million in 1952/53 (less than 3% of GDP) to about £E126 million in 1969/70 (almost 5% of GDP). Public investment expenditures in education similarly increased from about £E2.2 million in 1952/53 to £E33.3 million in 1964/65, a remarkable thirteenfold increase. But after the last year of the First Plan (1964/65), the level of investment fluctuated around £E25 million a year representing between 6% to 8% of total annual investment in the economy.[6]

In the past education had been confined to those who could afford to pay the fees. In the Census of 1937, the proportion of educated people was about 15%, increasing to 25% in the Census of 1947.[7] However, the government of the Revolution paid special attention to the development of the different stages of education in order to meet the State's requirements in all fields. Thus, the government endeavoured to provide free educational services at all levels, even in the universities, because it believed access to education to be a right of every citizen, and not just the rich.

This new educational policy led to an increase in the enrolment of pupils and students at various educational levels. The fastest growth was in secondary technical education, where the number of pupils increased from 33,366 in 1952/53 to 271,638 in 1970/71.[8] However, this category is misleading since it comprises all types of non-classical secondary education, with a tendency for commercial education to dominate the group. The ratio of students enrolled in vocational

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6 Ministry of Planning, Follow-up Reports, various issues (in Arabic).

7 Central Agency for Public Mobilisation and Statistics, Population and Development, Cairo, June 1969, p. 203.

8 Central Agency for Public Mobilisation and Statistics, Population and Development, Cairo, June 1973, p. 220.

schools to total enrolment in preparatory and secondary schools increased from 14.2% in 1955/56 to 19.5% in 1970/71.[9]

University education expanded faster than any other form of secondary education. Since graduate unemployment might be politically dangerous, as well as economically and socially undesirable, the government pursued a policy of guaranteeing all graduates a job in either the administrative or public sector. This being so the private returns to higher education were both certain and substantial and there was therefore an increased demand for it.

One of the outstanding changes, mentioned above, is that between 1952 and 1966/67 government civilian employment increased from an estimated 325,000 in 1952 to 1,035,000 in 1966/67.[10] The share of government civilian employment in the country's labour force rose from 9.6% to 15.4%, its share of the national income, from 8.6% to 13%. Average annual income (at current prices) increased from £E240 to £E323 between the two years.[11] Changes in the grade composition of the civil service, however, have significantly affected the average. A disaggregated analysis of changes in government wage scales indicates that significant increases in income accrued in the lower half of the scale. The maximum improvement occurred in "grade nine" where real incomes increased by 85% over the period 1952 to 1966/67. However, the real value of nominal salaries at the top of the scale fell by some

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[9] Ibid.

[10] Ministry of Treasury, Budgets and Budget Reports, various issues.

[11] The figures refer to the government employment.

10% to 20% between 1952 and 1966/67.[12]

Nominal salaries do not represent the whole income of top civil servants. Many supplement their earnings with fees for membership of committees, trusteeships of sequestrated properties, travel and other allowances. The socialist laws which forbade holding of two jobs have never been seriously applied. And the public sector provides some civil servants with many sources of semi-illicit. Taking into account the increases in fringe benefits, real incomes of top civil servants probably increased substantially over the period 1952-1977. Finally, it is worth noting that the army (which is an important sector of government employment) increased its relative share in the total labour force and that the real income of officers increased faster than that of any salaried group in the economy after 1952.

In addition the government has achieved greater social justice through its expansion of the health services sector. Current public expenditures on health increased at an average rate of almost 11% per year between 1952/53 and 1959/60. Despite this rate of increase the estimated expenditure on health in 1969/70, which was £E38 million, was still much lower than the education budget.[13] Between 1952 and

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12 Changes in government salary scales could be interpreted in an alternative way. It is possible to distinguish two groups: the manual worker and the civil servant. The manual worker's prospects when he takes employment are constrained by a narrow promotional ladder. Salary rises in 1964 raised all wages in this ladder. The expected lifetime earnings of a manual worker were higher in 1966/67 than in 1952 (all at 1952 prices). The university graduate usually enters at "grade six" and he may legitimately expect to climb to the top of the ladder during his lifetime. Expected life earnings on these assumptions did not rise very much between 1952 and 1966/67 as the gains that accrued at the beginning of his career would be largely lost towards the end. See: R. Mabro, "The Egyptian Economy, 1952-72", op. cit., p. 224.

13 Ministry of Planning, "Follow-up Reports", op. cit.

1970 the number of hospital beds almost doubled from 35,744 to 70,932.[14] This meant that in 1970 there were 2.1 hospital beds per thousands population, a relatively low average ratio and one which concealed considerable differences between rural and urban areas. All rural health units (i.e. rural health centres, combined units, social centres, comprehensive treatment units, and rural health units) provided only 8,149 beds in 1969/70. But the number of these units increased rapidly in the 1960s, from 789 in 1961/62 to 1,786 in 1969/70.[15] Per capita consumption of medicines increased at an average rate of between 1% and 2% per annum, and in this context the number of chemist shops (almost all in the private sector) increased from 680 in 1952/53 to 1,752 in 1969/70.[16]

The Egyptian government's attitude towards family planning and birth control was rather timid in the 1950s when the Revolution expected that economic development would eventually provide an answer to the population problem. The government did not take action to initiate a fall in the birth rate until the early 1960s when the economic difficulties facing the country began to accumulate.[17] In 1962 a population policy was announced, and a national family planning programme was introduced in 1965. From February 1966 onwards the pill was distributed free to public health centres throughout the

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[14] Central Agency for Public Mobilisation and Statistics, Statistical Abstract of Arab Republic of Egypt, 1952-1972, Cairo, June 1973, p. 108.

[15] Ibid., p. 110.

[16] Central Agency for Public Mobilization and Statistics, Statistical Handbook, op. cit., p. 156.

[17] Rate of birth in 1956 and 1960 were 40.7 and 43.1 respectively. See: Central Agency for Public Mobilisation and Statistics, "Population and Development", op. cit., p. 47.

country, and by 1970/71 it was estimated that 300,000 pill-cycles were being distributed every month, and 120,000 loops inserted per year.[18] But this cannot account for the apparent fall in the birth rate around 1964.[19]

During the period 1950/51-1962/63 expenditure on organising services (i.e. presidential and supervision, commercial and financial, and defence, security and justice) increased four fold. Here the largest item was defence. In 1961/62 the budget of the Ministry of War amounted to £E88.6 million, to which should be added a considerable part of the expenditure of the Organisation for Military factories, £E22.7 million, and possibly a few other small items. In all defence expenditure in 1961/62 was probably over £E100 million, or 7% of GNP, a figure which may be compared with the following for NATO countries: Denmark 2.7, Belgium 3.2, Norway 3.3, Italy 3.6, Netherlands 4.1, West Germany 4.3, Turkey 4.3, Greece 5.3, United Kingdom 6.5, France 6.7, and United States 9.1.[20]

These increases in government defence expenditures have been continued throughout the period under study reflecting the country's two military involvements, the Palestine Campaign and the military build up prior to Suez, and the Middle Eastern political conflicts from the Yemen (1962-1964) to the Arab-Israeli War (1967). Over the period covered by Palestine campaign and the military build up prior to Suez, the increase in defence spending accounted for approximately

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18 Central Agency for Public Mobilization and Statistics, "Statistical Handbook", op. cit., p. 133.

19 Rate of birth dropped from 43.1 in 1960 to 42 in 1964, and to 35.1 in 1970. See: ibid., p. 47.

20 The Economist, 20 January 1962.

60% of the total rise in government expenditure.[21] This pattern is reminiscent of the pattern described for the British economy by Peacock and Wiseman.[22] They argued that in periods of social disturbance, and most particularly during wartime, temporary needs for government expenditures result in sharp increases in taxation to levels which would previously have been considered excessive or intolerable. After the need for these emergency expenditures subsides, tax rates may fall somewhat, but not to their earlier levels. Instead, there is a "displacement effect", whereby the temporary expenditures are replaced by others of a more permanent nature.

This line of reasoning helps to explain the growth in public expenditure in Egypt. Defence expenditure has increased, stabilised, and then increased again. This means that while defence has clearly been a major force pushing the government's share of total output upward,[23] there is no evidence of the sort of displacement effect suggested by Peacock and Wiseman - that is there is no substitution of other types of expenditures for defence between "wars". Although government revenue increased it did not keep pace with expenditure and as a consequence the government deficit increased, as Table 1 shows. After an initial attempt at following a balanced budget policy, which only lasted about two years, the budget policy was reversed to one of a steady and rising budget deficit.

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21 D. Mead, "Growth and Structural Change in the Egyptian Economy", op. cit., p. 135.

22 A. T. Peacock and J. Wiseman, The Growth of Public Expenditure in the United Kingdom, Princeton University Press, Princeton, 1961, pp. 24-28.

23 The share of current government purchases of goods and services in total output took major jumps from 17.6% (an average) in the early 1960s to 21.3% and 27.2% in 1963/64 and 1969/70 respectively. See Table 10 of this chapter.

Table 1

Public Revenue and Expenditure(1)

1950/51 - 1969/70 £E.Million

End of Fiscal Year	Revenue (1)	Expenditure (2)	Deficit
1950/51	185.1	190.6	-5.5
1951/52	198.4	237.2	-38.8
1952/53 (2)	199.4	209.9	-10.5
1953/54	212.3	233.0	-20.7
1954/55	232.4	269.9	-37.5
1955/56	295.5	343.0	-47.5
1956/57	276.3	358.1	-81.8
1957/58	317.7	319.1	-1.4
1958/59	386.3	413.3	-27.0
1959/60	418.5	484.8	-66.3
1960/61	541.0	700.6	-159.6
1961/62	544.6	774.0	-229.4
1962/63	727.5 (3)	970.0	-242.5
1963/64	774.3 (3)	1079.4	-305.1
1964/65	828.3 (3)	1184.4	-356.1
1965/66	957.1 (3)	1206.0	-248.9
1966/67	1076.8 (3)	1316.2	-239.4
1967/68 (4)	1678.5 (3)	1941.4	-262.9
1968/69 (4)	1816.2 (3)	2146.5	-330.3
1969/70 (4)	2043.8	2391.0	-347.2

1. Aggregate of net revenue and expenditure of all budgets after deducting inter budget subsidies and transfers. Figures as from 1957/58 are budgetary estimates as final accounts are not published.

2. Development budget revenue is not included while its expenditure is. This revenue was not indicated in the annual budget reports and was composed mainly of foreign aid loans, internal borrowing and monetary expansion.

3. Total revenues were considered equivalent to the resources of all budgets after deducting internal and external loans in addition to the deficit of the services budget. These sums were deemed to be the deficit shown in the third column.

4. These figures represent total expenditure estimates before deduction of inter budget subsidies and transfers.

Source: Ministry of Treasury - Annual Budget Estimates and Final Accounts.

5.4. FINANCING OF GOVERNMENT EXPENDITURE

Table 2 shows how development expenditure varied throughout the years 1952/53-1966/67 and its share in total public expenditure. It shows that development expenditure increased its share from 11.7% in 1952/53 to over 40% in 1960/61, thereafter declining slightly. This confirms that the role of the public sector had been expanded to include responsibility for investment projects. Government expenditure became a direct instrument of economic growth. It is against this background that the role of different items of finance in government expenditure are to be evaluated.

A. The Role of Tax Receipts

Table 3 shows that the tax burden increased slightly. In 1951/52 tax revenue from all sources amounted to £E147 million, or 17% of national income. Between 1961/62 and 1967/68 tax revenue had increased from £E243 million to £E621 million, that is an average of 22% of national income. Despite this the increase in government expenditure was proportionately greater so there was a fall in the average ratio of tax receipts to government expenditure over time, as may be seen from the Table. This relatively low tax income ratio brings to the fore the larger question of the factors which cause such a low ratio and the deliberate use of government taxation policy to raise the ratio.

First, the factors which cause such a low tax-income ratio in Egypt.

There are a priori causes for expecting low per capita real income to be associated with low tax-income ratios. It is difficult to impose heavy taxes on populations with living standards at the subsistence level and in the case of income tax the cost of collecting small amounts may prevent the extension of the tax base. We doubt

Table 2

Percent Share of Development Expenditure in Total Public Expenditure Within the Main Sectors

Sector	1952/3	1953/4	1954/5	1955/6	1956/7	1957/8	1958/9	1959/60	1960/1	1961/2	1962/3	1963/4	1964/5	1965/6	1966/7
Agriculture and Irrigation	42.7	54.9	59.1	76.1	57.7	36.3	50.3	72.5	77.4	76.7	63.4	58.7	62.9	43.4	46.8
Industry and Electricity	45.4	70.5	47.5	51.5	30.5	40.3	28.1	42.6	54.5	57.4	65.7	76.6	76.9	70.6	75.5
Transport	32.4	27.8	33.3	34.3	40.1	37.6	31.1	35.9	57.2	61.5	40.9	32.7	44.0	29.9	35.5
Housing and Utilities	78.1	77.3	78.3	85.6	54.0	7.4	65.1	53.8	82.0	78.1	53.4	40.3	43.5	33.6	35.1
Suez Canal	-	-	-	-	-	-	-	-	100.0 (1)	100.0 (1)	43.2	38.1	40.0	32.4	37.0
Other Services	3.2	2.4	3.6	7.8	3.1	3.8	4.6	3.7	9.3	10.4	11.2	11.1	7.4	5.5	7.0
Share of Total Development Expenditures	11.7	20.4	21.1	25.5	18.6	18.5	18.8	25.2	40.8	40.7	37.3	38.1	37.3	28.6	28.0

Note and Source:

(1) The investment share is not available.

Calculated from Table 7, Appendix 1.

Table 3

Central Government Tax Receipt and Social Insurances Fund

1951/52 - 1969/70 (£E.Millions)

Year End of June	Direct Taxation		Indirect Taxation	Total Tax Receipts		Government Expenditure	National Income GDP (at current factor costs)	RATIOS %										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	1:4	2:5	3:4	3:5	4:6	5:6	4:7	5:7	1:6	2:6	3:6
1951/2	49.7	49.7	97.0	146.7	146.7	237.2	875.6	33.9	33.9	66.1	66.1	61.8	61.3	16.8	16.8	21.0	21.0	40.8
1952/3	47.3	47.3	92.8	140.1	140.1	209.9	806.0	33.8	33.8	66.2	66.2	66.7	66.7	17.4	17.4	22.5	22.5	44.2
1953/4	50.5	50.5	105.6	156.1	156.1	233.0	847.0	32.4	32.4	67.6	67.6	67.0	67.0	18.4	18.4	21.7	21.7	45.3
1954/5	53.5	53.5	104.7	158.2	158.2	270.0	920.0	33.8	33.8	66.2	66.2	58.6	58.6	17.2	17.2	19.8	19.8	38.8
1955/6	53.9	53.9	108.3	162.2	162.2	343.0	965.0	33.2	33.2	66.8	66.8	47.3	47.3	16.3	16.8	15.7	15.7	31.6
1956/7	57.6	65.8	94.3	151.9	160.1	358.1	1067.0	37.9	41.1	62.1	58.9	42.4	44.7	14.2	15.0	16.1	18.4	26.0
1957/8	64.0	78.0	105.2	169.2	183.2	319.1	1126.0	37.8	42.6	62.2	57.4	53.0	57.4	15.0	16.3	20.1	24.4	33.0
1958/9	63.9	78.6	114.0	177.9	192.6	413.3	1157.0	35.9	40.8	64.1	59.2	43.0	46.6	15.4	16.6	15.5	19.0	27.6
1959/60	66.5	85.3	111.5	178.0	196.8	484.8	1285.2	37.4	43.3	62.6	56.7	36.7	40.6	13.8	15.3	13.7	17.6	23.0
1960/1	70.5	102.3	125.3	197.9	227.6	700.6	1363.5	36.7	44.9	63.3	55.1	28.3	32.5	14.5	16.7	10.4	14.6	17.9
1961/2	67.9	100.5	142.4	210.3	242.9	773.9	1411.1	32.3	41.4	67.7	58.6	27.2	31.4	14.9	17.2	8.8	13.0	18.4
1962/3	70.0	133.8	182.7	261.7	316.5	970.0	1562.7	30.2	42.3	69.8	57.7	27.0	32.6	16.7	20.3	8.1	13.8	18.3
1963/4	94.0	164.4	208.8	302.8	373.2	1079.4	1739.6	31.0	44.1	69.0	55.9	28.1	34.6	17.4	21.5	8.7	15.2	19.4
1964/5	104.2	197.4	225.8	330.0	423.2	1184.4	1975.0	31.6	46.6	68.4	53.4	27.9	35.7	16.7	21.4	8.8	16.7	19.0
1965/6	129.5	238.7	240.3	369.8	479.0	1206.0	2124.1	35.0	49.8	65.0	50.2	30.7	39.7	17.4	22.6	10.7	19.8	19.9
1966/7	142.6	271.6	241.5	384.1	513.1	1316.2	2193.5	37.1	52.9	62.9	47.1	29.2	39.0	17.5	23.4	10.8	20.6	18.4
1967/8	184.7	321.9	299.3	484.0	621.2	1941.4	2241.5	38.2	51.8	61.8	48.2	24.9	32.0	21.6	27.7	9.5	16.6	15.4
1968/9	191.0	422.0	317.6	508.6	739.6	2146.5	2339.4	37.6	57.1	62.5	42.9	23.7	34.0	21.7	31.6	8.9	19.7	14.8
1969/70	205.0	585.0	373.8	578.8	958.8	2391.0	2552.8	35.4	61.0	64.6	39.1	24.2	40.0	22.7	37.6	8.6	24.5	15.6

Sources: National Bank of Egypt, Economic Bulletin, several issues.
Central Bank of Egypt, Economic Review, several issues.

Notes: Column (2) includes the collections of social insurances.
All ratios are calculated by the researcher.

whether the "taxation potential" of a poor country[24] is generally lower than that of a rich country. But the important thing here is the low "coefficient of utilisation" of that potential - due to bad tax laws, bad tax administration, or both. This taxation potential is dependent on (i) real income per head; (ii) the degree of inequality in the distribution of income; (iii) the sectoral distribution of the national income and the social and institutional setting in which the output of particular sectors is procured; and (iv) the administrative competence etc. of the tax gathering organs of the government.

It is widely recognised that taxes can only be paid out of the "economic surplus" - the excess of production over the minimum subsistence needs of the population. In so far as this surplus is not consumed by the people to whom it accrues, but is saved and invested, it can only be made available for the purpose of public expenditure at the expense of reducing the rate of capital accumulation of the country in question. This is likely to react adversely on the country's economic development, except in so far as investment is diverted from luxury purposes (i.e. luxury housing) to purposes important for development. However, this minimum essential consumption for any community cannot be measured or defined. Yet it can happen that the amount of food or other necessities produced in a country is limited not by the availabilities of natural resources or by knowledge or ability, but by the customary way of life of the agricultural population, who prefer a maximum of leisure and a minimum of material income, and accordingly work just hard enough to cover their immediate and

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[24] The proportion of its gross national product that can be shifted to public purposes without setting up intolerable social and political upheavals.

traditional needs. In this case, additional taxes levied on them would tend to make them work harder and produce more. Taxation would provide an incentive to produce more (as opposed to forcing the people in question to consume less).

Another factor affecting the tax-income ratio is the relative magnitude of the "non-monetised" or subsistence sector, and the monetised or market exchange sector, as well as the nature of the prevailing type of enterprise. The general tendency in most under-developed countries is to throw a disproportionate share of the burden of taxation to fall on the monetised or market sector and an insufficient share on subsistence agriculture. The reasons for this are partly political and partly administrative. Yet it is the taxation of the agricultural sector that has a vital role to play in accelerating economic development. The most relevant example is the case of Japan and the USSR, where the taxation of the agricultural product was the main means to mobilise the domestic surplus for the purpose of rapid industrial growth.[25] But how then can we improve this low tax-income ratio in Egypt.

The answer to this question necessitates an examination of the way in which the enterprise and the agricultural sectors of the economy are taxed.

B. Taxation of Enterprises

Although Egypt had declared socialism as the goal of its development, the profit concept still persisted, and enterprises were subjected to a tax on their profits. However, since the public

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25 F. D. Holzman, "Financing Soviet Economic Development", F.A.O. Richard Bird and Oliver Oldman (eds.), "The Role of Agricultural Land Taxes in Japanese Development", Reading on Taxation in Developing Countires, Baltimore, 1964.

organisations controlled practically all enterprises, the share of government was not limited to the profit tax. This situation is summarised in Table 4. For simplicity the tax on profits and that on dividends are treated together.

The size of legal reserves was fixed in the Corporation Act at between 5% and 10% of net profit, though occasionally additional reserves were sometimes allowed. Five per cent of the profits invested were in Government bonds. The workers' share was 25% of the profit before profits tax. Three fifths of this amount was transferred to the Treasury as a payment for collective welfare services included in the services budget. The remaining two fifths was paid to employees in cash with a maximum of £E50 in any one year. Undistributed shares were carried forward to following years. Since 1962/63, interest was charged by the public organisations on all capital invested in an enterprise including retained profits.

Table 4

The Distribution of Net Profit

		%
1	Net Profit	100
2	Legal Reserves	10
3	Government Bonds	5
4	Workers' Share, total [25% of 1-(2+3)]	21
5	Profit Tax [26.55% of 1-4]	21
6	Shareholders' Share after tax [1-(2+3+4+5)]	43
7	Treasury's Share	39
8	Workers' Share payable in cash [$\frac{2}{5}$ th of 4]	8
9	Own Reserves [2]	10
10	Total distribution [6+7+8+9]	100

The enterprises were subjected to two types of taxes: taxes on profits and taxes on some factors of production. The possibility of increasing domestic savings through increasing either of these taxes is discussed below.

Since the beginning of 1963/64, taxes on factors of production have been increased. Capital invested has been subjected to an interest payment of 4.5% (2% in 1962/63). At the beginning of 1964, the payroll tax for social insurances was increased from 17% to 23% of wages and salaries. These taxes were raised for the purpose of increasing savings, but this does not appear to have been achieved because prices were not allowed to be adjusted so that taxes could be passed on to consumers. There is no evidence that the higher taxes increased productivity on the part of the enterprises. The main effect seems to have been a decline in profits and in the amounts available for transfer to the Public Organisations and the Treasury. This means that increasing taxes on profit, without accompanying price and productivity increases, would simply result in increasing tax revenue at the expense of other transfers to the Treasury and Public Organisation. Some of the revenue would come from private shareholders in enterprises that have not been fully nationalised. However, according to the Enterprises Budget, only about 8% of total earnings distributed to shareholders was due to be paid to private shareholders in 1964/65. During the year 1963/64 about one fifth of the revenue from the taxes on profit was collected from non-corporate companies. This proportion has been declining since 1961/62. The remaining part can be assumed to be in the trading sector.

In the period July-December 1965 fiscal changes were introduced, particularly taxes on goods and services. A general sales tax was not considered feasible administratively. It was replaced by price increase on a wide range of goods covering about 70% of expenditures in the

average family budget. The revenue from price increases was channelled to the Treasury in several ways. For goods produced by publicly owned enterprises and for goods partly imported, additional revenue was allocated to special Treasury controlled funds. For goods sold by the Ministry of Supply (whether domestically produced or imported), the revenue was directly allocated to the Service Budget. However, such increases were modest.

A general sales tax should be introduced. Such a tax would generate additional revenue for the Treasury and if prices were allowed to increase the tax revenue would be mainly at the expense of consumer spending, rather than the companies profits. In order to avoid handicapping exports, they should be exempt from this tax or a refund should be made available. This would be quite feasible under a single stage sales tax on manufactured goods. Imports of consumer goods should be subjected to this tax.

Varying forms of such tax are a common feature of many countries, both developed and underdeveloped. The objections made against such taxes are that they cause a great deal of distortion (particularly when they are levied at all successive stages); that they encourage the creation of vertical combinations and that they are difficult to enforce; when the degree of evasion is large, it is productive of inefficiencies as well as of inequalities in the tax system.

There is however one particular variant of such a tax which has much to recommend it, since it is capable of providing a firm basis for the administration of the whole tax system. This is the value-added tax, i.e. tax on the sales minus the purchases (of fuel and materials and possibly also of capital expenditure items of each enterprise).

A value-added tax is really a tax on the gross income generated by each enterprise (in the form of profits, interest, rent, wages and salaries) and for that reason could be treated as a specie of direct tax,

in addition to a streamlined form of a sales tax. It avoids the distortion of the general sales tax. From the point of economic benefits of view, it is more favourable than a corporation profit tax, and it could be a partial substitute for it.[26] It should be noted that both the corporation and the value added tax tend equally to be shifted leaving the total amount of profits after tax in the economy the same. But the distribution of after tax profits between the individual enterprises is very different in the two cases. A value added tax of equivalent yield would improve the position of those enterprises which paid most of the profits tax and worsen the position of those that paid little of it. This means that it would alter the distribution of profits between efficient and inefficient units; it would increase the reward of efficiency and penalise inefficiency. The prevailing system of a high rate of profits tax combined with numerous exemption (i.e. past losses, depreciation, etc.) is really a tax on marginal profits and has the effect of not harming inefficient units. Thus introducing value added tax would tend to improve the allocative efficiency of the economy. In addition, it could provide an up to date transaction for the whole economy which would help in the calculation of the whole set of national accounts.

C. Taxation of Agriculture

As we mentioned in an earlier chapter, there has been a redistribution of land since 1952. In most cases, the landowner had not cultivated his land, but rented to tenants. The rent was controlled by the government. Agriculture was organised more and more into

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26 See: N. Kaldor, "Taxation in Developing States" in Fiscal and Monetary Problems in Developing States: Proceedings of the Third Rehovoth Conference, Prasger Special Studies, 1967, pp. 209-228.

co-operatives. The farmer buys his supplies at the co-operatives at prices fixed by the government and sells his wheat, cotton, etc. there, at prices slightly higher than the prices offered to farmers who are not members of the co-operatives.

The increases in world cotton prices created a profit for the Public Organisation for Cotton Trade, prices paid to the farmers for cotton also increased. The cost of farmers supplies had not arisen, rents were constant, but land laboured wages had slightly increased. When the control of meat prices was abandoned in 1964, this resulted in a very considerable price increase, most of which had gone to the farmer in higher incomes.

Even with a high marginal tax on agricultural incomes, the total direct tax burden would not be very heavy for some time. In fact, Egypt's policy was to support the increases in agricultural incomes as an incentive to increase food production. Nearly all taxes have an element of disincentive, and tax policy should take this into consideration.

However, it is an established fact that as development proceeds, the proportion of the working population in producing food for domestic consumption is steadily reduced and the proportion engaged in manufacturing, commerce and services is steadily increased. In order to make this possible, the proportion of food produced on land which is not consumed by the food producers must steadily increase. Unless this happens, it is impossible for a non-agricultural sector to expand so as to occupy an increasing proportion of the community's manpower. This expansion of the "agricultural surplus" cannot be relied upon to rise automatically as part of the overall process of growth in the economy. Economic incentives do not operate in the same way in the "subsistence sector" as in the case of industry and commerce. A shortage of food is

not likely to call forth increased production; a rise in the price of locally produced food may even lead to a decrease of the amounts which are offered for sale, since it may cause the agricultural families to reduce their amount of work (or increase their own consumption) if their own needs for things which can only be procured with money can now be satisfied in exchange for a smaller quantity of foodstuffs. It follows that the taxation of agriculture, by one means or another, has a great role to play in accelerating economic growth since it is only the imposition of compulsory levies on the agricultural sector itself which enlarges the supply of savings in the sense required for economic development.

There are several possibilities for taxing agriculture indirectly.[27] The pricing of inputs and outputs could be used as an instrument for taxing agriculture.[28] A second possibility is to tax farmers' consumption by regulating the terms of trade between agricultural outputs and the consumer goods which farmers usually buy from the manufacturing sector (i.e. sugar, tobacco, clothes, tea, kerosene, and other manufactured goods).

Another possibility for taxing the rising incomes of farmers is to change the system of land taxes. The value of land is a measure of its income possibilities compared with land of other locations and qualities. Since assessments are made at ten-year intervals, the tax does not respond to changes in agricultural incomes occurring between

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[27] The effectiveness of direct taxation of farm incomes in the conditions of developing countries is becoming more questionable. In fact, direct taxation has very definite limits: it may be evaded; it is more easily felt by the cultivators and more likely to cause political complications. See: A. Eckstein, "Land Reform and Economic Development", World Politics, Vol. 3, 1955, p. 660.

[28] On the importance of this instrument of policy see: Little-Scitovsky-Scott, Industry and Trade in some Developing Countries, Oxford University Press, London, 1970, p. 341.

assessment dates unless the tax rate is changed. It is possible to introduce some elasticity by using the defence tax rate as a parameter for economic policy in such a way that the defence tax rate would fluctuate with agricultural incomes. For example, flexibility could be introduced by making the defence tax rate a function of an index of agricultural income. There are some advantages to this scheme. The suggested tax would require no administration changes. A sliding scale of rates could be made in such a way that the tax burden would disappear in years of crop failure, this avoiding the accumulation of tax arrears. In addition an incentive could be given to improve farming by penalising those farmers who do not use the best available techniques and do not substitute the most profitable products, and reward those farmers who do.

Whether or not the above scheme were adopted, the existing land taxation could be improved. The interval between the assessments could be reduced from ten to five years, thereby making property taxes more responsive to changes in price level and productivity. The rate of the defence tax could be further increased. It could be possible however to make the land tax rate a progressive one, the effective rates of which varied with the total value of land holdings of the family unit.

D. The Role of Non-Tax Receipts[29]

The main sources of the government's non-tax receipts during

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[29] All government receipts which are net of tax receipts, foreign assistance, and deficit financing are classified as non-tax receipts.

the period under study, represented by a number of items. Charges of services included dues for justice, for education, and dues collected by the Ministry of Health etc. In addition they included the fees received for powdering with pesticides and the surplus from the sale of fertiliser. Other sources were the investment returns from the economic activities of the state or in other words it is the revenue surplus of the Public Enterprises. Finally, it included the revenues from the export taxes on rice, onions, and petroleum collected through the banks and the profit from exchange control operations. It also included the net income of the operations of the Ministry of Supply, which sells quantities of basic goods in excess of fixed rations at a profit and quantities within the rations at a loss.

The contribution of all government's non-tax receipts mentioned above has marked a secular decline from an average of 30.8% of government expenditure during the 1950s to 22.7% during the period 1960/61-1966/67[30]

E. Financing of the Government Deficit

From 1957/58 the Egyptian government ceased to publish the actual expenditure figures. However, a quantitative analysis of these figures has been undertaken recently.[31] But these calculations could understate the actual figures to the extent that strategic and capital goods imports covered by foreign credits do not appear in the balance of payments.

(i) The Internal Finance

As we have shown before, the budget deficits persisted since 1952 but increased rapidly since 1958/59 with the implementation of the

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[30] See Appendix 1, Table 8.

[31] See Appendix 1, Table 9.

industrial plan followed by the comprehensive Five year Plan (1960/61-1964/65). That is because public revenue has not increased as fast as government expenditure. Accordingly, the outstanding public debt[32] rose rapidly during the second half of the 1960s. In 1953/54 total public debt amounted to £E195 million, or 23% of national income. By 1963/64 it increased to £E727 million, that is 42% of GNI, as Table 5 shows.

The narrowness of the capital market in Egypt tends the government to rely heavily upon the banking system for financing that part of budget deficit which needs to be met from internal sources. As a result, government securities held by the banking systems have shown an increasing trend mainly since 1956. In addition, all government guaranteed bonds were held by the Central Bank. A market for Treasury Bills outside the banking system did not exist. As may be seen from Table 6 the Central Bank was the largest holder of Treasury Bills. At the end of 1958 it held all Treasury Bills. By the end of 1964 the Central Bank's holdings of Treasury Bills accounted for about 75% of total Treasury Bills, then it increased to 91% by the end of 1967. Between 1952 and 1960 government bonds held by the commercial banks constituted between 25% and 30% of total government bonds held by the banking system. Between 1961 and 1967 it constituted more than half of total bank holdings of government bonds during 1961 and 1962 but slightly less than half during 1963/64.

(ii) The External Finance

The Egyptian government in her efforts to finance its developments projects relied upon foreign aid from different sources.

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[32] The published figures on the public debt in Egypt are deliberately incomplete. They do not show the net debt and in particular they do not give full information concerning the foreign public debt for the post-war years.

Table 5

Government Securities and National Income
1952/53 - 1966/67 (£E million)

Year	Total Government Securities (1)	Gross National Income (at current factor costs) (2)	% (1)/(2)
1952/53	258.0	806.0	32.0
54	195.0	847.0	23.0
55	203.0	920.0	22.0
56	255.0	965.0	26.9
57	293.0	1067.0	27.4
58	308.0	1126.0	27.4
59	347.0	1157.0	30.0
60	426.3	1285.2	33.2
61	492.2	1363.5	36.2
62	538.3	1411.1	38.2
63	608.3	1562.7	38.9
63/64	727.4	1739.6	41.8
65	727.4	1975.0	36.8
66	727.4	2124.1	34.2
67	737.4	2193.5	33.7

Source:

Central Bank of Egypt, Economic Review, several issues.

National Bank of Egypt, Economic Bulletin, several issues.

Table 6

Ownership Pattern of the Banking Held
Egypt Government Securities
(1952 - 1967)

End of December	Held by Central Bank		Commercial Banks		Total
	Treasury Bills	Bonds	Treasury Bills	Bonds	
1952	32.4	19.0	2.1	7.0	60.5
53	35.2	19.1	2.1	7.0	63.4
54	26.0	20.4	1.2	8.4	56.0
55	69.7	17.6	1.3	9.0	97.6
56	139.2	17.8	6.8	15.3	179.1
57	143.2	45.7	6.8	15.7	211.4
58	160.0	46.3	-	23.1	229.4
59	174.6	40.6	0.4	30.8	246.4
60	182.0	94.7	3.0	48.1	327.8
61	160.7	92.1	37.3	106.8	396.9
62	156.6	101.9	43.4	111.4	413.3
63	205.0	135.8	70.0	120.0	530.8
64	274.3	135.4	60.7	127.5	597.9
65	304.1	133.7	40.9	118.7	595.4
66	322.0	133.7	23.0	116.9	595.6
67	324.0	133.7	31.0	106.2	594.9

Source:

Central Bank of Egypt, Economic Review, several issues.
National Bank of Egypt, Economic Bulletin, several issues.

Until 1956, Egypt was relied heavily on the United Nations and western countries as far as economic aid is concerned. But when the United States withdrew its offer to participate in financing the High Dam project, Egypt forced to look for other sources other than the United Nations and the United States, and it was the Soviet Bloc countries, and in particular, the Soviet Union which made a contribution to financing not only the High Dam but also other projects. However, Egypt was not forced to rely completely on the Soviet Bloc, and as her normal relations were restored with the United States, American aid has been since flowing on a larger scale compared with before. Other western countries, mainly West Germany, contributed in the offer of aid to Egyptian development. But for political reasons these two countries stopped their loans to Egypt as from 1965.

Another source of external finance is the inflow of private foreign capital.[33] In 1952, the Company's Law of 1947, which limited foreign participation to only 49% was amended in order to create a favourable climate for foreign investors. Under the new law, the minimum share of Egyptian capital in joint stock companies was reduced from 51% to 49%; the right to transfer profits abroad, and to repatriate capital on five annual instalments after five years of investment was guaranteed.[34] This enabled some foreign companies to participate in Egypt's development in such fields as petroleum, tourism, and hotels, and projects like the iron and steel mill at Helwan and the fertilizer factory at Aswan.

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[33] Another source is the running down of foreign assets, which have been accumulated during the favourable years. Egypt has accumulated a significant amount of foreign reserves during the Second World War which were mainly sterling balances.

[34] Law 156 of 1953 amended by Law 475 of 1954.

Table 7

Foreign Aid and the Overall Public Deficit
(1952/53 - 1966/67), £E million

Year	Foreign Aid (1)	Overall Deficit (2)	% (1)/(2)
1952/53	0.557	-10.5	5.3
54	4.528	-20.7	21.9
55	1.184	-37.5	3.1
56	22.675	-47.5	47.7
57	13.410	-81.8	16.4
58	0.418	-1.4	29.8
59	30.930	-27.0	114.5
60	55.729	-66.3	84.0
61	68.925	-159.6	43.2
62	93.913	-229.4	40.9
63	152.609	-242.5	62.9
64	102.400	-305.1	33.6
65	96.000	-356.1	27.0
66	72.550	-248.9	29.1
67	57.350	-239.4	24.0

Sources:

Central Bank of Egypt, Economic Review, 1968, vol. 8, No. 3

National Bank of Egypt, Economic Bulletin, 1968, vol. 21, No. 3

S. Naggar, Foreign Aid to the UAR, Institute of National Planning, Cairo, 1964.

The role of foreign aid is explained in Table 7, where it is shown that a substantial part of the overall deficit in the public sector (especially since 1958/59) was covered by this item.

5.5. OUTPUT GROWTH AND STRUCTURAL CHANGES

The development of the government's policy concerning output growth is also worth noting. To obtain reliable figures on the indices of services output is a difficult task. Not only are the problems of interpreting the concept of real output in this sector almost intractable but also the statistics in this respect are discontinued.

However, two sources of data will be used: private estimates for the period 1952-1959 and Ministry of Planning estimates for the period 1959/60-1969/70.

Table 8 shows the indices of real gross value-added at constant prices by sector during the period 1952-1970. It suggests that the average real rate of growth of gross value-added in the construction sector was 7.7% per annum during the 1950s. It increased to 10.2% per annum during the first half of the 1960s and thereafter it was only just over 8% for the rest of the decade. Thus, for the 1960s the average rate was slightly above 9% per annum.[35]

The real rate of growth in transport during the period 1956/57-1966/67 was 11.2% per annum. This expansion was due, on the one hand, to the growing revenues of the Suez Canal which Egypt was able to appropriate after the nationalisation of this waterway and, on the other

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35 Bent Hansen attempted to adjust these data for the first half of the 1960s by applying a labour-input index to the 1959/60 value-added in construction and estimated the real rate of growth of this sector at 10.4% per annum between 1959/60 and 1964/65. See: B. Hansen, "Planning and Economic Growth in the UAR (Egypt), 1960-1965", op. cit., p. 31. Robert Mabro applied the same method to the second half of the 1960s and estimated the average real rate of gross value-added in construction at fairly above 2% per annum between 1964/65 and 1969/70. See: R. Mabro, "The Egyptian Economy, 1952-1972", op. cit., p. 173.

Table 8

Indices of Real Gross Value Added at Constant Prices by Sectors, 1952-1970

Year	Agriculture	Industry	Electricity	Construction	Transport	Housing	Commerce	Other Services
1952/53	100	100		100	100	100	100	100
1959/60	120	152		168	162	124	127	119
1959/60	100	100	100	100	100	100	100	100
63/64	112	144	190	204	135	108	115	133
64/65	118	150	228	197	170	110	118	146
66/67	117	155	248	188	193	115	133	165
67/68	120	148	349	163	109	165	134	175
1969/70	129	172	437	242	123	173	147	197

Sources: 1952/53 - 1959/60: Computed from D. Mead, "Growth and Structural Change in the Egyptian Economy", 1967, p. 45.

1959/60 - 1969/70: Computed from: Ministry of Planning, "Follow-Up Reports".

to the expansion of telecommunication services and of goods and passenger transport.

The share of housing in GDP was consistently understated. This was referred partly to controlled rents are an unsatisfactory basis for valuation and partly to that the services of owner-occupied houses were not properly imputed. However, the average rate of growth of housing sectors were lower than 2% per annum during the 1950s, and 1960s.[36] Expansion of that sector was faster in the mid-1950s and the second half of the 1960s than during the early 1960s.

The real rate of growth of gross value-added in the commerce and finance sector amounted to 3.5% per annum during the period 1952/53-1959/60, then it increased to 3.9% per annum during the 1960s.

The average real rate of growth of gross value-added in the "other services" amounted to 2.5% per annum for the period 1952/53-1959/60. It Increased to 7% per annum for the 1960s, while employment expanded during the same period at a rate of 4% annually.[37] Given national accounting conventions one would expect real output to grow at a faster rate than employment, as allowances have to be made for structural changes in "services" employment. The proportion of professionals, modern service workers, high-grade civil servants and the like tends to increase as development proceeds. However, these allowances do not explain such a large discrepancy between the rate of real output and employment growth. The expansion of government employment was the main cause of the difference between the growth of services in the 1950s and the 1960s.

It is also worth noting that movements in the rate of industry

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[36] This average rate of growth was based on investment in the housing sector in the 1950s and 1960s. See; R. Mabro, ibid.

[37] See: Section 5.6.

revealed by the national accounts correspond to the features of output indices has been discussed in Chapter 4. It will suffice to say here that the rate of growth of industry has increased, but much higher annual rates obtained before 1963/64 than in the later years. As a matter of fact, the annual rate of increase declined each year after 1963/64, when it reached a peak of 12%. In 1967/68 the level of output was lower than in the preceeding year. The very short recovery after 1967/68 was also accompanied by high rates of growth of manufacturing output. It would seem that industry has acquired the position of a leading sector in the Egyptian economy, a sector which imparts an impetus when in expansion and which constrains growth in the rest of the economy when in difficulty. This presupposes, however, the existence of strong linkages between industry and other sectors of the economy. But, as we shall see in Chapter 8, these links are rather weak. We are inclined to believe that both industry and the economy tend to move together because both respond to the same set of outside forces and not because of their inter-relationship.

The implications of sectoral developments for the assessment of the country's performance during the period in question, are considerable.

Table 9 shows a comparison of the relative sectoral contribution to the increase in output during the 1950s and 1960s. It shows that the tertiary sector (housing, commerce, and other services) contributed more than one third of the output increase, during the period 1952/53-1959/60 while agriculture and industry together accounted for almost half the total amount during the same period. The relatively significant contribution of transport is largely due to the growth of maritime traffic in the Suez Canal which recovered rapidly after the short disruption in 1956/57.

The noticable feature of the 1960s, when compared to the 1950s,

Table 9

Comparison of the Relative Sectoral Contribution to the Increase in Output in 1950's and 1960's

Sector	1952/53 - 1959/60			1959/60 - 1969/70		
	(1) Sector increase (£E million)	(2) Total increase (£E million)	(3) = (1)/(2) %	(4) Sector increase	(5) Total increase in output	(6) = (4)/(5) %
Agriculture	67	294	22.8	120	804	15.0
Industry and Electricity	73	294	24.8	219	804	27.2
Construction	17	294	5.8	67	804	8.3
Transport	34	294	11.6	21	804	2.6
Housing (Tertiary sector)	14	294	4.7	53	804	6.6
Commerce (Tertiary sector)	47	294	15.9	61	804	7.6
Other Services (Tertiary sector)	42	294	14.4	263	804	32.7
Tertiary sector			35.0			46.9
Total	294		100.0	804		100.0

Source: Computed from: Appendix 1, Table 10

was the rise in the relative contribution of the tertiary sector to Gross National Income increment. Tertiary activities accounted for some 47% of GNI in the 1960s compared to only 35% during the 1950s. "Other Services" which includes government services, accounted for one third compared with 14% in the 1950s. Thus the rapid expansion of the services represented a dominant feature of these developments. Part of this expansion attributable, as we mentioned above, to the increased absorption in government employment of school leavers and university graduates, reflect a rise in transfer payments to redundant workers rather than genuine growth in output. The part attributable to increases in the defence wage bill also represented growth in output of a very special kind. The share of industry (excluding electricity) remained constant to about 23%. The fall in the relative contribution of transport to the GNI increment (from 11.6% to 2.6%) was due to the closure of the Suez Canal in 1967. The contribution of agriculture to the GNI declined from 22.8% to 15%.

Investment is an important determinant of economic growth, more significant in LDCs than in advanced industrial countries. One reason is that the former import technical progress which the latter generate.

In 1952 a revolutionary government acceded to power with an explicit and firm commitment to accelerate industrial growth. To achieve this goal it assumed full control of the great bulk of investment activity in the economy. During the 1950s the investment ratio - that is gross fixed investment to GNP - was fairly constant in the range 12%-14%. However, this ratio increased sharply in the early 1960s, reaching 20% in 1963/64. Thereafter it declined again so that during the period 1968-1970 it was less than 12% as may be seen from Table 10.

It is worth noting that the growth in investment during the 1960s was accompanied by an increase in imports relative to GNP. There

Table 10

General Indicators of Development in Egypt's Economy (Value in £E., at Constant 1959/60)[1]

	1952/53	1953/54	1954/55	1955/56	1956/57	1957/58	1958/59	1959/60	1960/61	1961/62	1962/63	1963/64	1964/65	1965/66	1966/67	1967/68	1968/69	1969/70	Average Compound Growth Rates (% per annum) 1953/54 to 1964/65	1959/60 to 1964/65	1964/65 to 1966/67	1967/68 to 1969/70
Supply of Resources:-																						
Gross National Product	1086	1085	1115	1151	1158	1227	1289	1376	1445	1498	1685	1851	2030	2125	2150	2132	2139	2274	5.3	7.7	2.0	2.2
Commodity Imports	202	152	157	164	157	181	216	226	229	268	297	329	313	364	298	268	200	250	6.2	6.5	-2.0	-2.3
Use of Resources:-																						
Consumption:	887	947	972	982	992	1084	1137	1200	1236	1336	1489	1619	1757	1843	1858	2044	2146	2339	4.6	7.5	1.9	4.6
Private	753	771	776	745	743	850	908	972	983	1091	1171	1225	1355	1413	1437	1560	1589	1721	5.0	6.7	2.0	3.3
Government	134	176	196	237	249	234	229	228	253	245	318	394	402	430	421	484	557	618	7.2	11.9	1.5	8.5
Capital Formation	152	155	159	163	143	165	172	171	226	251	300	372	356	361	316	290	250	268	7.2	15.7	-3.8	-2.6
Changes in Stocks (2)	-	-	-	-	-	-	-	-	-	-	-	-	+13	-	+19	-	-	-	-	-	-	-
Commodity Exports (3)	158	142	121	141	122	137	168	193	186	159	184	217	230	229	227	219	251	259	4.2	3.6	-0.5	5.8
Sources of Financing:-																						
Capital Formation:																						
Domestic Savings	159	144	147	163	146	148	149	176	209	155	196	232	288	277	290	220	193	259	6.1	10.3	0.2	5.5
Private	165	147	192	195	222	196	139	166	219	172	245	343	359	363	345	282	271	341	7.7	16.7	-2.0	6.4
Government	-6	-3	-45	-32	-76	-48	+10	+10	-10	-17	-49	-111	-71	-86	-55	-62	-78	-82	-	-	-8.0	..
External Finance	+44	+10	+36	+23	+35	+44	+48	+33	+43	+109	+113	+112	+83	+135	+71	+49	-51	-9	19.2	25.1	-5.1	..
Population and Labour:-																						
Population (Thousand)	21943	22460	22990	23532	24087	24655	25237	25832	26397	26557	27244	27968	28699	30294	31162	32059	32501	33329	2.4	2.7	2.8	1.4
Rate of Change (%)		2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.2	2.7	2.7	2.7	2.6	2.8	2.8	2.8	1.4	2.6	..	..	..	..
Labour Force (Thousand)									6940	7169	7409	7657	7918	8187	8466	8752			..	..	2.2	..
Rate of Change (%)									3.4	3.3	3.3	3.3	3.4	3.4	3.4	3.4			..	..	..	..
Employment (Thousand)								6006	6512	6657	6868	7085	7374	7606	7634	7828	8051	8275	..	4.2	1.2	1.9
Ratio of Labour Force (%)								89.5	93.8	92.9	92.7	92.5	93.1	92.9	90.2	89.5			..	..	..	..
Per Capita Resources:-																						
Gross National Product (p.c.)	49.5	48.3	48.5	48.9	48.1	51.8	51.1	53.3	54.7	56.4	61.8	66.2	70.7	70.1	69.0	66.5	65.8	68.2	3.2	5.8	-0.8	0.8
Private Consumption (p.c.)	34.3	34.3	33.8	31.7	30.8	34.5	36.0	37.6	37.2	41.1	43.0	43.8	41.2	46.6	46.1	48.7	48.9	51.6	2.7	4.6	-0.8	2.0
Prices:-																						
General Wholesale Prices		83						100	101	102	101	102	113	117	130	131	125	131	2.8	2.4	4.8	..
Foodstuffs		84						100	98	101	102	106	123	146	154	148	148	158	3.2	4.2	8.0	2.2
External Terms of Trade		92						100	100	95	96	88	91	87	92	-	-	-	..	..	..	..
Ratio to G.N.P.:-																						
Gross Investment	14	14.3	14.3	14.2	12.4	13.5	13.3	12.4	15.6	16.8	17.8	20.1	18.2	17.2	15.6	13.6	11.7	11.8				
Gross Domestic Savings	12	13.3	13.2	14.0	12.6	12.0	11.6	12.8	14.5	10.8	11.6	12.5	14.2	13.1	13.6	10.3	9.0	11.4				
Consumption:																						
Private	69.0	71.1	69.5	64.7	64.2	69.0	70.6	70.6	68.0	72.8	69.5	66.2	66.7	66.6	66.8	73.2	74.3	75.7				
Government	12.0	16.2	17.3	20.6	21.5	19.0	17.8	16.6	17.5	16.4	18.9	21.3	19.8	20.3	19.6	22.7	26.0	27.2				
Net Imports (Balance of Payments Deficit)	2.0	1.0	1.1	0.2	-0.2	1.5	1.7	-0.4	1.1	6.0	6.2	7.6	4.0	4.1	2.0	3.3	2.7	0.4				

Notes and Sources: (1) £E = Egyptian Pound (according to the official exchange rate prevailing in the mid-1960's, one Egyptian Pound = $2.4)
(2) Stocks of industrial goods only (3) Net adjusted for overvaluation after de facto devaluation (by 24%) of £E in 1962.
Computed from: Arab Republic of Egypt Ministry of Planning, "Follow-Up Reports", various issues; National Bank of Egypt, "Economic Bulletin", several issues; Central Agency for Public Mobilization & Statistics, "Statistical Yearbook", Oct. 1974; and U.N., Monthly Bulletin of Statistics", Dec. 1970

are two reasons for this. First, the virtual absence of a capital good sector meant that the growth of investment led to a similar growth in imports of capital goods. Second, the rapidly rising incomes led to a rapid growth in demand for food and intermediate goods. Given the inelasticity of food supply, an increasing share of total supply had to be imported. At the same time imports of other consumer goods were held down through various highly protective import policies.

Accordingly, the growth in investment was accompanied by a growth in imports, though at a lower rate because of the import-substituting effect of the new investments. However, the rise in both the investment and import ratios in the first half of the 1960s was not matched by comparable increases in the share of exports and hence of domestic savings, and thus led to the emergence of both a savings and a trade gap. A relatively small balance of payment deficit equivalent to 1.1% of GNP in 1960/61 was followed by very large deficits of the order of 6% and 8% of GNP for 1961/62 and 1963/64.

With foreign debt reaching alarming proportions by the mid-1960s, and external finance becoming more difficult to obtain, severe curbs were imposed upon imports. Food shortages occurred, and the gap between domestic demand and supply caused a rise in food prices at a compound rate of 8% per annum during the period 1964/65-1966/67, as may be seen from Table 10. Given the importance of food in a low-income economy such as Egypt, it was inevitable that the rise in food prices led to an inflationary rise in the general price level.

The curb on imports of producer goods hit industry very hard. New investments in industry had to be reduced to a minimum, and some established industries slowed down because of shortages in spare parts, raw materials and other intermediate imports. Although the curb on imports was a major factor in the decline of industrial growth it was not the only one. Poor projections of both domestic and export demand

for industrial products led to substantial misallocation of investment in the industrial sector. As a consequence many industrial plants operated far below capacity.

Finally, the changing role of the government meant increasing concentration of investment in public hands, and changes in the pattern of investment during the period under study. The interesting features of these changes, as may be seen from Table 11, were a sharp decline in the high share devoted to housing in the early 1950s, a large increase in the share of agriculture between the 1950s and the 1960s, and the high increasing share of industry. The large allocation given to agriculture reflects the high cost of horizontal expansion which aimed to increase land supplies through expensive reclamation projects and provision of new hydraulic resources.[38]

The decline in the share of housing from 32% in the period 1952/53-1956/57 to 23% in 1957/58-1959/60, and to 12% during the1960s is considered significant from the point of view of economic development, as housing provides little employment after the construction of the building and probably generates less external economies and a smaller reinvestible surplus than other sectors. Put differently, houses are consumer durables, and in Egypt the larger proportion of new houses were built for the upper income group. The government therefore legitimately put a higher social valuation on investment in agriculture and industry.

As mentioned above, from the mid-1950s onwards, the Egyptian government gained full control of all investment activity, and was thus in a position to determine both its level and pattern of growth.

Indeed, tariffs on imports of raw materials and capital goods were

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[38] See: Chapter 2, section 2.5.c.

Table 11

Patterns of Investment Allocation (Current Prices, £E million), Values[1] and Percentages[2]

Sector	Average 1952/53 to 1956/57 %	Average 1957/58 to 1959/60 %	1959/60 Value	%	1960/61 Value	%	1961/62 Value	%	1962/63 Value	%	1963/64 Value	%	1964/65 Value	%	1965/66 Value	%	1966/67 Value	%	1967/68 Value	%	1968/69 Value	%	1969/70 Value	%	Average 1959/60 to 1969/70 %
Agriculture			16.7		16.6		17.8		20.6		30.9		32.5		30.7		31.3		24.9		25.6		27.0		
Irrigation and Drainage	11.4	14.9	8.6	17.2	14.8	16.9	19.7	20.7	29.2	24.6	36.4	27.4	37.9	24.9	32.6	21.7	34.4	22.9	25.1	21.4	32.5	20.2	29.3	17.5	21.4
High-Dam			4.2		6.8		14.4		24.0		34.8		18.6		19.0		16.5		12.5		9.5		5.2		
Industry	23.8	25.7	49.3	28.8	67.8	30.1	50.3	20.0	80.5	26.9	105.4	28.3	99.9	27.9	100.6	26.7	98.4	27.4	85.8	29.4	101.1	30.4	123.1	35.1	28.3
Electricity	6.0	4.0	6.2	3.6	5.6	2.5	6.3	2.5	11.9	4.0	35.6	9.6	53.2	14.7	61.6	16.2	69.3	19.3	52.9	18.1	31.9	9.6	27.3	7.8	9.8
Construction	..	..	..	..	..	..	..	..	3.5	1.3	4.5	1.2	5.2	1.5	6.8	1.8	3.9	1.1	1.0	0.3	2.6	0.8	3.4	1.0	1.1
Commodity Sectors	41.2	44.6	85	50	111.6	49	108.5	43	169.7	57	247.6	66	247.3	69	250.8	66	253.8	70	202.2	69	203.2	61	215.1	61	60.6
Transportation, Means of Communication & Suez Canal	14.7	18.8	35.8	20.9	68.9 / 5.9	33.2	66.5 / 4.7	28.3	48.6 / 5.2	18.0	40.9 / 4.2	12.1	45.9 / 3.4	13.7	49.4 / 3.7	14.1	42.6 / 3.5	12.9	38.3	13.1	69.5	20.9	71.4	20.4	18.9
Finance and Trade	..	..	..	..	..	..	5.0	2	3.7	1.2	6.5	1.7	4.3	1.2	2.7	0.7	2.6	0.7	0.7	0.2	2.7	0.8	3.6	1.0	1.1
Housing	32.5	23.1	31.1	18.1	19.1	8.5	37.8	15.1	37.6	12.5	37.4	10.1	29.6	8.5	47.5	12.6	42.3	11.7	41.7	14.3	46.9	14.1	36.5	10.4	12.4
Public Utilities	9.8	12.1	7.5	4.4	7.7	3.4	10.7	4.2	13.5	4.5	8.2	2.2	10.9	3.0	12.4	3.3	8.6	2.4	4.2	1.4	5.8	1.7	10.9	3.1	3.1
Other Services	1.8	1.4	12.0	7.0	12.4	5.4	18.4	7.2	21.3	7.1	27.6	7.4	21.7	6.2	17.3	4.6	12.4	3.5	10.9	3.7	15.4	4.6	18.0	5.2	5.6
Services Sectors	58.8	55.4	86.4	50	114.0	51	143.1	57	129.9	43	124.8	34	117	33	133	35	112.0	31	95.8	33	140.3	42	140.4	40	40.7
Grand Total[3]	100.0	100	171.4	100	225.6	100	251.1	100	299.6	100	372.4	100	364.3	100	383.8	100	365.8	100	298.0	100	343.5	100	355.5	100	

Source and Notes: (1) Computed from: United Arabic Republic, Department of Statistics and Census, "Ten Years of Revolution", Statistical Atlas, Cairo, 1962; and Ministry of Planning, "Follow-Up Reports", various issues.

(2) Computed by the researcher.

(3) Grand total of percentages exceeds 100% from 1964/65 because of including "land value" in investments and its ratio to total investments was as follows:

Year:	1964/65	1965/66	1966/67	1967/68	1968/69	1969/70	Average for this period
% of land:	1.6	1.7	1.9	2.0	3.1	1.5	1.0

increased substantially in the 1950s in order to compensate for the loss of budget revenue from duties on non-food consumption goods, imports of which had declined to very low levels in the early 1950s.

Three major aspects of government policies towards investment exercised a strong influence on the demand, supply, and imports of capital goods. First, there was a substantial shift in the allocation of investment towards the commodity sectors during the period 1953/54-1966/67 as may be seen from Table 11. This tended to slight the pattern of investment towards construction since this constitutes the major part of investment in services. While equipment constitutes the most important element in manufacturing investment. Accordingly, the observed change in the ratio of investment in these two major sectors brought about a faster demand for capital equipment. And given the negligible size of the domestic capital sector, a large part of this increased demand had to be imported.

Second, a large portion of total investment in public utilities was allocated to projects with a long gestation period such as the Aswan High Dam and related electricity projects. For example, during the period 1959/60-1966/67, total investment in the High Dam alone amounted to about 10% of all investments in the commodity sectors. The contribution of the High Dam investments to output will not be felt until the 1970s, and will be stretched over a fairly long period. However, given the low marginal propensity to save the income multiplier effects associated with the construction of the Dam added to the existing inflationary pressures. Furthermore, the allocation of sizeable investments to projects characterised by long gestation periods meant a rise in investment with no parallel rise in savings and, accordingly, this led to a widening of the savings gap.

Finally, government investment policy within the industrial sector did not place any emphasis on the capital goods sector. After an

initial (and somewhat short-lived) tendency to give more attention to the promotion of the heavy goods industries in general, the government reversed the trend. Although this change in policy orientation might have been prompted by technical and economic difficulties, such as a shortage of skilled manpower, the size of the market, etc., it was also based on welfare considerations. This is made evident by the explicit statement in the "National Charter" which defined the country's industrialisation philosophy and objectives as ones that would endeavour "to strike a humane balance reconciling the requirements of production with those of consumption".[39] The Charter goes on to say that

> "the theories which advocate that developing nations should specialise in light consumer goods as well as those which stress heavy industries would be rejected on the grounds that this would necessarily entail great deprivations on the part of the people".

It also explains that

> "Egypt industrial policy had been based until the end of the First Five-Year Plan (1959/60-1964/65) on placing relatively greater stress on consumer industries . . . But in order to realise a more balanced industrial structure, the Second Five-Year Plan (1964/65-1969/70) will lay more stress on heavy industry".[40]

The outcome of this philosophy was that, in the First Five-Year Plan, the share of the capital goods sector (especially machinery) in total industrial investment did not exceed 5%. The result of this was that, while demand for capital goods increased rapidly as a result of the increase in the level and pattern of investment, the growth of supply lagged behind, and thus led to the emergence of a capital goods bottleneck.

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39 Quoted in United Arab Republic, Central Agency for Public Mobilisation and Statistics, Population Increase in the UAR and its Challenge for Development, Cairo, November 1966, p. 254 (in Arabic).

40 Ibid., p. 255.

5.6. EMPLOYMENT PATTERN

Employment creation has been mentioned often as a major strategy to reduce poverty and facilitate a more egalitarian distribution of income. The economic growth pattern of industrialised countries is said to contain "spread effects" through which more people were brought into the production process giving them access to income. Yet many LDCs have found that mere economic growth may not ensure higher employment (unless labour intensive methods are used in production).

Several factors, such as borrowed capital intensive technology, inappropriate fiscal policies, and high population growth rates, seem to have adversely affected the employment situation in many LDCs.[41] Capital intensive methods encouraged by fiscal incentives can contribute to income inequality particularly when the private sector is dominant and profits accrue to a small segment of entrepreneurs. Low participation of labour due to low absorption capacity in the production process can aggravate such tendencies.

Thus, more employment creation through labour intensive technology and other structural changes in the economy such as land reform have been advocated by a number of studies as the most important strategy to achieve a more egalitarian distribution of income.[42] By the same token, unemployment is regarded as aggravating income inequalities.

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41 The nature and magnitudes of the unemployment problem in the LDCs is well documented by David Turnham, "The Employment Problem in Less Developed Countries", Organisation for Economic Co-operation and Development, Development Center, Paris, 1971.

42 The country-studies done by the teams organised by the International Labour Office are the best examples of this. See: the following ILO publications (i) Toward Full Employment: A Programme for Columbia, U.N.-ILO, Geneva, 1970; (ii) Employment, Incomes and Equality: A Strategy for Increasing Productive Employment in Kenya, U.N.-ILO, Geneva, 1972; (iii) Employment and Income Policy for Iran, U.N.-ILO, Geneva, 1973; (iv) Sharing in Development: A Programme of Employment, Equity, and Growth for the Philippines, U.N.-ILO, Geneva, 1974.

In this section we analyse the labour supply and employment in the Egyptian economy. One of its major features is the substantial surplus labour. Although a great deal of controversy has arisen with regard to the nature and implications of the existence of this surplus labour in Egypt, especially in the agricultural sector, there has been no denial of its presence in the economy as a whole.

A majority of private and official experts had estimated surplus labour in the agricultural and services sector to range from 25% to 40%.[43] However, two issues require examination: one, relates to the release from agriculture of a labour surplus continually generated by population increases; the other to the absorption of this labour in other areas and sectors of the economy.

A. The Release Side

The release of labour takes two forms: migration from rural to urban centres, and labour transfers within rural areas from agriculture to non-agricultural activities. Migration is the more important phenomenon because of its scale in most developing countries today and because of its wide socio-economic implications. The scope for sectoral transfers in rural areas is restricted because the size of the non-agricultural sector tends to be relatively small outside the towns.[44]

In Egypt considerable internal migration has taken place during the period under study. After the First World War, there was a continuous

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[43] For instance, to this problem, see: B. Hansen, "Marginal Productivity wage Theory and Subsistence Wage Theory in Egyptian Agriculture", Journal of Development Studies, II, July 1966, pp. 367-407; and "Employment and Wages in Rural Egypt", The American Economic Review, LIX, No. 3, June 1969, pp. 298-313; also see: D. Mead, Growth and Structural Change in the Egyptian Economy, Richard D. Irwin Inc., Illinois, 1967, pp. 80-98, and R. Mabro, "Industrial Growth, Agricultural Under-Employment and the Lewis Model: The Egyptian Case, 1937-1965", op. cit., pp. 322-351.

[44] R. Mabro, "The Egyptian Economy, 1952-1972", op. cit., p. 196.

Table 12

Rural-Urban Composition of the Egyptian Population,

1907-1970

Year	Population					Annual Compound Growth Rate (%) (1)		
	Total (000's)	Rural (000's)	%	Urban (000's)	%	Rural	Urban	Total
1907	11183	9058	81	2125	19	-	-	-
1917	12670	10030	79	2640	21	1.03	2.19	1.26
1927	14083	10367	74	3716	26	0.33	3.48	1.05
1937	15811	11429	72	4382	28	0.98	1.67	1.16
1947	18806	12604	67	6202	33	0.99	3.54	1.75
1960	25771	16120	63	9651	37	1.91	3.46	2.45
1966	29732	17690	60	12042	40	1.56	3.76	2.41
1970	33329	19331	58	13998	42	2.24	3.83	2.87

Note and Source:

(1) Computed by the researcher.

Central Agency for Public Mobilization and Statistics, "Population and Development: A Study of the Population Increase and Its Impact on Development in Egypt", Cairo, 1973, p. 139.

Table 13

Net Internal Migration of the Population between Governorates of Egypt
During the Periods 1960 - 1965 and 1965 - 1970 (000's)

Governorates	1960 - 1965 (000's)			1965 - 1970 (000's)		
	Males	Females	Total	Males	Females	Total
Urban Governorates:						
Cairo	+ 140	+ 134	+ 274	+ 222.6	+ 205.7	+ 428.3
Alexandria	+ 37	+ 35	+ 72	+ 24.9	+ 23.1	+ 48.0
Port-Said	+ 4	+ 4	+ 8	..	..	..
Ismailia	+ 6	+ 6	+ 12	..	..	..
Suez	+ 10	+ 10	+ 20	..	..	..
Lower Egypt:						
Damietta	- 6	- 5	- 11	+ 13.2	+ 12.9	+ 26.1
Dakahlia	..	- 2	- 2	+ 33.9	+ 45.3	+ 79.2
Sharkia	- 9	- 11	- 20	+ 54.7	+ 64.3	+ 119.0
Kalyubia	- 2	- 4	- 6	+ 62.2	+ 59.1	+ 121.3
Kafr-El-Sheikh	- 16	- 11	- 27	- 2.8	+ 6.7	+ 3.9
Gharbia	- 22	- 23	- 45	+ 14.3	+ 26.6	+ 40.9
Munufia	- 36	- 38	- 74	- 25.1	- 20.1	- 45.2
Behera	- 8	- 5	- 13	+ 28.9	+ 46.4	+ 75.3
Upper Egypt:						
Giza	+ 23	+ 23	+ 46	+ 91.6	+ 78.1	+ 169.7
Beni-Suef	- 29	- 25	- 54	- 31.3	- 24.5	- 55.8
Fayum	- 19	- 13	- 32	- 7.9	- 1.7	- 9.6
Menia	- 40	- 32	- 72	- 35.1	- 28.0	- 63.1
Asyut	- 4	- 7	- 11	- 29.6	- 31.0	- 60.6
Sohag	- 15	- 13	- 28	- 42.3	- 52.8	- 95.1
Qena	- 31	- 29	- 60	- 29.2	- 27.4	- 56.6
Asswan	+ 14	+ 5	+ 19	+ 52.3	+ 44.8	+ 97.1
Frontier Governorates (1)	+ 3	+ 1	+ 4	..	..	..

Notes and Sources: + refers to immigration to the governorate
- refers to emigration to other governorates

(1) The figures relating to this net migration represent averages for the four governorates of the borders, namely: the Red Sea, the New Valley, Matruh and Sinai.

Source: Central Agency for Public Mobilization and Statistics, "Population and Development", Cairo, June 1969, p. 176; and June 1973, p. 147.

stream of migration from rural areas to urban centres, especially to big metropolitan centres like Cairo, Alexandria, and the three major cities of the Suez Canal Zone: Port Said, Suez and Ismailia. As Table 12 shows the rural population declined continuously from over 80% of the total population at the turn of the century to 58% in 1970. The table also indicates that while the absolute size of the Egyptian population has almost tripled since 1907, the size of the urban population has increased more than sixfold during the same period.

Another noticeable feature is the net internal migration of the population between the governorates during the period 1960-1970.

As may be seen from Table 13, internal population movements over the 1960s - particularly during the period 1960-1965 - show a net outflow of population from the rural governorates of both Upper and Lower Egypt towards the urban governorates of Cairo, Alexandria, Port-Said, Ismailia and towards Giza, Asswan and the borders. The governorates which receive a net inflow of population are either big urban centres such as Cairo, Alexandria, Port-Said, Suez, Ismailia, or are located near big urban centres (e.g. Giza). They tend to have relatively high per capita incomes and provide greater job opportunities.[45]

Table 14 shows the population growth of towns between 1960 and 1966. Clearly the actual population growth in both Aswan and Choubra-el-Kheima was much faster than what it would have been had the population of both only grown at the average rate for the country as a whole.

Although the metropolitan areas do not offer abundant work opportunities in the "formal sector",[46] the attraction of the larger

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[45] Ministry of Planning, Features of Regional Growth in the United Arab Republic over the period 1964/65-1966/67, First Report, December 1968, Cairo, p. 16 (in Arabic).

[46] By this sector we mean industry, particularly the manufacturing sector.

Table 14

Population and Growth of Towns, 1960-1966

Towns	Population in 1960 (000's)	Population in 1966 (000's)	Percentage increase	Presumed direction of net (1) migration
Cairo Giza Choubra-el-Kheima	3353 419 101	4220 571 173	25.85 36.28 71.29	+10.11 +20.54 +55.55
Greater Cairo	3873	4964	28.12	+12.38
Alexandria	1516	1801	18.80	+3.06
Port-Said	245	283	15.51	-0.23
Suez	206	264	28.15	+12.41
Ismailia (city)	116	144	24.13	+8.39
Tanta	200	230	15.00	-0.74
Mehalla-al-Kobra	188	225	19.70	+3.96
Mansourah	167	191	14.37	-1.37
Assiut	127	154	21.25	+5.51
Zagazig	125	151	20.80	+5.06
Damanhour	127	146	14.96	-0.78
Fayum	112	134	19.64	+3.90
Aswan	63	128	103.17	+87.43
Minia	100	113	13.00	-2.74

Note and Source:

(1) On the assumption of a uniform natural increase (15.74% during six years)

Central Agency for Public Mobilization and Statistics, "Statistical Yearbook, 1952-1973", Cairo, October 1974, p. 11.

cities lies in their capacity to provide better income prospects and more flexible employment opportunities in the "informal sector".[47]

It has been observed that the bigger the city the faster its population growth, in spite of the fact that natural population increase is quite similar throughout the whole country. This has led to a pronounced over-urbanisation of the big cities (i.e. cities with populations of 100,000 and over). Cairo and Alexandria together account for about 20% of the total population and along with the Canal Zone cities they have grown at a much faster rate than other cities. Their attraction of these large cities might simply be that extensive medical, educational and other services are concentrated in them. Moreover, the fruits of technical progress are often only to be found and enjoyed in the metropolis. And the increasing role of government in economic life in recent years has enhanced the relative attractiveness of places such as Cairo, Alexandria, Giza and the Canal Zone towns since these have become the main political, administrative and cultural centres.[48]

However, rural-urban migration is usually explained in terms of a contrast between the "pull" and "push" factors. There is now a wide

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47 We define this sector as a part of the service sector. Since the latter represents transport, commerce, government and personal services - the remaining category label "unspecified" represents the "informal" sector. Migrants would try to create jobs for themselves in this latter sector through a variety of ways. One of the most interesting is through the creation of new services. In Egypt, any casual observer would have noted the entrepreneurial and innovative abilities of pedlars and other service workers. The sales of flowers by young men at traffic lights is in a sense a new service. The convenience of buying the goods without leaving the car on the way home and without wasting time since the transaction is effected during an idle moment. "New services", often unwanted, are a device to transfer income and the scope for these activities seems important in towns. See: R. Mabro, "The Egyptian Economy", op. cit., pp. 201-202.

48 Galal Amin, Urbanisation and Economic Development in the Arab World, American University of Beirut, 1972, p. 17.

consensus of opinion among economists that while the earlier urbanisation of the advanced industrialised countries was mainly motivated by "pull" factors, rural migrants being attracted by the increasing employment opportunities in the towns urbanisation in most underdeveloped countries in recent years has been the result of "push" factors. In particular the deteriorating conditions in rural areas has forced migrants to seek a livelihood in the city.[49]

In one of the rare studies on migration in Egypt, Janet Abu-Lughod suggests that there are two types of rural migrants: "the bright youths who migrate in search of education or wider opportunities" and the "have-nots of the village".[50] The latter are numerically dominant and constitute the basic migration stream.

In the first case, the selective migrants enter the urban life by way of two main paths. One is through the education system, the other is through military service. Those from the countryside who have benefited from education often migrate to the towns in search of higher education. But once he undergoes this higher education he is transformed into an urban dweller. The second impetus to selective migration has been military service, as more and more villagers have relocated permanently in the city after their term of duty. In fact, skills learned by conscripts in the service give them a valuable competitive edge in urban employment.[51]

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[49] More details on this point in K. Davis and H. Golden, "Urbanisation and the Development of Pre-Industrial Areas", in Economic Development and Cultural Change, October 1954; B. Hoselite, Sociological Aspects of Economic Growth, The Free Press of Glencoe, New York, 1960; International Labour Office, Why Labour leaves the Land, Geneva, 1960; and D. Kamerschen, "Further Analysis of Over-Urbanisation", Economic Development and Cultural Change, January 1969.

[50] J. Abu-Lughod, "Migrant Adjustment to City Life: the Egyptian Case", American Journal of Sociology, Vol. 67(1), 1961, p. 23.

[51] J. Abu-Lughed, "Rural Migration and Politics in Egypt" in R. Antoun and I. Harik (eds.), Rural Politics and Social Change in the Middle East, Indiana University Press, Bloomington, 1972, p. 317.

Although education and military service seem to be the major determinants of the stream of selective migration, "push factors" tend to dominate for landless labourers and members of the poorer landed families. That a larger proportion of rural migrants fall into this second stream is borne out by the International Labour Organisation, Institute of National Planning sample survey. This survey covered 422 migrants and found that 26% of them came from families earning less than £E50 a year before migration; 40% came from families earning £E51-75 a year; 22% from families with an annual income of £E76-100, and only 8% from families with an income in excess of £E100 a year.[52]

The Institute of National Planning and International Labour Organisation rural employment survey provided further information on the nature of "push factors" driving rural inhabitants to migrate to urban areas. This information is summarised in Table 15.[53] This shows that while most migrants have complex reasons for migrating, landlessness is the strongest push factor. This influences 86% of all household heads, while the desire for an independent life and income away from the extended family ranks second and influences 65% of the household heads. The third push factor is the lack of rented land in the region of origin; 53% of the emigrants were unable to rent land in their original villages and were, therefore, driven to migrate in search of more attractive jobs than that of a seasonal agricultural labourer.

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[52] Arab Republic of Egypt, Institute of National Planning, and International Labour Organisation, Research Report on Employment Problems in Rural Areas, Cairo, 1965-1968, Report B, p. 56.

[53] The village of Omar Shahin was selected as a "sample village", since it is the oldest in the Tahrir Province as far as collective rural migration is concerned. The total number of household heads in this village was 156 and the total population 960. A questionnaire was designed to investigate conditions before and after migration and to determine the relative weights of the "push and pull" factors involved in the migratory process.

Table 15

Distribution of Household Heads According to Push Factors of Migration
(based on an experimental study conducted in the village of Omar Shahin)
Tahrir Province

PUSH FACTORS	% of Household Heads (out of 156)
Landlessness	86
Lack of rented land	53
Lack of agricultural operations	37
Lack of other occupations	32
Independent income	65
Absence of specialisation	3
Absence of markets	-
Family feuds	1
Revenge	-
Liberation from traditions	-
Broken family ties	2
External marriage	-
Work personal relations	-
Housing conditions	26
Health problems	12
Lack of social services	11
Lack of educational services	7
Lack of recreational services	3
Transportation problems	1
Ambition	15
Other reasons	3

Source:

Arab Republic of Egypt, Institute of National Planning/ International Labour Organization, Final Report on Employment Problems in Rural Areas, Cairo, 1968, p. 29

Although "push factors" are responsible for the bulk of internal migration in Egypt, we now turn to discuss very briefly the importance of "pull factors". It must be emphasised at the outset that the urban centres act as magnets attracting the rural migrants not so much for purely economic reasons,[54] but more importantly, because of "psychic" motivations deeply rooted in the desire of the younger members of the rural community to break away from the rigid socio-cultural traditions prevailing in the village. These latter "psychic" factors, as opposed to pure economic motives, should be regarded as the major "pull factors" affecting the process of rural out-migration in Egypt.

In the light of the foregoing analysis, it seems reasonable to argue that the determinants of migration in the case of Egypt, should not be uniquely related to the modern urban/rural wage differential and the probability of finding a job. In most instances, "push factors" in rural areas and the flexibility of the "informal sector" in towns combine to enable migration to occur.[55]

As a matter of fact, rural-urban migration in Egypt has proceeded at a rate far beyond the absorptive capacity of industry and particularly of the manufacturing sector. Over the eleven year period 1952-1963, the growth of Egyptian industry created new employment opportunities for only 360,000 persons, but the population of Cairo

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[54] Economists writing in the neo-classical tradition present the prospective urban migrants as maximisers of expected utility. They postulate that rural-urban migration will continue so long as the expected urban real income, at the margin, exceeds real agricultural product; and that migration will cease only when the expected income differential is zero. Such an approach considers the rural-urban real wage differential to be the main inducement mechanism pulling the population to the cities. See: M. P. Todaro and J. R. Harris, "Migration, Unemployment and Development: A Two-Sector Analysis", American Economic Review, March 1970, pp. 126-140.

[55] R. Mabro, "The Egyptian Economy, 1952-1972", op. cit., p. 202.

alone increased by more than this every three years.[56] Presumably most rural migrants to towns try to create jobs for themselves in the "informal sector", using this sector as a transit route to the modern industrial sector. The gravitational pull of the big metropolises like Cairo, Alexandria, Giza and the Canal Zone towns lies in their capacity to offer much greater and more flexible opportunities in the "informal" sector than any provincial town.

B. Labour Absorption: Employment

The growth of population raises the question of labour absorption in the various sectors of the economy and the more specific issue of employment in the towns. This section is concerned with changes in the sectoral pattern of employment during the period under study. Two sources of data will be used: Population Censuses for the period 1947-1960, and Ministry of Planning estimates for the period 1960/61-1969/70.

As the two sets of data are not perfectly consistent the two periods are analysed separately.

(i) Labour Force and Employment for 1947-1960

Table 16 shows the total labour force increased by 732,000 between 1947 and 1960. Indeed, during this period the labour force increased at a much slower rate than total population (less than 1% annually compared with 2.45 p.a.). The rate of participation in the labour force which had been around 37% in 1947 declined to less than 30% in 1960. This was due partially to the changes in the age structure of the population, which was itself attributable in part to the increase in the rate of population growth, and in part to the extension of compulsory education.

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56 G. Amin, "Urbanisation and Economic Development in the Arab World", op. cit., p. 12.

Table 16

Distribution of Labour Force and Employment by Sectors
Census Years, 1947 and 1960 (in Thousands)

Sectors	1947		1960	
	Total	% of[1] labour force	Total	% of[1] labour force
Labour Force	6,994.6	100.0	7,726.6	100.0
Agriculture	4,244.9	61.0	4,406.4	57.0
Mining and quarrying	8.0		21.1	
Manufacturing	560.6	8.0	713.1	10.0
Electricity, gas, water	22.6		36.8	
Construction	113.3	2.0	158.8	2.0
Transport	203.3	3.0	260.2	3.0
Commerce	590.4	8.0	641.4	8.0
Other Services	897.6	13.0	1,369.4	18.0
Unspecified	353.9	5.0	119.3	2.0

Note and Source:

(1) Computed by the researcher.

Department of Statistics and Census, Population Census for 1960, Vol. 2, Supplementary Table IV, Cairo, 1963.

The agricultural sector, which engaged 61% of the labour force in 1947, absorbed 22% of additions to the labour force (i.e. new labour) during the period 1947-1960. This could be explained in terms of the lack of any significant increase in the supply of arable land during this period, and the general tendency of rural youth to migrate to urban areas in search of employment.

The contribution of the industrial sector to employment has been rather slow during the period 1947-1960, and in relation to the rapid growth of industrial output after the Second World War, manufacturing employment expanded at a very small rate (2% per annum between 1947 and 1960, to be compared with an average rate of growth of real industrial output of some 7% or 8%.) This performance could be explained in terms of the very nature of modern industrial development, which leads to the adoption of labour-saving technology and involves structural shifts towards capital-intensive industries such as chemicals, petroleum, paper and metals. Thus, the bulk of the increase in the labour force (some 391,000 out of 732,000) found employment in the tertiary sector. As construction and transport employed an extra 102,000 workers, most of the expansion took place in government,[57] personal services,[58]

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[57] Nearly half of all government workers were in defense, justice, and police. While published figures are not complete in this regard, it seems that the employment in "developmental" aspects of the government (health, education, agriculture, industry, and communications) amounted to some 65,000 people, or just over 1% of total employment in the economy. See: D. Mead, "Growth and Structural Change in the Egyptian Economy", op. cit., pp. 133-134.

[58] The definition of "personal services" used in Egypt is a rather restrictive one; it excludes, for example, many professional services, such as medicine and law. In 1947, the major components included in this sector were paid household servants (50%); tailoring (18%); hotels, bars, and restaurants (13%); and hair-dressing (11%). The remainder were in such lines as clothes washing and ironing, shoe polishing, and entertainment. The pattern in 1960 was approximately the same, although domestic servants seem to have dropped somewhat, both absolutely and relatively. See: Department of Statistics and Census, Population Census, 1947 (Cairo, 1954), pp. 214-218, and Population Census, 1960, Vol. II, p. 144.

commerce, and in the "informal" sector to which the category labelled "unspecified" seems to belong.

In addition, the pattern of absorption in different geographical areas can be analysed by breakdown of employment by urban centres and the provinces as shown in Table 17. As the table shows an important feature has been the increase in "services" employment in the provinces. The absolute increases in employment during the period 1947-1960 were 418,000 and 383,000 in the tertiary and agricultural sectors respectively. As a result the share of employment in "services" increased from 20% in 1947 to 25% in 1960.

(ii) The Pattern of Employment for the Period 1960/61-1969/70

Changes in the sectoral pattern of employment after 1960 follow the same general trend as that indicated above. But there are certain differences as Table 18 shows. The rate of growth of total employment was much faster than between 1947 and 1960 (2.6% per annum as compared with 1% per annum).

A rapidly growing labour supply coupled with a declining marginal rate of labour absorption in agriculture,[59] and a government commitment to full employment meant a sharp rise of employment in the industrial and services sectors.

In the industrial sector, the rate of labour absorption behaved differently over time. During the 1950s the industrial sector was not forced to employ labour over and above its actual needs. But in the early 1960s, and with the full-scale nationalisation of industry, the industrial sector became a major absorber of surplus labour. The

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[59] Even in the mid 1960s this still accounted for over 50% of the total labour force.

Table 17

Labour Force and Employment in Urban Governorates and Provinces 1947-1960

(Thousands)

	1947	1960
Urban Governorates:		
Total Employment	943	1,412
1. Agriculture	27	65
2. Industry	221	346
3. Services	694	1,001
Provinces:		
Total Employment	4,303	5,182
1. Agriculture	3,112	3,495
2. Industry	293	370
3. Services	899	1,317

Source: Donald Mead, Growth and Structural Change in the Egyptian Economy, Richard Irwin Inc., Homewood, Illinois, 1967, pp. 37 and 39.

government, committed to a policy of full employment in a period where the labour force was growing rapidly, imposed employment targets upon the industrial sector which substantially exceeded its needs. Therefore, industrial employment increased at a compound rate of 2% per annum during the period of rapid industrial expansion 1947-1960. The corresponding rate for 1960/61-1964/65 was 7.1% per annum as may be seen from Table 18. It is not therefore surprising that, according to the Five Year Plan (1960/61-1964/65) Evaluation Report, the industrial employment target was more than met while industrial output was 25% below its target level.[60]

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60 Ministry of Planning, Follow-up and Evaluation Report on the First Five Year Plan (1960/61-1964/65), Cairo, February 1966, Part One, p. 9.

Table 18

Employment by Sectors during the Period 1960/61 - 1969/70

(A) TOTAL NUMBERS (Thousands)

SECTOR	1960/61	1961/62	1962/63	1963/64	1964/65	1965/66	1966/67	1967/68	1968/69	1969/70
TOTAL EMPLOYMENT	6511.9	6656.9	6868.2	7085.0	7373.9	7606.5	7633.6	7827.6	8051.2	8274.7
Agriculture	3600.0	3600.0	3632.0	3673.0	3751.0	3877.2	3864.6	3892.4	3964.9	4048.3
Industry	625.6	679.0	725.9	789.7	825.0	841.7	846.7	867.3	890.7	916.1
Electricity	13.1	15.1	17.4	17.9	18.0	18.5	18.3	18.5	20.3	22.8
Construction	166.0	263.0	315.7	334.2	345.2	328.0	307.6	259.8	338.0	387.9
TOTAL COMMODITY SECTOR	4404.7	4557.1	4691.0	4814.8	4939.2	5065.4	5037.2	5038.0	5213.9	5375.1
Transport	252.7	239.2	249.2	258.3	283.9	307.8	324.5	330.4	335.7	347.2
Commerce	663.0	680.9	702.2	719.0	729.7	752.5	767.7	785.8	794.3	801.7
Services	1191.5	1179.7	1225.8	1292.9	1421.1	1480.8	1504.2	1673.4	1707.3	1750.7
TOTAL SERVICES SECTOR	2107.2	2099.8	2177.2	2270.2	2434.7	2541.1	2596.4	2789.6	2837.3	2899.6

(B) SHARES OF MAIN SECTORS (%)

Total Employment	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Agriculture	55.3	54.1	52.9	51.8	50.9	50.9	50.6	49.7	49.3	48.9
Industry and Electricity	9.8				11.4					11.3
Tertiary	34.9				37.7					39.8

(C) ANNUAL AVERAGE RATES OF GROWTH (%)

	1960/61 - 64/65	1964/65 - 1969/70	1960/61 - 1969/70
Total Employment	3.2	2.3	2.6
Agriculture	1.0	1.5	1.3
Industry and Electricity	7.1	2.2	4.4
Tertiary	5.3	3.2	4.2

Notes and Source: The annual average rates of growth are computed by the researcher.

1. Agricultural employment seems to be restricted to adult males.
2. Industry includes mining, and the estimates seem restricted to employment within establishments, thereby excluding jobbing artisans.
3. Services include the Government but not the army.

Computed from: Arab Republic of Egypt, Ministry of Planning, Follow-Up and Evaluation Report on the First Five-Year Plan (1960/61-64/65), Part I, Cairo, February 1966, p. 63; and Follow-Up Reports for 1965-70.

Finally, given a maximum politically tolerable rate of unemployment, the employment in the services sectors (especially public services) was decided largely as a residual, thus satisfying the labour demand-supply balance equation.

SUMMARY AND CONCLUSION

A variety of government actions, controls, interventions, and expenditure and revenue policies all have distributional effects. Our concern, in this chapter, was mainly with two major aspects: namely, the increasing direct involvement of the Egyptian government in the social and economic life of the country, and the revenue structure used to finance the expenditures.

There has been a steady increase in the government expenditure in Egypt throughout the period under study. A number of factors led to this sharp rise in government expenditures, foremost among them were defense expenditures and the increasing welfare transfers. As may be seen from Table 10 the real budget deficit averaged £E61 million per annum for the period 1959/60-1969/70; this amounted to about 21% of average private savings during the same period. It is in fact, this government dissaving which had mainly led to the emergence of the savings gap.

Underlying increasing government dissaving were inelastic tax revenues on the one hand, and rising government expenditures (especially on defense and welfare transfers) on the other. Other features of Egypt's fiscal policies was the pattern of growth of government revenue. The only tax on agricultural income was the land tax whose revenue stagnated throughout the period. Thus, the increase in agricultural income was virtually exempt from any taxes. Moreover, income from wages and salaries up to £E250 was exempt from taxes, and for the following £E100, the tax rate was only 2%. This tax

structure, in addition to the increase in welfare transfers had reinforced the trend towards a rapid growth in demand, mainly for food as will be seen later.

The developments surveyed in this chapter also reveal something about the employment structure of a land-scarce economy and the response to a population pressure. Agriculture made a limited contribution to new employment because of resource constraints, institutions, low productivity, and the very labour-intensive technology on family farms. Industrialisation did not provide an immediate solution; despite high rates of capital formation and output growth the number of jobs created each year was relatively small. The initial size of the manufacturing sector (a sign and consequence of underdevelopment) was largely responsible for this state of affairs. Egypt moved from a stage where agriculture was dominant to the stage where the share of tertiary activities became very large. The long intermediate phase during which the growth of industry precedes that of services seems to have been bypassed. Egypt also departed from a pattern whereby labour is reallocated from agriculture to industry. Instead labour was reallocated from agriculture to services. The effect of these on economic development is likely to be different from what happens when labour is reallocated to industry. This is because in the service sector labour does not co-operate with capital and hence does not generate an economic surplus. The growth of services is therefore unlikely to contribute to economic development through external economics or technical progress.

However, the employment strategy had a direct bearing on the savings and trade gaps in at least two major ways. First, the policy of excess labour absorption in the industrial sector represented a form of unemployment subsidy and contributed to a rise in the cost of industrial production and a decline in the industrial profits. Thus

tended to reduce the industrial sector's international competitiveness, and at the same time cut into the main source of aggregate savings, i.e. industrial profits. This will be discussed later. Secondly, the growth in government employment meant, ceteris paribus, a net contribution to aggregate demand with zero contribution to aggregate supply of commodity output. This also had an adverse effect on the balance of payments.

CHAPTER 6

CHANGES IN CONSUMPTION PATTERNS IN EGYPT

This chapter evaluates the changes in patterns of consumption and standards of living in Egypt that have been associated with the changed distribution of income. Thus, it examines the general pattern of private consumption; traces the changes in urban and rural consumption during the period in question; analyses the consumption baskets of the rural poor in Egypt; and finally outlines the consumption function as it relates to our model.

6.1. THE GENERAL PATTERN OF CONSUMPTION

In the National Accounts private consumption appears only as a residual term, and no aggregate figures on urban and rural consumption are available. The first full scale sample survey of household consumption was carried out by the "Central Statistical Committee" during the period October 1958 to November 1959. In order to eliminate seasonal variations in the pattern of consumption, the data were collected over a period of twelve consecutive months. The sample of households used in this survey was drawn from the census of dwelling units. The urban sector was represented by Cairo, Alexandria, Port-Said, Ismailia, Suez and the capitals of other governorates and counties. The rural sector included both villages and urban suburbs.

Sampling in the urban sector was carried out in two stages. The five cities mentioned above, together with the capitals of other governorates, were classified into regions. Coinciding with the geographical boundaries of police departments, the final sample being generated by means of simple random sampling within each of these regions. In the case of the county capitals, one half of their number in each governorate was chosen at random, and in each selected capital a proportion of the households was selected at random. The number of

households included in the sample covered 3,145 urban families.

In the rural sector sampling was carried out in three stages. The district (Markaz), the village and the household. Half of the districts of each province were first selected at random. Villages belonging to the selected districts were stratified according to size, and 2.5% of the villages were randomly chosen from each stratum. A proportion of households from each selected village was then systematically selected, giving a final rural sample of 3,037 families, comprising 16,468 persons. Thus, the sample included one in every thousand rural households.[1]

Sample observations were investigated and classified according to income and other socio-economic characteristics. The results are summarised in Table 1. In particular the table shows the percentage distribution of expenditure by size of total annual expenditure in rural areas in 1958/59. The table reveals a very familiar pattern of expenditure distribution, with the percentage expenditure on food falling, and that on durable consumer goods, services etc. rising substantially with increases in income.

Expenditure on "stimulants" (i.e. tobacco, tea, coffee etc.) shows a more complicated pattern. The proportion of total expenditure devoted to stimulants increases strongly as total expenditure increases up to an annual level of £E100; thus indicating a high expenditure elasticity. For expenditure brackets higher than £E100 the percentage expenditure remains fairly constant indicating unit elasticity.[2]

The second scale sample survey of household consumption was carried out in 1964/65. As in the first scale, total expenditure

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1 The Central Statistical Committee, Family Budget Sample Survey: 1958-1959, Cairo, April 1961, pp. 11-13.

2 Institute of National Planning, "Report D. Wages, Incomes and Consumption in Rural Areas", op. cit., p. 45.

TABLE 1

Patterns of Consumption for Rural Households: Percentage Distribution of Expenditure For Different Income Groups, 1958/59

Annual Expenditure Brackets (£E)	Current Consumption Goods					Durable Consumer Goods	Services etc.	Other Expenditure	Total
	Food	Stimulants	Beverages	Others	Total				
<25	73.5	1.4	3.5	7.9	86.3	3.2	2.5	8.0	100
25 -<50	68.5	4.9	4.4	6.9	84.7	5.3	3.7	8.0	100
50- <75	67.7	6.4	3.9	6.2	84.2	6.3	4.6	4.9	100
75-<100	68.1	7.0	3.9	5.6	84.6	6.7	5.1	4.5	100
100-<150	65.7	7.0	3.7	5.5	81.9	7.7	5.9	4.5	100
150-<200	63.4	7.4	3.6	5.3	79.7	8.6	7.2	4.5	100
200-<250	63.2	6.8	3.2	4.9	78.1	8.9	8.4	4.6	100
250-<300	60.6	6.7	3.2	4.9	75.4	9.8	9.6	5.2	100
300-<400	60.6	6.5	3.3	4.7	75.1	10.2	9.6	5.1	100
400-<600	56.2	5.8	3.1	4.4	69.5	11.8	12.7	6.0	100
600-<800	54.1	6.3	2.9	4.5	67.8	11.7	13.6	6.9	100
800-<1000	53.1	6.4	3.0	3.6	66.1	10.8	19.0	4.1	100
≥ 1000	38.6	7.7	2.8	4.7	53.8	11.7	26.2	8.3	100
All households	63.0	6.7	3.5	5.2	78.4	8.6	8.2	4.9	100

Source: B. Hansen, A. Sedki, and Y. Moustafa, "Wages, Incomes and Consumption in Rural Areas", Report D on Employment Problems in Rural Areas, Institute of National Planning, 1965, p. 46.

rather than income was retained as the stratification variable.

The data for this study were collected over four rounds, each starting on a different quarterly date, in order to take account of seasonal changes in expenditure patterns. For the purpose of the study the country was divided into three major areas: (i) urban governorates, consisting of the capitals of the Egypt's 21 governorates; (ii) district capitals (Markaz) which numbered 98 towns representing the district capitals of the governorates mentioned in (i) above; and (iii) rural areas, comprising the 4,000 villages which were stratified according to village size; "large villages" of 1,000 or more households, and "small villages" with less than 1,000 households. The total number of households comprising the sample amounted to 3,411 (in each stage), distributed as follows: 1,654 from urban governorates, 649 from district capitals and 1,108 from rural areas.[3]

The result of 1964/65 family budget survey, tended to confirm the pattern of rural and urban consumption derived from the first sample survey of 1958/59. Tables 2, 3 and 4 summarise the various 1964/65 survey results for both urban and rural areas.

Tables 2 and 3 show that changes in total expenditure are associated with changes in the proportion of expenditure devoted to food. The relatively high percentage of expenditure on cereals and starches in the consumption bundles of the rural poor (those with incomes of 50 Egyptian pound per annum) may be explained by the fact that the proportion of calorie intake from cereals and starchy foods is particularly high in relation to their prices. However, the drop in the percentage distribution of cereals and starches in rural areas is less sharp than that of urban areas. An increase in the shares of meat, fish and eggs, milk and dairy products and fruits is noticeable in both rural and urban areas due to the fact that these are

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[3] The Central Agency of General Mobilisation and Statistics, "The 1964/1965 Family Budget Survey", op. cit., pp. 3-6.

TABLE 2

Percentage of Average Per Capita Expenditure on Selected Food Items relative to Per Capita Rural Total Expenditure, 1964/65

Annual Family Income Brackets (£E)	Total Expenditure in Rural Areas (£E)	% of Expenditure on Food and Beverages %	Cereals and Starches %	Meat, Fish, and Eggs %	Milk and Dairy Products %	Fruit %
<50	25.11	73.0	23.8	14.0	6.7	1.4
50 - <100	26.60	70.3	24.5	14.4	6.6	1.7
100 - <150	30.32	69.1	22.3	15.3	7.6	1.8
150 - <200	33.75	67.3	21.7	15.1	7.6	1.8
200 - <300	38.28	66.6	21.2	15.5	8.2	1.9
300 - <400	41.85	62.4	19.8	14.5	7.4	2.1
400 - < 600	53.99	59.7	16.4	13.8	7.8	1.9
600 -<1000	58.27	54.7	13.7	13.5	9.3	1.9
⩾ 1000	103.32	57.0	10.6	17.7	8.7	2.6

Source: Computed From: National Bank of Egypt, "Food Consumption in United Arab Republic (Egypt)", Economic Bulletin, vol. XXII, No. 4, 1969, Tables V & VI.

TABLE 3

Percentage of Average Per Capita Expenditure on Selected Food Items relative to Per Capita Urban Total Expenditure, 1964/65

Annual Family Income Brackets (£E)	Total Expenditure in Urban Areas (£E)	% of Expenditure on Food and Beverages %	Cereals and Starches %	Meat, Fish, and Eggs %	Milk and Dairy Products %	Fruit %
< 50	25.21	73.8	22.2	12.5	4.2	1.7
50 - <100	29.33	71.2	22.5	13.4	4.6	1.9
100 - < 150	35.06	66.3	19.5	12.1	5.0	2.0
150 - < 200	37.81	63.4	17.8	13.0	5.5	2.2
200 - <300	45.25	59.8	16.0	13.1	5.8	2.3
300 - <400	57.54	55.2	13.3	12.7	6.0	2.4
400 - < 600	75.81	52.2	10.9	13.3	6.4	2.5
600 - < 800	101.90	47.0	-	13.2	6.4	2.6
800 - <1000	127.13	43.0	-	13.9	6.3	2.7
⩾1000	190.47	37.6	-	13.1	5.4	2.8

Source: Computed From : National Bank of Egypt, "Food Consumption in United Arab Republic (Egypt)" Economic Bulletin, vol. XXII, No. 4, 1969, Tables V and VII.

TABLE 4

Income Elasticities of Demand for Food and Beverages in Urban and Rural Egypt, 1964/65[1]

Annual Income Brackets (£E)	Cereals and Starchy Food	Dry Beans	Meat, Eggs and Fish	Fats and Oils	Milk and Dairy Products	Vegetables	Fruits	Sugar and Products	Total Food and Beverages
				Urban Areas					
<200	-0.042	-0.457	1.373	0.236	1.781	0.326	1.801	0.498	0.498
200-<600	0.305	0.411	1.021	0.399	1.216	0.511	1.190	0.579	0.710
≥ 600	0.075	-0.025	1.015	0.144	0.901	0.447	1.134	0.599	0.641
Weighted Average	0.189	0.154	1.082	0.310	1.243	0.463	1.286	0.570	0.656
				Rural Areas					
<200	0.673	1.123	1.147	0.647	1.415	0.474	1.436	0.979	0.747
200-<600	0.493	0.763	0.771	-0.123	0.846	0.385	1.486	0.474	0.638
≥ 600	-0.683	-0.733	0.972	-2.253	2.534	-0.443	1.144	0.727	0.554
Weighted Average	0.458	0.767	0.921	-0.03	1.186	0.348	1.462	0.674	0.670

Note & Source: (1) Raw figures obtained from: The Central Agency for Public Mobilization and Statistics, "Family Budget Survey 1964/65", Cairo, August 1969.
Computed from : National Bank of Egypt, "Food Consumption in United Arab Republic (Egypt)", Vol. XXII, No. 4, 1969, Table VIII.

considered non-essential foods, and therefore expenditure on these items increases with a rise in income and living standards.

One can also see, from Table 4, that the income elasticity of demand for food and beverages was 0.5 for low income groups in urban areas in the mid-1960s; 0.71 for medium-income groups, and 0.64 for high-income groups. The corresponding figures for rural areas were 0.75, 0.64 and 0.55 respectively. The high income elasticity of demand for dry beans, cereals and starchy food in rural areas for those with incomes less than £E200 contrasts sharply with the negative income elasticities for the same commodities for those with incomes in excess of £E600. Also, the income elasticities for cereals and starchy foods, dry beans, fats and oils and vegetables are low for those earning less than £E200 in urban areas. These elasticities increase for those earning between £E200 and £E600 but decline for the high-income groups £E($\geq$600) in line with the general trend of income elasticity of demand for food and beverages. This tendency may be attributed to the fact that these products constitute the basic diet and, consequently, spending by low-income groups on these goods does not rise proportionately with an increase in income. On the contrary, these elasticities are negative for cereals and starchy foods and dry beans as low-income groups channel a substantial portion of increases in income to other foodstuffs. The rise in income elasticities for these foods for the medium-income groups may be attributed to the substitution of some inexpensive items by more costly products in the same food group.

The average income elasticity of demand is particularly high in urban areas for fruits (1.286); milk and dairy products (1.243); meat, fish and eggs (1.082). The corresponding figures for rural areas are 1.462, 1.186, 0.921. These contrast sharply with the magnitudes for developed countries that are much greater.

Therefore the tendency is for the rural poor to shift away from starchy roots and coarse grains as incomes grow, substituting instead "superior" foodstuffs such as meat, dairy products, and vegetables. However, these superior foodstuffs are not offered to the rural poor on comparative price-calorie terms. A "normalised" calorie basis enables comparisons to be made and shows that the degree of substitution between goods in the consumption baskets of the rural poor is limited, given the prevailing pattern of relative prices. Data in Table 5 illustrate this point. The table shows that if one hundred calories' worth of maize or millet is taken to be the numeraire the physical rates of substitution in consumption (at any given calorific level) are greatly constrained, and the choice open to the rural poor is severely reduced. That is to say that, given the pattern of relative prices a poor rural family has to pay for foodstuffs; there are a very limited number of combinations that will yield approximately the same calorific value, given the family's low income.

Thus, the consumption pattern of the rural poor is inevitably going to be cereal based. An increase in per capita real income may result in the consumption of more onions, or cheap fruit items such as dates or melon, but it is unlikely to be associated with a major shift from cereals to meat, fish or citrus fruit.

In general there will be little scope for substitution when the prime needs of the low income groups are not being fully satisfied. Furthermore, at low levels of income it seems likely, given the ranking of consumer needs, that the satisfaction of certain prime needs is a precondition for the appearance of other

Table 5

Comparative Price - Calorie Terms for Selected Commodities

Commodity	Money Cost of 100 Calorie Worth of the Commodity (in Milliemes)[1]	
	1964	1971
Maize	1	1.1
Millet	1	1.1
Wheat flour	not available	1.5
Beans	1.8	2.9
Onions	4.3	7.0
Dates	5.3	not available
Grapes	9.3	not available
Bananas	8.5	9.9
Buffalo meat	36.6	60.7
Mutton	15.4	22.8
Fresh fish	14.9	19.6
Eggs	-	24.7

Note and Source:

(1) One Egyptian pound = 100 piastre; one piastre = 10 milliemes.

Computed from: Central Agency for Price Planning, Levels of Nutrition in Relation to Prices, Memo No. 12, Cairo, June 1972, pp. 23-25.

needs.[4] The difficulties of the marginal approach become more apparent when applied to situations, which clearly are very prevalent, in which available commodities are excluded entirely from the consumer's budget.

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[4] Professor J. Robinson has explained the existence of a well ordered scale of priorities among wants or what can be called the "hierarchy principle", as in the following way: "Generally speaking, wants stand in a hierarchy (though with considerable overlap at each level) and an increment in a family's real income is not devoted to buying a little more of everything at the same level, but to stepping down the hierarchy". See: John Robinson, The Accumulation of Capital, The Macmillan Press Ltd., London, 1956, p. 354.

Moreover, the concept of a marginal rate of substitution - which is basic to the theory of consumer's choice - ceases to apply in such situations.[5]

6.2. DISTRIBUTION OF HOUSEHOLDS ACCORDING TO ANNUAL CONSUMPTION EXPENDITURE

In order to trace the changes in rural and urban consumption over time, it will be useful to examine the change in the frequency distribution of rural and urban households according to annual consumption expenditure. Tables 6, 7, 8 and 9 provide this data for the years 1958/59 and 1964/65. The data clearly indicates a notable change in the frequency distribution of rural households but slight change of urban households over the period under review.

This change can be evidenced from the fact that while the two sample distributions have the same modal class (see figures 1 and 2), they differ from each other according to the degree to which the sample values of the variate cluster about the mean or spread from it. Tables 6 and 7 and Tables 8 and 9 show that between 1958/59 and 1964/65 the proportion of urban families falling in the expenditure class £E150-300 increased from only 36% to 37%, whereas the proportion of rural families increased from 27% to 42%. It is not justified, however, to compare the percentages of households in each expenditure class.

Figures 3 and 4 compare the frequency distributions for urban and rural households, according to annual consumption expenditure, for each of the years 1958/59 and 1964/65. Figure 3 shows that for 1958/59

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[5] See: D. M. Nuti, "Social Choice and the Polish Consumer", Cambridge Review, May 1971, pp. 220-221; L. L. Pasinetti, "A New Theoretical Approach to the Problem of Economic Growth", Pontificiae Acadamiae, Scientirarum Scripta Varia, Rome 1965, p. 63; and R. Dorfman, P. Samuelson and R. Solow, Linear Programming and Economic Analysis, McGraw-Hill Inc., New York, 1958, pp. 25-28.

the frequency distributions for urban households was bi-model, suggesting that households can be classified as low and high expenditure households. A different pattern of expenditure distribution exists for each class. The first class included nearly 70% of the sample observations with a modal value of annual total expenditure of almost £E140 per household. The second class contained nearly 30% of the households in the sample and had a modal value of annual total expenditures amounting to nearly £E360 per household.

The pattern of total annual consumption expenditures for the rural sector as of 1958 was almost similar to that of the urban sector. Nevertheless, the pattern was less acute, in the sense that the low expenditure group included nearly 92% of sampled households. Modal values of annual total expenditures per household were £E120 and £E336 for low and high total annual expenditure groups respectively.[6]

The existence of similar patterns of distribution in 1964 is rather more surprising (see Chart 4), since this implies complete failure of those measures undertaken to change the pattern of distribution. The proportion of urban households included within the high consumption expenditure bracket in 1964 was 28.6% of sampled households, compared to 29.2% in 1958 (see: Tables 6 and 7). This suggests that despite the eradication of most of the Egyptian capitalists in the 1950s there emerged another group with incomes and consumption patterns similar to those of the old group.

The same pattern was also evident in the rural sector, where the high consumption expenditure group in 1964 accounted for 9.7% of sampled households, compared to 8% in 1958 (see: Tables 8 and 9).

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[6] The reduced acuteness of disparities of the distribution of total consumption expenditure among the rural people relatively to that of the urban one, may be explained at least in view of the effects of the land reform act of 1952 as explained earlier.

TABLE 6

Sampled Egyptian Urban households distributed according to total and average annual expenditures as of 1958/59

Income Brackets (£E)	No. of households			Total annual expenditures			Average total expenditure (£E per household) =4÷ (1) (X_1)
	Total	Per cent		Total (£E)	Per cent		
		$\hat{F}(X_1)$ %	Cumulative $\hat{F}(X_1)$		%	Cumulative	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
<25	6	0.19	0.19	112	0.01	0.01	18.67
25- <50	65	2.07	2.26	2637	0.31	0.32	40.57
50- <75	165	5.25	7.51	10379	1.22	1.54	62.90
75-<100	251	7.98	15.49	22167	2.60	4.14	88.31
100-<150	602	19.14	34.63	75783	8.88	13.02	125.89
150-<200	512	16.28 } 36.15	50.91	88588	10.38	23.40	173.02
200-<250	356	11.32 }	62.23	79826	9.36	32.76	224.23
250-<300	269	8.55 }	70.78	73760	8.65	41.41	274.20
300-<400	377	11.99	82.77	130041	15.24	56.65	344.94
400-<600	307	9.76	92.53	149647	17.54	74.19	487.45
600-<800	131	4.17	96.70	89674	10.51	84.70	684.53
800-<1000	45	1.43	98.13	39204	4.60	89.30	871.20
≥1000	59	1.87	100.00	91284	10.70	100.00	1547.19
Total	3145	100.00	-	853102	100.00	-	271.26

Source: Collected and Computed from: The Central Committee of Statistics; Research of Sampled Family Budgets in the Egyptian Region 1958/59, Cairo, April 1961, pp. 193-194.

TABLE 7

Sampled Egyptian Urban Households distributed according to total and average annual expenditure as of 1964/65

Income Brackets (£E)	No. of households			Total annual expenditures			Average total expenditure (£E per household) (X_3)
	Total	Per cent		Total (£E)	Per cent		
		% $\hat{F}(X_3)$	Cumulative $\hat{F}(X_3)$		%	Cumulative	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
< 25	10	0.11	0.11	199	0.00	0.00	19.90
25- < 50	114	1.22	1.33	4597	0.14	0.14	40.32
50- < 75	208	2.23	3.56	13165	0.39	0.53	63.29
75- <100	336	3.60	7.16	29468	0.87	1.40	87.70
100- <150	1113	11.92	19.08	141076	4.15	5.55	126.75
150- <200	1352	14.48 } 37.30	33.56	237019	6.97	12.52	175.31
200- <250	1162	12.45 }	46.01	261035	7.68	20.20	224.64
250- <300	968	10.37 }	56.38	266470	7.84	28.04	275.28
300- <400	1404	15.05	71.43	485143	14.27	42.31	345.54
400- <600	1369	14.66	86.09	665092	19.57	61.88	485.82
600- <800	574	6.15	92.24	323784	11.59	73.47	686.03
800-<1000	544	5.82	98.06	552514	16.25	89.72	1015.65
≥ 1000	180	1.94	100.00	349584	10.28	100.00	1942.13
Total	9334	100.00	-	3399146	100.00	-	364.17

Source: Collected and Computed from: The Central Agency of General Mobilization and Statistics, Research of Sampled Family Budgets in the Arab Republic of Egypt 1964/65, Cairo, Jan. 1972, pp. 18-20.

TABLE 8

Sampled Egyptian Rural households distributed according of total and average annual expenditures as of 1958/59

Income Brackets (£E)	No. of households			Total annual expenditure			Average total expenditure (£E per household) (X_2)
	Total	Per cent		Total (£E)	Per cent		
		% $\hat{F}(X_2)$	Cumulative $\hat{F}(X_2)$		%	Cumulative	
<25	42	1.38	1.38	864	0.19	0.19	20.57
25- <50	279	9.19	10.57	10994	2.45	2.64	39.41
50- <75	460	15.15	25.72	29044	6.47	9.11	63.14
75-<100	442	14.55	40.27	39028	8.70	17.81	88.30
100-<150	748	24.63	64.90	92007	20.51	38.32	123.00
150-<200	443	14.59 } 27.10	79.49	76490	17.05	55.37	172.66
200-<250	246	8.10 }	87.59	54608	12.17	67.54	221.98
250-<300	134	4.41 }	92.00	36425	8.12	75.66	271.83
300-<400	127	4.18	96.18	43013	9.59	85.25	338.69
400-<600	89	2.93	99.11	42352	9.44	94.69	475.87
600-<800	18	0.59	99.70	12737	2.84	97.53	707.61
800-<1000	4	0.14	99.84	3466	0.77	98.30	866.50
⩾ 1000	5	0.16	100.00	7541	1.70	100.00	1508.20
Total	3037	100.00	-	448569	100.00	-	147.70

Source: Collected and Computed from: The Central Committee of Statistics, Research of Sampled Family Budgets in the Egyptian Region 1958/59, Cairo, April 1961, pp. 194-196.

TABLE 9

Sampled Egyptian Rural households distributed according to total and average annual expenditures as of 1964/65

Income Brackets (£E)	No. of households			Total annual expenditure			Average total expenditure (£E per household) (X_4)
	Total	Per cent		Total (£E)	Percent		
		% $\hat{F}(X_4)$	Cumulative $\hat{F}(X_4)$		%	Cumulative	
< 25	12	0.27	0.27	233	0.02	0.02	19.42
25- < 50	125	2.79	3.06	4821	0.48	0.50	38.57
50- < 75	218	4.87	7.93	13999	1.39	1.89	64.22
75- < 100	344	7.68	15.61	30412	3.03	4.92	88.41
100- < 150	1007	22.48	38.09	126479	12.59	17.51	125.60
150- < 200	850	18.97	57.06	148849	14.82	32.33	175.12
200- < 250	613	13.68	70.74	137159	13.66	45.99	223.75
250- < 300	410	9.15	79.89	111849	11.14	57.13	272.80
300- < 400	466	10.40	90.29	159520	15.89	73.02	342.32
400- < 600	293	6.54	96.83	141181	14.05	87.07	481.85
600- < 800	84	1.88	98.71	57007	5.68	92.75	678.65
800- < 1000	24	0.54	99.25	21348	2.13	94.88	889.50
≥ 1000	34	0.75	100.00	51423	5.12	100.00	1512.44
Total	4480	100.00	-	1004280	100.00	-	224.17

Source: Collected and Computed from : The Central Agency of General Mobilization and Statistics, Research of Sampled Family Budgets in the Arab Republic of Egypt, 1964/65, Cairo, 1972, pp. 21-23.

Figure 1

Comparison of the Percentage Distribution of Urban Households by Expenditure Brackets

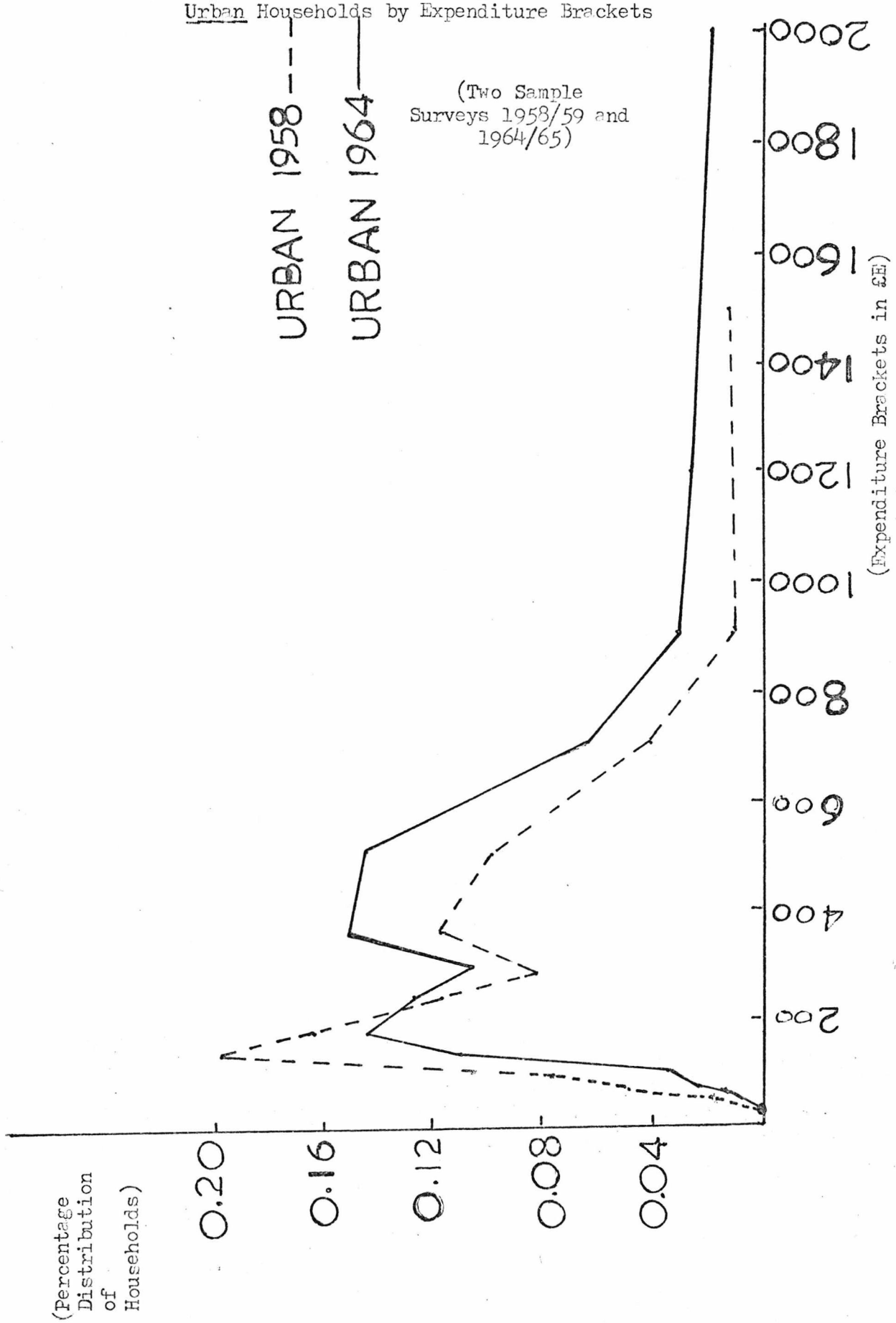


Figure 2

Comparison of the Percentage Distribution of Rural Households by Annual Expenditure Brackets

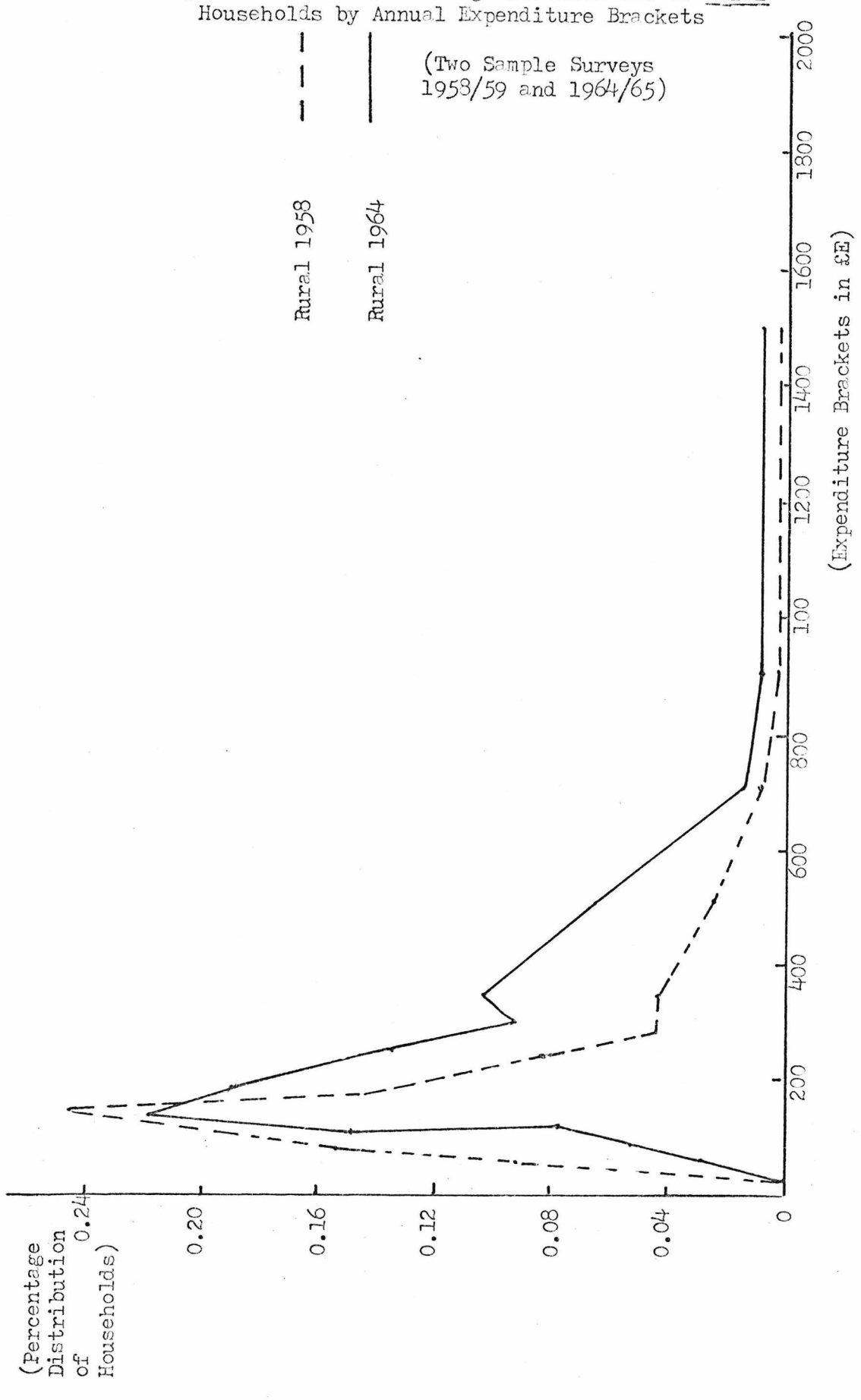
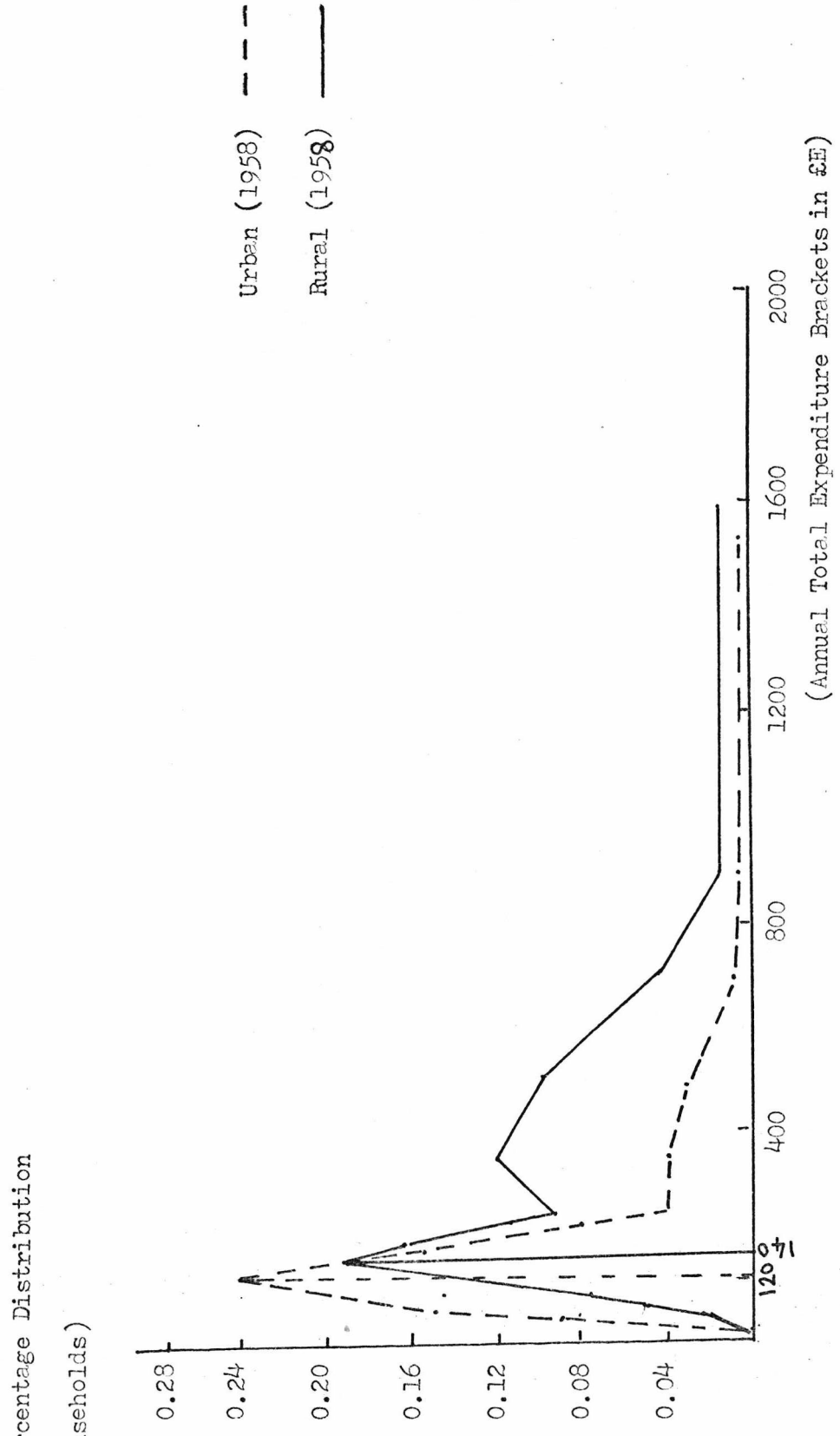


Figure 3

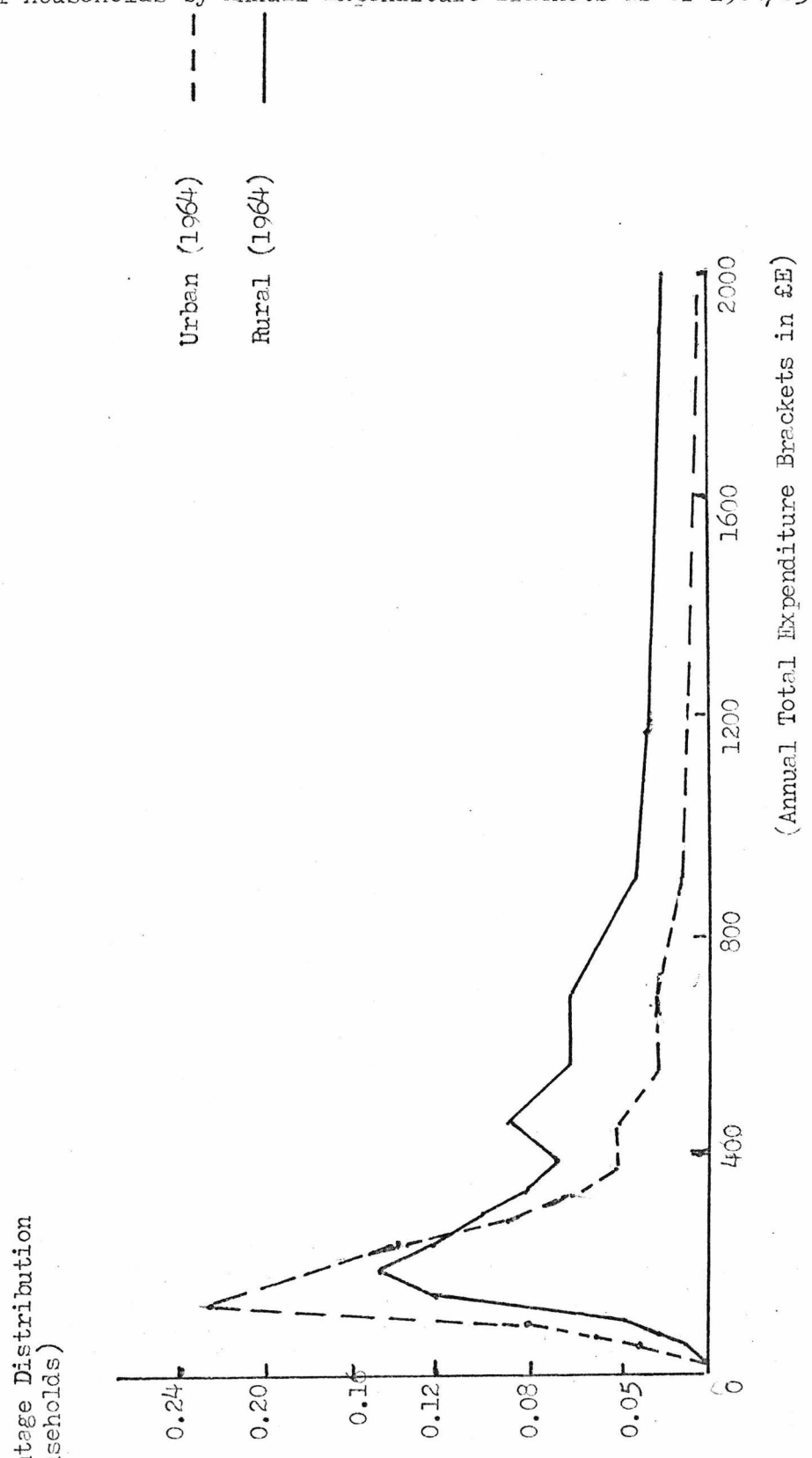
Empirical Frequency Functions of Egyptian Urban and Rural Households by Annual Expenditure Brackets as of 1958/59



Source: Tables 6 and 8

Figure 4

Empirical Frequency Functions of Egyptian Urban and Rural Households by Annual Expenditure Brackets as of 1964/65



Source: Tables 7 and 9

The gap between the urban and rural sectors was found to be ever widening. Hence, annual total expenditure per household for the urban sector increased from £E271 in 1958 to £E364 in 1964, compared to £E148 and £E224 for the rural sector. However, these results support the hypothesis that disparities of consumption expenditure distribution are more acute in the rural than the urban sector. But in order to test whether this shift is associated with a fall (or increase) in the overall degree of inequality of the distribution of total consumption expenditure among the households,[7] we need to compute some conventional summary measures of inequality.[8]

The inequality measures most commonly used in empirical work include: the coefficient of variation, which attaches equal weight to transfers at different income levels; the standard deviation of logarithms, which attaches more weight to transfers at the lower end of the distribution; the interquartile measures, which reflect the transfers affecting middle income classes (i.e. the middle 50% of income recipients) and the Gini coefficient which attaches more weight to transfers in the centre of the distribution than at the tails.[9]

Data in Table 10 show the main results of our computation of the different summary measures of inequality for the two sample distributions of consumption expenditures. In the light of these results,

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[7] Total annual expenditures, instead of incomes, are available for different income brackets. Regardless of savings, total annual expenditures are likely to be equivalent to income levels. Total annual expenditures under the Egyptian conditions account for nearly 95% of annual incomes.

[8] For more discussion on these measures of inequality, see Chapter 1, section 1.4.B.

[9] See: A. B. Atkinson, "On the Movement of Inequality", Journal of Economic Theory, Vol. 2, 1970, p. 245.

TABLE 10

Summary Measures of Inequality of Consumption Expenditure Distribution in Rural and Urban Egypt

Measures of Relative Dispersion	Rural			Urban		
	Sample distribution		Change	Sample distribution		Change
	1958/59	1964/65		1958/59	1964/65	
Mean Value (£E)	147.70	224.17	+76.47	271.26	364.17	+92.91
Standard deviation	120.3	180.1	+59.8	244.79	320.90	+76.11
Coefficient of Variation	0.81	0.80	- 0.01	0.90	0.88	- 0.02
Standard deviations of log.	0.37	0.34	- 0.03	0.41	0.26	- 0.15
Interquartile Ratio	0.97	0.91	- 0.06	1.14	1.12	- 0.02
Gini Coefficient	0.37	0.35	- 0.02	0.41	0.38	- 0.03

TABLE 11

T-test Applied to the Difference of Means of the Urban Sector (1958 & 1964); Difference of Means of Rural Sector (1958 & 1964); and to the Gap between the Rural and Urban Sectors.

Statistical Hypothesis	Difference of Means $(\bar{x}_i-\bar{x}_j)$ (£E)	Variance of the difference in sample means $S^2(\bar{x}_i-\bar{x}_j)$	$S(\bar{x}_i-\bar{x}_j)$	Degrees of Freedom d.f.	T	Significance
$u_1-u_2=0$	123.56	0.0077	0.088	6180	1404.09	sig.ato 0.005
$u_1-u_4=0$	47.09	0.0077	0.088	7623	535.11	" 0.005
$u_3-u_2=0$	216.47	0.0028	0.053	12369	4084.33	" 0.005
$u_3-u_4=0$	140.00	0.0028	0.053	13812	2641.50	" 0.005
$u_3-u_1=0$	92.91	0.0073	0.085	12477	1093.05	" 0.005
$u_4-u_2=0$	76.47	0.0032	0.057	7515	1341.58	" 0.005
$\hat{D}=0$	16.44	0.0105	0.102	19992	161.18	" 0.005

one could say that the shift in the frequency distribution of consumption expenditures in Egypt between 1958/59 and 1964/65 has been associated with a slight fall in the overall degree of inequality of the distribution of total consumption. Yet it should be noted that while the distribution shifted to the right, it remained highly peaked and positively skewed with a long tail to the right.

Differences of means [i.e. $(\bar{x}_i - \bar{x}_j)$ for $i \neq j$], in addition to the size of the gap between the urban and rural sector $(\hat{D})$, were statistically investigated and the results are presented in Table 11. The differences in average annual total expenditures of urban households in 1958/59 and 1964/65 [i.e. $(\bar{x}_1 - \bar{x}_3)$], and average annual total expenditures of rural households in 1958/59 and 1964/65 [i.e. $(\bar{x}_2 - \bar{x}_4)$] were statistically significant at the 0.005 level. However, this result does not necessarily imply better levels of living, since prices during the period 1958-1964, were subject to noticeable inflationary effects.

Also, differences of average total expenditures of rural and urban sectors $(\bar{x}_1 - \bar{x}_2)$, $(\bar{x}_1 - \bar{x}_4)$, $(\bar{x}_3 - \bar{x}_2)$ and $(\bar{x}_3 - \bar{x}_4)$ were statistically investigated. All T-ratios were found to be statistically significant at the 0.005 level, indicating a large difference in average annual total expenditures of the urban and rural sectors both in 1958/59 and 1964/65. Thus there not only existed a large gap between the rural and urban sectors but the size of that gap increased from £E123,56 in 1958/59 to £E140 in 1964/65.

This ever widening gap might be explained in terms of the government's economic policy, notably that of socio-economic planning. For instance, the largest share of investments of the First Five Year Plan (1960/61-1964/65) was used to execute projects located within

or nearby, urban centres.[10] Bridging the gap required a structural change in the government's socio-economic policy of planning with the emphasis on rural rather than urban development. However, the plans did not allow explicitly for regional development, one of the reasons being the lack of regional data. The Ministry of Planning was aware of this deficiency and took some steps to remedy the situation. Two reports surveying the basic features of growth in the governorates over the period 1964/65 to 1967/68 were issued in December 1968 and December 1969,[11] and it will be fruitful to evaluate the data in these two reports.

Here we investigate the causes of variations in consumer spending between different governorates and the pattern of income distribution among governorates.[12]

The available regional data did not support the hypothesis of a decreasing marginal propensity to consume, at least within the range of observed disposable income per head, and we may safely assume that consumption is linearly related to disposable income. Secondly, the data did show no evidence that the consumption relation shifts due to the degree of urbanisation. In other words, the available data did not support the hypothesis that the intercept term in the consumption function is affected by the degree of urbanisation.

Thirdly, the marginal propensity to consume in urban governorates was significantly higher than the marginal propensity to consume in rural governorates. This divergence could be explained by a stronger demonstration effect and more varied needs in urban areas as compared

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[10] Ministry of Planning, Follow-up Report 1965/66, Cairo, 1967.

[11] Ministry of Planning, The Basic Features of Regional Growth in Egypt, December 1968, December 1969, Cairo. In what follows this report will simply be referred to as the Second Report.

[12] For full investigation, see Appendix 5.

to rural areas. Therefore we may conclude that consumption per head was reasonably well defined as a linear function of per capita disposable income, that consumption was higher in urban governorates than it was in rural governorates (and consequently saving was lower) due to a higher propensity to consume, and that autonomous consumption, i.e. the intercept term in the consumption function, did not affect by the degree of urbanisation. Also, Egypt's regional data provided no evidence of decreasing marginal propensity to consume as income increased.

The income distribution between different governorates did not change much between the years 1964/65 and 1966/67, but comparing 1967/68 to 1964/65 it appears that the inequality increased in the lower income governorates but narrowed between the higher income governorates, namely: Alexandria and Cairo.

These findings are somewhat surprising since they conflict with the current observation of the concentration of economic activities in few big urban centres, particularly Cairo and Alexandria. It is true that the pattern of urbanisation in developing countries generates slums in the big cities, where the way and standard of living are not different from those in rural underdevelopment areas. This could, partly, justify the low estimated values of the concentration ratios.[13] But we still think that these findings are very surprising, which leads us to question the reliability of the data used.

6.3. THE CONSUMPTION BASKETS OF THE RURAL POOR IN EGYPT

In this section, we attempt to sketch a profile of rural poverty. The physical composition of consumption baskets for the

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[13] The estimated ratios for 1964/65, 1966/67 and 1967/68 were 0.158; 0.158; 0.169 respectively. See Appendix 5.

rural poor in Egypt can be obtained directly from the first family budget survey carried out in 1968/59. This survey shows the per capita purchases for each good in each expenditure class. The two lowest expenditure brackets, <£E25 and £E≤50 per annum, are generally considered to comprise the bulk of Egypt's rural population, namely the "landless peasants" and the "poor peasantry".

The relevant figures relating to the physical composition of subsistence bundles for the rural poor, as revealed by the family budget data of 1958/59, are presented in Table 12. Comparing these figures with the "Food and Agriculture Organisation" estimate of a minimum diet under Egyptian conditions reveals a wide gap.

In order to be able to compare the calorie-protein contents of the subsistence bundles for the rural poor, with the recommended minimum protein-calorie requirements for working people, we have calculated the subsistence consumption levels of the rural poor falling in the expenditure class of "less than £E25 per annum". The results are presented in Table 13. These calculations suggest that the consumption levels of the rural poor are not sufficient to meet the requirements for working people:

	recommended levels	observed levels	level of deficiency
Calorie intake	3,000	2,026	-974
Protein (in grammes)	81	59.5	-21.5

Thus, in spite of the crudity of the empirical evidence, it would seem safe to conclude that those sections of the rural population falling within the lowest expenditure bracket were living below the bare subsistence minimum. Moreover, this evidence of protein-calorie deficiencies should help to relate nutritional deficiency patterns to the socio-economic characteristics of the

TABLE 12

Subsistence Bundles for the Rural Poor in Egypt (Annual per capita figures)

Commodities	Quantities consumed by people in the expenditure bracket of ⟨£E25 per annum, in 1958/59 (1)	Quantities consumed by people in the expenditure bracket of £E25⟨50 in 1958/59 (2)	Food & Agriculture Organisation estimates of per capita requirements of food stuffs, in 1959 (3)
	(in Kilogram except eggs in number)	(in Kilogram except eggs in number)	(Kilogram per year)
Wheat	32.3	39.7	60.5
Maize and millet	107.4	109.0	140.3
Flour	19.9	16.0	n.a.
Rice and potatoes	13.4	14.0	4.4
Beans and lentils	5.9	7.3	29.4
Meat, poultry and fish[(a)]	6.7	7.6	4.8
Milk and cheese	8.9	10.8	18.1
Eggs	12.0	14.0	n.a.
Onions	10.7	9.5	15.5
Tomatoes	10.5	9.7	14.9
Butter and animal fat	1.6	2.1	n.a.
Citrus fruit and dates	3.6	5.3	29.7
Sugar and molasses	9.2	10.8	11.5
Vegetable oils	2.5	2.3	4.4

Sources and Note: Columns (1) and (2): Figures calculated from: The Family Budget Survey 1958/59, Cairo, 1961, pp. 332-333.
Column (3): estimates of The Food and Agriculture Organisation Regional Office in Cairo.

(a) The excess of the observed average annual intakes per head of meat, poultry and fish in the 1958/59 survey over the Food and Agriculture Organization estimate of the minimum per capita requirements of these food items is surprising, since Egypt is generally reported to be one of the animal protein deficient countries. This may be due to an "overstatement" of the consumption of meat, poultry and fish by the rural poor as recorded in the Survey 1958/59.

TABLE 13

Calorie-protein Contents of the Subsistence bundles of the rural poor, 1964/65

Commodity Group	Daily Calorie intake		Daily Protein intake	
		%	in grammes	%
Cereals and Starch	1420	70.1	42.5	71.4
Pulses	158	7.8	10.8	18.2
Meat, fish & eggs	45	2.2	3.5	5.8
Fats and oils	143	7.1	0.1	0.2
Milk and dairy products	20	1.0	1.1	1.8
Vegetables	17	0.8	1.1	1.8
Fruits	26	1.3	0.4	0.8
Sugar and sugar products	197	9.7	-	-
Total	2026	100.0	59.5	100.0

Source: Computed from: The Family Budget Survey Data for 1964/65

rural population.

The question now is who are the rural poor? And what are their means of subsistence?

To answer the first part of the question imposed above, we refer to the employment situation since the poor are basically the landless peasants and very small farmers who depend almost entirely on their labour for subsistence.[14] Generally speaking, the agricultural labour force can be divided into three major categories: the permanent agricultural workforce, the temporary (or seasonal) labour and the openly unemployed. According to the Fourth Agricultural Census of 1961, 64% of agricultural labour force were family labour (landowners and members of their household), 9% permanent wage labour, 24% temporary labour and 3% unemployed.[15] The majority (73% in 1961) of family labour are employed on small size farms (below five feddans), while permanent wage labour and temporary labour find employment on medium and large farms.

The category "permanent agricultural labourers" mainly include those who perform the manual operations on the fields. However, on large farms the category "permanent wage labourers" includes all groups of specialised agricultural labourers, such as the "Kallaf" who looks after the livestock, the tractor driver and other farm machine operators.

Permanent labourers may have a low standard of living, but at least they are more or less fully employed throughout the year and hence earn a steady income all the year round. Nonetheless, the

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[14] It is beyond the scope of this study to provide a profile of the employment situation in rural Egypt. See, for example: B. Hansen, "Employment and Wages in Rural Egypt", American Economic Review, op. cit.; and International Labour Office, Rural Employment Problems in the UAR, op. cit.

[15] Fourth Agricultural Census, 1961, Cairo, 1966, Tables 58.

nature of their remunerations tend to vary a good deal from region to another and in many cases they paid partly in kind and partly in cash according to the prevailing custom and tradition.

Temporary labourers have much less of both standards of living and source of income than that of permanent labourers. So, in a country where underemployment is pronouncedly high,[16] and seasonal fluctuations are a permanent feature of the demand for labour, one would expect that incomes of temporary labour must be very low. At this point, it is important to distinguish between two categories of temporary labourers: farm temporary labourers engaged in temporary or casual employment in their village, and migratory or "tarahil" labourers who are usually recruited in large gangs to work outside their village, either on big estates or for the maintenance of canals and other public works on a temporary or seasonal basis. It is our concern here to focus on the group of "tarahil" labourers as they actually represent the poorest of the rural poor and perhaps the most neglected section of the agricultural labour force.

Historically, the tarahil labour was a product of the development of capitalism in Egyptian agriculture. The transition from a "feudalist" to a "capitalist" agrarian system following the establishment of private land ownership in the second half of the 19th century has resulted, through the parallel processes of concentration of large ownerships and fragmentation of small ones together with rapid growth of population, in the marginalisation of increasing members of peasants who had no claim to land and had to join the ranks of the

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16 A majority of private and official experts had estimated surplus labour in the agricultural and services sector to range from 25%-40%. See Chapter 5, footnote 43.

landless. The tarahil system first began by the State recruiting gangs of peasants to work on the irrigation system under the notorious system of "corvée", forced labour. Following the abolition of corvée in 1884, a specialised group of middlemen, "mukawel anfar", took over the responsibility of recruiting these peasants either to work on large estates or for public works at certain seasons of the year. Successive land reform laws have enacted for the benefit of tarahil labourers.[17] But the gap between legislation and reality remained wide. As we mentioned earlier, minimum wage and working hours legislation were hardly enforced particularly in the 1950s. Moreover, the loose definition of a "peasant" who is eligible for the membership of the union led to the domination of these organisations by middlemen, and, sometimes, even landowners rather than labourers.[18] Thus, by 1966 the General Union of Agricultural Labourers with its 4,057 branches had only 37,650 labourers or 10% of the total agricultural labour force.[19]

Finally, it is worth noting that of 700 labourers interviewed,[20] 18% were women, 45% were children (less than 15 years old). Illiteracy rate was 79% among males and 92% among females, which is much higher than the average for rural Egypt (65% on average in 1970). Almost

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17 The minimum wage legislation of November 1952 was primarily enacted for their benefit as it fixed the working day at eight hours. In 1964 Law No. 62 instituted the right of agricultural labourers to form trade unions.

18 F. Abdel-Fattah, The Contemporary Village: Between Reform and Revolution, 1952-1970, op. cit., p. 250.

19 H. Hussein, "Tarahil Labourers on the New Land", Al-Taliaa, January 1971, p. 21 (in Arabic).

20 This was based on a survey of a tarahil community carried out, in 1972, by the Department of Sociology, Cairo University. For details see: Hikmat Abuzeid, "The Economic and Social Conditions of Tarahil Labourers", Al-Katib, Vol. 15, No. 166, January 1975) (in Arabic).

all the sample population were landless and owned no livestock or any other assets. Their sole source of income was their wage. A typical labourer joined three to four "tarahil" every year totalling 110 days on average, and was unemployed for 255 days a year. At an average monthly wage of £E7.50 and given the number of days worked, per capita income amounted to £E28 a year or £E2.30 a month. Living conditions in the camp were "inhuman": they slept in cattle sheds, had no medical care, drank muddy water and suffered from acute malnutrition. It is no wonder that many of these labourers never return to their village.

6.4. THE CONSUMPTION FUNCTION

A. Introduction

The relation between aggregate consumption and aggregate income generally termed the consumption function, has occupied a major role in economic thinking ever since Keynes made it a corner stone of his theoretical structure in the General Theory. Of all the strands of Keynesian thought his formulation of consumption behaviour has been subjected to a very intensive examination and extension.[21]

For the purpose of our model, we have decided to use two alternative disaggregation of aggregate consumption. The first divides total consumption by type of consumer and by commodity into: (a) household food consumption; (b) household non-food consumption; and (c) government consumption.

The second divides total non-food consumption, of both household

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21 R. Ferber, "Research on Household Behaviour", American Economic Review, March, 1962; D. B. Suits, The Determinants of Consumer Expenditure, A Review of Present Knowledge in Commission on Money and Credit: Impact of Monetary Policy, Prentice Hall, 1963; and H.G. Johnson, Essays in Monetary Economies, George Allen and Unwin Ltd., London, 1967.

and government, into: (a) consumption of industrial goods; and (b) consumption of services. That is, food consumption is common to both classifications.

Furthermore, while multiple regression techniques are used in estimating the parameters of the household and government consumption functions, an input-output approach is used to estimate consumption of industrial goods and services. The hypothesis is that this latter residual approach gives a better description of the pattern of consumption behaviour in the case of industrial goods and services, and therefore provides us with a better forecasting tool in the medium term. We will start by discussing the regression estimates, and this will be followed by a detailed analysis of the input-output residual estimates and the hypothesis underlying them.

B. Household Consumption

The micro theory of consumer's choice shows demand for a commodity as a function both of the relative price of the commodity and the consumer's disposable income. By analogy total demand for a commodity or a group of commodities would be a function of relative price and aggregate household disposable income.

Starting from the a priori theoretical specifications outlined above certain modifications are introduced in estimating the household consumption function. Since population is a major factor affecting consumption in Egypt it is entered as an independent explanatory variable. Furthermore, considering the major changes in income distribution which have taken place since 1952, two proxy variables are tested. The first is an index of the ratio of agriculture to industrial wage rates. The hypothesis behind this variable is that given the difference between rural and urban consumption patterns, a faster growth of average wages in agriculture might favour a faster

growth of food consumption. The second proxy variable is the conventional one, that is, the ratio of wage to non-wage incomes. Although the coefficients of both these variables have the right sign, they are statistically insignificant in explaining Egyptian household consumption functions. Therefore, these variables are consequently dropped.

The functions which were finally chosen are the following:

$$C_t^f = a_1 + b_1 \left(\frac{Y^p}{pOp}\right)_t + c_1 (pOp)_t + d_1 (tOt)_t^i \qquad (1)$$

$$C_t^{i+s} = a_2 + b_2 \left(\frac{Y^p}{pOp}\right)_t + c_2 (pOp)_t + d_2 (tOt)_t^i \qquad (2)$$

where:

C^f and C^{i+s} = food and non-food (industrial and services) consumption respectively, at constant 1959/60 prices and in £E million.

$\left(\frac{Y^p}{pOp}\right) = Y^{p.p.c.}$ = per capita private income (at constant 1959/60 prices, £E)

= GNP - Government Net Income

Household Disposable Income + Business Retained Profits = GNP - (Government Current Receipts - Transfers)

(pOp) = population size (in millions)

$(tOt)^i$ = internal terms of trade, as measuring by the ratio of food to industrial prices $\left(\frac{p^f}{pi}\right)$, 1959/60 = 100, an index.

C. Government Consumption

As was explained in an earlier chapter, a number of factors led to the sharp rise in government consumption, foremost among which were defense expenditures, and the increasing direct involvement of the government in the social and economic life of the country. Such factors are not necessarily a function of growth in GNP. However, by

way of simplification, and for lack of quantifiable variables to explain the growth in government consumption, it is related to GNP.[22] The government consumption function, along with two other functions (one for total household consumption and the other for total consumption of both households and government) are given below. The latter two functions are given primarily for purposes of comparison:

$$C_t^g = a_o + a_1 (GNP)_t \qquad (3)$$

$$C_t^h = a_o + a_1 (Y)_t^{p.p.c.} \qquad (4)$$

$$C_t^t = a + b (GNP)_t \qquad (5)$$

where:

C^g, C^h, C^t = government, household, and total consumption respectively.

$Y^{p.p.c.}$ is defined as above.

GNP = Gross National Product.

(All values are at constant 1959/60 prices, and in million £E).

D. Consumption of Industrial Goods

A major characteristic of Egypt's import substitution industrialisation was the balancing role played by consumption in the industrial supply-demand equation. The level and allocation of investment within the industrial sector and, accordingly, the supply of industrial goods, were determined exogenously through short and medium term plans (especially since the beginning of the 1960s). A

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22 Alternatively we will be treating government consumption and income as exogenously determined, when testing alternative policy designs.

basic assumption underlying the planning of industrial growth was that the newly established industries would first begin by substituting for imports, and then build up exports. This implies that industrial exports would be determined as a residual, after all categories of domestic use had been satisfied.

In theory, this is tantamount to assuming that the potential external demand curve for Egypt's industrial exports is infinitely elastic, which is not an unrealistic assumption given the small size of these exports. However, the ex-post pattern of export behaviour was substantially different. First, given the overvalued exchange rate,[23] the domestic prices of the newly produced industrial goods were significantly above world market prices, and this was detrimental to the country's ability to compete in foreign markets. Secondly, a combination of factors retarded the growth of exports. Among these factors were the lack of experience of industrial entrepreneurs,[24] about export markets, the inadequacy of an export infrastructure, the domestic orientation that was built into the pattern of industrial growth and poor product quality. As a result of this the growth in supply outstripped demand and there emerged large quantities of industrial goods that were neither sold at home nor exported.

In the long run, such large surpluses of industrial goods might serve as a primum mobile in the Hirschman sense, that is, they might stimulate efforts to promote industrial goods. But in the short and medium term the emergence of these surpluses led first to the accumulation of large inventories, secondly to the dumping of some of them on to the domestic market, and thirdly to a slowdown in

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[23] This point will be returned to when discussing export functions.

[24] A large number of them were newly appointed ex-army officers.

production - in that order. This third step was usually undertaken with some measure of reluctance and after a substantial time lag because of its impact on employment and growth.

However, what concerns us at this point is the dumping of the excess commodities on to the domestic market. To get rid of some of the unwanted stocks, industrial planners used all sorts of sales promotion methods, such as instalment plans, price reductions, and the like. In addition, in view of the fact that the industrial sector was both owned and controlled by the government, some of the accumulated stocks were directly consumed by the government. In other words, it was consumption rather than exports which equated aggregate demand with aggregate supply. Therefore, a residual specification of the equation for consumption of industrial goods would provide an appropriate description of its behavioural pattern, and an accurate tool for its estimation.

The methodology used in deriving the input-output equation for total (i.e. households + government) consumption of industrial goods is based on the identity of the input-output row and column sums. Algebraically:

$$X_t^i = d_t^i + C_t^i + I_t^i + E_t^i - \Delta S_t^i \equiv i_t^i + V_t^i + M_t^i + T_t^{ii} \qquad (6)$$

d = intermediate sales

C = total consumer's demand (both households and government)

I = investment demand

E = export demand

ΔSt = changes in stocks

i = intermediate purchases

V = value-added

M = imports

T^i = indirect taxes

(The superscript i refers to the sector, and the subscript t to the time period.)

$$\left.\begin{array}{l}\text{The ratio of intermediate sales of the products of sector i, to final demand for it (at any time period)}\end{array}\right\} = \alpha_t^i = \frac{d_t^i}{C_t^i + I_t^i + E_t^i} \qquad (7)$$

And

$$\left.\begin{array}{l}\text{The ratio of intermediate purchases by sector i, to value added in that sector (at time t)}\end{array}\right\} = \beta_t^i = \frac{i_t^i}{V_t^i} \qquad (8)$$

Substituting equations 7 and 8 in identity 6, we get:

$$(1+\alpha_t^i)(C_t^i+I_t^i+E_t^i) - \Delta S_t^i = (1+\beta_t^i)(V_t^i) + M_t^i + T_t^{ii}$$

Thus:

$$(1+\alpha_t^i)\ C_t^i = (1+\beta_t^i)(V_t^i) + M_t^i + T_t^{ii} + \Delta S_{tt}^i - (1+\alpha_t^i)(I_t^i+E_t^i)$$

Then:

$$C_t^i = \frac{(1+\beta_t^i)}{(1+\alpha_t^i)}(V_t^i + \frac{1}{(1+\alpha_t^i)}\left\{M_t^i + T_t^{ii} + \Delta S_{tt}^i\right\} - I_t^i - E_t^i \qquad (9)$$

In order to simplify as well as to standardise all input-output functional specifications we replace the coefficient $\frac{(1+\beta_t^i)}{(1+\alpha_t^i)}$ by $(\alpha_1 ci)$; and the coefficient $\frac{1}{(1+\alpha_t^i)}$ by $(\alpha_2 ci)$ where the second and third letters in $(\alpha_1 ci)$ and $(\alpha_2 ci)$ refer to the name of the variable to be estimated, and the name of the sector respectively. Thus,

$$C_t^i = \alpha_1 ci(V_t^i) + \alpha_2 ci\left(M_t^i + T_t^{ii} + \Delta St_t^i\right) - I_t^i - E_t^i \qquad (9')$$

This equation represents the input-output specification for aggregate consumption of industrial goods.

Needless to say, the estimation of $(\alpha_1 ci)$ and $(\alpha_2 ci)$ requires the estimation of (d_t^i) through the solution of an input-output

table for each year. The formula used for that is

$$[A] \cdot (X_t^i) = (d_t^i)$$

where:

[A] = the input-output matrix of production coefficients.

X = the vector of sectoral gross output.

d = the vector of sectoral intermediate sales.

As for $(i)_t^i$, it is derived as follows:

$$(i)_t^i = (X)_t^i - (v)_t^i$$

With $(d)_t^i$ and $(i)_t^i$ derived as explained above, they would be plugged in equation 7 and 8 and we would then be in a position to estimate the values of $(\alpha_1 ci)$ and $(\alpha_2 ci)$.

Finally, given the estimated values of $(\alpha_1 ci)$ and $(\alpha_2 ci)$, and given the values of our model's endogenous variables = V^i, M^i, E^i and the exogenous variables = I^i, ΔS_t^i , T^{ii}, we would be in a position to estimate aggregate consumption of industrial goods, i.e. C^i, from equation (9).

E. Consumption of Services

A consumption function similar to that for industrial goods is specified for services. The rational of the input-output specification in the case of services is that the growth of the great bulk of services output was but little related to ex-ante demand for services. However, the equation for services consumption is much simpler than its industrial counterpart. This is because in the case of services the terms relating to exports, imports, investment and changes in stocks are excluded on the grounds that services output is consumed domestically and is not used for fixed or inventory investment. Accordingly, the services function becomes:

$$C_t^s = \alpha_1 cs\ (V)_t^s + \alpha_2 cs\ (T)_t^{is} \qquad (10)$$

where:

C^s = total consumption of services (by households, and government).

V^s = value added in services sector.

T^{is} = indirect taxes on services.

(All variables are at constant 1959/1960 prices).

CHAPTER 7

EGYPTIAN ECONOMIC GROWTH

"An Econometric Model"

7.1. INTRODUCTION

This chapter presents the specification and estimation of the structural equations of a macro-growth model,[1] with the aim of depicting the basic structure and structural transformation which took place in Egypt's economy during the period in question.[2]

In an earlier chapter we analysed some of the general policies which constituted the import substitution strategy. We delineated the major roles played by those policies in building up the savings and trade gaps. The trade gap consisted of foodstuffs and capital goods gap; the former fed by wage and tax policies, the latter the product of investment policies. The savings gap resulted from three distinct trends: (i) the budget deficit cut deep into aggregate savings; (ii) industrial incomes policy cut into the sources of private savings; (iii) the allocation of investment to projects with a long gestation period lead to a rise in the capital-output ratio. While the existence of any one of these disequilibrium might have been combated without halting growth, their simultaneous emergence caused the rate of growth to slow down.

However, the main purpose of the import substitution strategy was to maximise growth without entailing much sacrifice on current consumption, through the assistance of external finance and aid. It

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1 For more details, see Appendix 6.

2 As a consequence of the outbreak of the Arab-Israeli war in 1967 which brought major distortions in the behaviour of most of the system's variables our estimates are restricted to the period 1952/53-1966/67.

is in this light that the strategy must be evaluated.

One might argue that the strategy's built-in dependence on foreign resources was so overwhelming that the strategy had become largely self-defeating and had precipitated the slow down of growth. Nevertheless, this is not our concern here. Regardless of whether the difficulties faced by the strategy were a direct outcome of its deliberate policies or were reached by default, the strategy created an economic structure that was dependent on a steady and rising inflow of foreign resources. But the inflow of these resources decreased and became harder to obtain by the mid-1960s.

Before discussing the structural equation's specifications, the following section attempts to explain the way in which the complete model functions, its underlying structural interrelations and its causal ordering.

7.2. MODEL FUNCTIONS, STRUCTURAL INTERRELATIONS AND CAUSAL ORDERING

A revealing and compact approach to summarising the model's operational features is to represent it as an ordered arrow diagram. Such a diagram combines Tinbergen's arrow diagram technique with Simon's causal ordering technique and provides an expository device for the model's structure and its causal relations.[3] Furthermore, this kind of arrow diagram is helpful in the planning and designing of economic policies. It assists in the selection of appropriate

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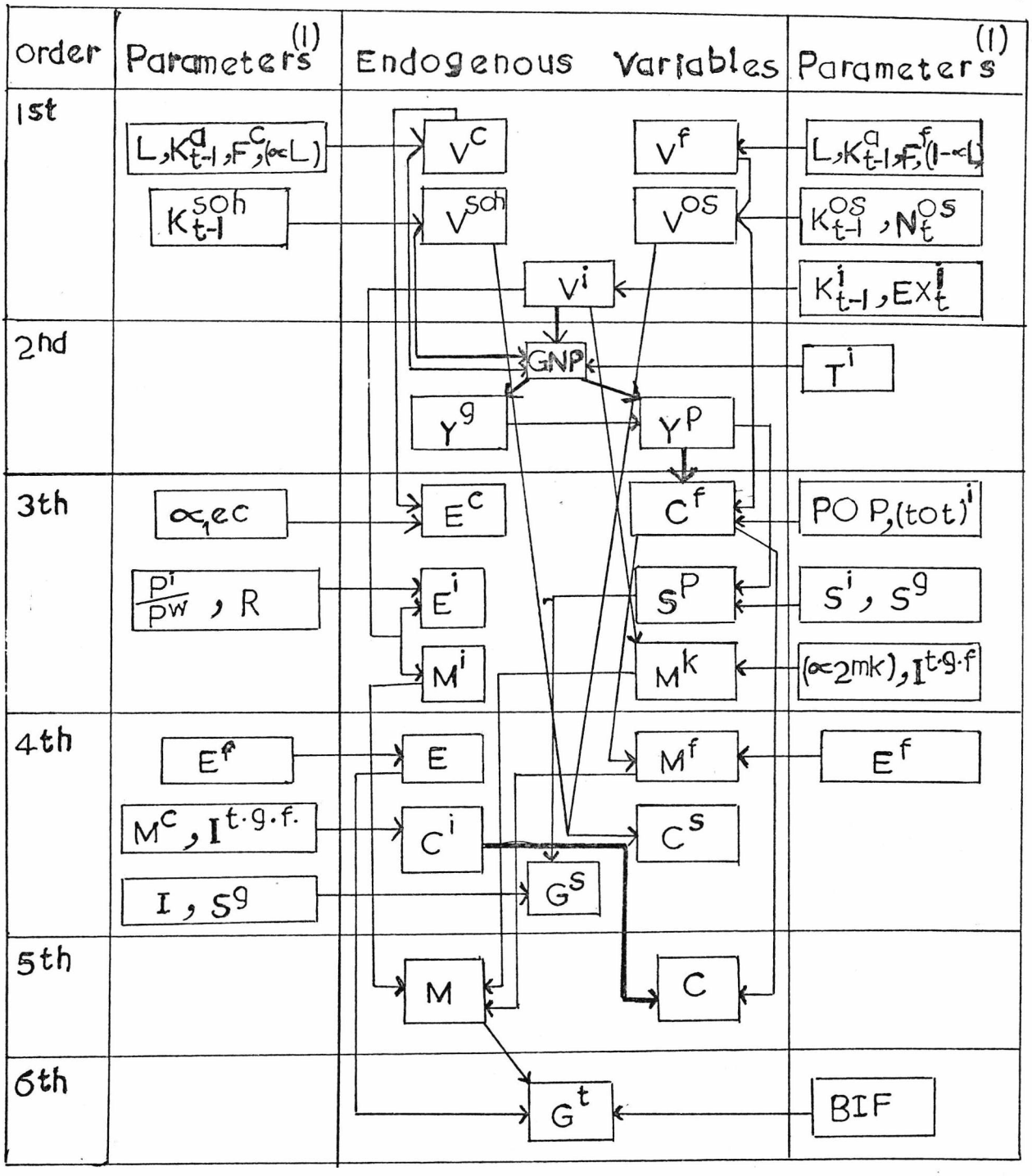
[3] For a brief discussion of the use of arrow diagrams, see: B. Hansen, Lectures in Economic Theory, Part 2, Lund: Studentlitteratur, 1967. For the idea of the causal ordering of models, see: Herbert A. Simon, "Causal Ordering and Identifiability" in W. C. Hood and T. C. Koopmans (eds.) Studies in Econometric Method, New York-London, 1953, reprinted also in Herbert A. Simon, Models of Man, New York, 1961.

FIGURE 1

ARROW DIAGRAM OF MODEL STRUCTURE & CAUSAL ORDERING



Notes: (1) The term parameters refers to: (i) exogenous variables; (ii) lagged endogenous variables; and (iii) some government Controlled structural parameters and endogenous variables which are candidates for use as policy instruments.

(2) The general rule for the establishment of the causal ordering is: Endogenous variables of the first order are such endogenous variables which are influenced only by parameters (or exogenous variables) and/or by each other mutually. Endogenous variables of the Second Order are such endogenous variables which are influenced only by parameters (exogenous variables) and/or endogenous variables of first and second orders. Third Order endogenous variables are influenced only by parameters (endogenous variables) and/or endogenous variables of the third and lower order; etc, etc.

policy instruments to achieve assigned policy targets. However, in this section we concentrate on using the diagram as a framework for discussion of the model's structure. From this point of view, the interpretation of the diagram is fairly straightforward. We need only to add some of the implicit hypotheses underlying it.

The diagram (see Figure 1) shows that net output in agriculture, industry, and social overhead services is determined by the initial stocks of capital and the total cropped area, together with some other inputs as fertilisers in the case of agriculture. As stated latter net output in "other services" is influenced more by labour inputs whose size is determined as a residual. The sum of sectoral value-added determines GDP at factor cost and, given the structure and rates of indirect taxes and the balance of factor payments abroad, GNP is readily obtained.

Capacity output is dependent on land and capital stocks at the beginning of the year, which are predetermined variables. The only non-predetermined variable influencing capacity output in year t is labour in other services. Nevertheless, actual output fluctuates with factors such as capacity utilisation,[4] fertilisers (positive), the degree of cotton pest infection (negative) as well as with other factors influencing land productivity in agriculture. An important policy variable that affects the aggregate value productivity in agriculture is the allocation of land between cotton and foodstuffs. The model does not allow for the assessment of the impact of capital allocation within the industrial sector except in one indirect case. The specification of the capital goods import function shows how a

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[4] There is no significant underutilisation of capacity in sectors other than industry.

rise in the share of the capital good's subsector in total industrial value-added would alleviate the foreign-exchange constraint and thus contribute to growth.

Once GNP is known then government net income is ascertainable since this is assumed to be it.[5] Alternatively, we treat both government income and expenditure as exogenously determined in order to use these government variables as policy instruments in designing economic policies.

Disposable private income is determined by Gross National Product together with government net income. Given such exogenous variables as population, internal terms of trade between the foodstuffs and industrial sectors and the industrial after-wage surplus, disposable private income determines both foodstuffs consumption and private savings. At the same time exports of cotton and industrial goods and imports of intermediate and capital goods are determined by the sectoral production functions together with gross fixed investment.

Figure 1 also shows that foodstuff production is determined in the first round while its consumption is determined in the third round. Foodstuff production and consumption determine imports of foodstuffs. As foodstuff exports is treated as an exogenous variable in the model, it might then be regarded as negative foodstuff imports.

Once sectoral production, exports, and imports are known it is possible to determine consumption of industrial goods and services by using supply-demand balance equations for these two sectors. These, together with foodstuff consumption, determine total consumption.

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[5] In fact the relationship between the growth in government income and in GNP is quite loose, but we used it only as an indicator of the trend.

7.3. THE STRUCTURAL EQUATION'S SPECIFICATIONS

A. Model Formulation

The structural model will be fitted with five functions:

(i) Production function

(ii) Consumption function

(iii) Export function

(iv) Import function, and

(v) Savings function.

The exogenous and lagged predetermined variables are:

(a) Chemical fertilisers used in cotton and food production (F^c and F^f).

(b) Capital stock: in irrigation and drainage (K^a_{t-1}); in industry (K^i_{t-1}); in social overhead services (transport and communication, housing, public utilities) K^{soh}_{t-1}; and in other services (commerce and finance, government, home services) K^{os}_{t-1}. (All laged one year.)

(c) Population size (POP)

(d) Internal terms of trade between the foodstuffs and industrial sectors (i.e. = $\frac{\text{foodstuffs prices}}{\text{industrial prices}} = \frac{p^f}{p^i}$).

(e) Indirect taxes: on industrial goods (T^{ii}); on services (T^{is}); on cotton (T^{ic}); and on capital goods (T^{ik}).

(f) Changes in: industrial stocks (ΔST^i); and in stocks of raw cotton (ΔST^c).

(g) Time (t).

(h) Foodstuffs exports (E^f).

(i) Balance of payments on current account (BOP).

(j) Balance of invisible trade including net factor payments abroad (±)/BIT).

(k) Balance of net factor payments abroad (B.N.F.P.).

(l) Labour: in agriculture in initial year (N_o^a); in industry in initial year (N_o^i); in social overhead services in initial year (N_o^{soh}); and in other services in initial year (N_o^{os}).

(m) Unemployed workers counted as part of the labour force (civilian) (U_e).

(n) Investment in: irrigation and drainage (I^a); in land reclamation and water control (such as the High Dam) ($I^{l.w.}$); in industry (I^i); in social overhead services (I^{soh}); in other services (I^{os}); and in inventories (I^v).

(o) Imports of consumer goods (M^c).

(p) Implicit price deflator for industrial value-added (P^d); world market prices, as represented by U.S. industrial wholesale price index (P^w); and the price of foreign exchange (R).

The endogenous variables of the model are:

1.) Value-added in: cotton sector (V^c); foodstuffs sector (V^f); the agricultural sector (V^a); the industrial sector (mining, manufacturing, electricity, and construction) (V^i); social overhead services (V^{soh}); other services (commerce, finance, government) (V^{os}); and in services sector (V^s).

2.) Gross Domestic Product (at factor cost) (GDP).

3.) Gross National Product (GNP).

4.) Total indirect taxes (T^i).

5.) Net government income (Y^g).

6.) Private income (i.e. household disposable income + undistributed industrial profits) (Y^p).

7.) Consumption: of foodstuffs (C^f); of industrial goods (C^i); of services (C^s); of industrial goods and of services by household $[C^{h(i+s)}]$; by government (C^g); and total consumption (C).

8.) Private savings (i.e. household and business savings) (S^p);

government budget (current) savings (S^g); and total savings (S).

9.) Industrial after-wage surplus (i.e. industrial value added - total industrial wages) (S^i).

10.) Exports of: raw cotton (E^c); industrial goods (E^i); and total commodity exports (E^t).

11.) Imports of: foodstuffs (M^f); intermediate goods (M^i); capital goods (M^k); and total imports (M).

12.) Savings gap (G^s); and trade gap (G^t).

13.) Total investment (I^t); and total gross fixed investment ($I^{t.g.f.}$).

14.) Net capital stock in: irrigation and drainage (K^a); in industry (K^i); in social overhead services (K^{soh}); and in other services (K^{os}).

15.) Cropped area allocated to: cotton cultivation (L^c); foodstuffs crops (L^f); and total cropped area (L).

16.) Labour in: agriculture (N^a); industry (N^i); social overhead services (N^{soh}); other services (N^{os}); and total employed labour (N^e).

17.) Excess capacity output in industry (Ex^i_t).

18.) Industrial capacity output ($V^{i.c.}$).

All endogenous variables are given in constant 1959/60 prices.

B. The General Features and Estimation Methods of the Model

(i) The model is akin to the "two-gap" models, vintage in the sense that one of its major objectives is to project the ex-ante saving and trade gaps. Another objective is to test alternative strategies aiming at reducing the need for large amounts of foreign aid.

(ii) It is completely recursive. This feature could be deduced from the triangular shape of the endogenous variables matrix of coefficients[6]

[6] The triangular matrix of coefficients of the endogenous variables does not necessarily mean a corresponding triangular matrix of predetermined variables. This latter matrix is not triangular in the case of our model. This fact is important for the selection of policy instruments to achieve certain policy targets as will be seen in Chapter 9.

Figure 2

Coefficients Matrix of Endogenous Variables (Structural Equations only)

	Value-added				Consumption		Net Income	Exports		Imports			Consumption		Savings
	Cotton	Foodstuffs	Industry	Services	Foodstuffs	Government	Government	Raw Cotton	Industrial goods	Foodstuffs	Intermediate goods	Capital goods	Industrial goods	Services	Private
	V^c	V^f	V^i	V^s	C^f	C^g	Y^g	E^c	E^i	M^f	M^i	M^k	C^i	C^s	S^p
V^c															
V^f															
V^i															
V^s															
C^f	+	+	+	+											
Y^g	+	+	+	+											
C^g	+	+	+	+											
E^c	+														
E^i			+												
M^f		+			+										
M^i			+												
M^k			+						+		+				
C^i			+												
C^s				+											
S^p	+	+	+	+											

(see Figure 2). By rearranging the endogenous variables according to the order of their interrelations, a triangular matrix of coefficients is obtained. The fact that there are no non-zero entries in the matrix above the main diagonal is indicative of the model's recursive nature.[7] Below, some of the implications of the recursive nature of the model will be analysed. We concentrate here on examining the situation in the system's labour sector. The growth in labour supply makes the attainment of full employment difficult without rapid economic growth. Despite the fact that population grew at a compound rate of 2.7% per annum over the period under study, the labour force increased at a rate of around 5% per annum during the same period. This discrepancy was largely due to the rise in the labour force participation rate, particularly of women.

With a government committed to a policy of full employment, rapid growth of capital formation becomes a sine qua non to provide employment for sharply rising labour supply. On the one hand large investments are required to expand the capital intensive sectors, namely, industry and social overhead services. On the other hand equally large investments are required in agriculture to substitute for the scarcity of arable land and irrigation water. The growth of agriculture is of paramount importance on at least two counts:

(a) an increase in arable land would help slow down the outflow of

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[7] This recursive specification is prompted by two factors. First, it fairly well describes the decision mechanisms of an economy where central planning predominates. Secondly, in a policy decision model it is a major convenience since it allows us to follow step by step in a cause effect fashion the impact of changing the values of policy instrument variables on the target variables.

labour from the agricultural to the services sector; and (b) an increase in agricultural output is needed to feed the growing population and provide the country with the great bulk of its exports.

The Egyptian government assumed, with the aim of accelerating capital formation, full control of all investment activities from the mid-1950s onwards. Thus, it was in a position to determine both its level and pattern of growth. This, however, culminated in the emergence of various gaps and an excess capacity in the industrial sector. Judging from this point of view the pattern of investment allocation was, ceteris paribus, an unbalanced one.

From the above it should be clear that both the level and the allocation of investment are the driving forces behind the model. They are under full government control and are therefore treated in the model as exogenously determined.

Now, a rapid growth of capital formation in agriculture, industry and social overhead sectors (e.g. transport and communication, housing, and public utilities) has two favourable effects. First, it relieves the pressures on the balance of payments through either import-substitution or exports.[8] Second, it reduces the employment pressure on the sector referred to as "other services" whose main component is the government sector.

There are two alternatives to cope with the employment problem. The first is to opt for labour intensive production techniques. The second is to expand employment opportunities in the commodity sectors by a rapid growth of capital formation. Egypt's import substitution strategy opted for the latter alternative. Our model is used to

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[8] In the early stages the acceleration in capital formation might surely lead to a determination in the balance of payments if it can be achieved by importing the capital equipment.

examine the consequences of this choice.

(iii) The econometric methods used in estimating the model's parameters are ordinary least-squares and the Cochrane-Orcutt iterative technique.[9] In view of the model's pure recursiveness it was not felt necessary to use other simultaneous estimation procedures such as higher stage least-squares, or maximum likelihood estimators. The use of the Cochrane-Orcutt technique was used in estimating the parameters of equations where statistical tests (Durbin-Watson Statistic) indicated autocorrelated error terms. This latter problem is frequently encountered in policy models such as ours where a relatively small number of variables are used in the functional equations.

(iv) Input-Output techniques were used as a supplement to regression techniques in the estimation of the parameters of some of the structural equations. They were also used to estimate changes in these parameters over time which might have resulted from the structural changes in the economy. This combined use of input-output and regression techniques also has the advantage of introducing intermediate demand and the required sectoral balances between demand and supply into the model.

(v) Alternative functional specifications are provided for certain sectors.

Although the estimated equations taken together constitute an overdetermined system, in Chapter 9 we specify two alternative determinate models which are used for policy design.

Now, we discuss the specifications of the structural model.

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[9] D. Cochrane and G. H. Orcutt, "Application of Least-Squares Regressions to Relationships Containing Autocorrelated Error Terms", Journal of the American Statistical Association, 44, No. 245, March 1949, pp. 32-61.

I Production Functions

A. Agriculture

We can distinguish between two main types of agricultural production - cotton and foodstuffs. Output of the former is completely homogeneous except for some minor variations in the structure of cotton output according to the length of staple. The foodstuffs sector consists of both animal and plant production the latter including cereals, dry legumes, clover, sugar cane, etc. However, for all practical purposes, the commodity composition of total output in this sector was fairly stable during the period under study, and is not expected to change in any significant way in the near future. Furthermore, as was stated in an earlier chapter, cereals was the dominant commodity group within that sector.

The choice of explanatory variables to be used in the two agricultural production functions (i.e. cotton and foodstuffs) entails a brief explanation of the relationship between demand and supply for agricultural factors of production.

Given the major structural changes and socialist transformation in the agricultural sector of the Egyptian economy, land was the scarcest factor. It is, accordingly, the dominant factor in the agricultural production function. On the other hand labour was redundant.[10]

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[10] Labour redundancy in agriculture could be defined as the total number of workers who can be permanently removed from the agricultural labour force with no change in productive techniques and no fall in agricultural output. The catch phrase here concerns the lack of change in techniques; surely, there must be some change, at least in the organisation of production, if workers are to be removed. However, some studies on the employment problem in Egypt showed that this problem does not manifest itself as disguised unemployment in agriculture (defined in terms of zero marginal productivity of labour) because the agrarian system has a limited ability for retaining redundant workers. See: R. Mabro, "The Egyptian Economy, 1952-1972", op. cit., Chapter 9.

With regard to capital there were three types of demand for investment: (i) investment in land reclamation which was quite high given the fact that the country had already reached the extensive margin of arable land cultivation early in the century; (ii) investment in water control systems such as dams, barrages, canals, etc. ... since agriculture is water irrigated and not rain-fed; (iii) investments in drainage facilities as well as intensive use of fertilisers to avoid a decline in land fertility.

Taking the above factors into consideration we initially chose five explanatory variables in the agricultural production functions, namely: land, labour, capital (mainly in the form of drainage facilities), water, and chemical fertilisers. The coefficient of the labour variable was very small in absolute value and statistically insignificant in an econometric sense. Although this result is not unexpected it might be attributable to the crudeness of the labour series, especially for the 1950s.[11] Therefore, the labour variable was dropped from the equations.

Although one might expect there to be some interaction between land and water inputs, thus necessitating the use of an interaction term, such a refinement has been omitted due to the deficiencies in the water series. The water variable was also dropped.

We are therefore left with three explanatory variables, land (cropped area), capital (mainly in drainage facilities), and chemical fertilisers. Thus, the structural equations for the value-added in

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[11] There is no series for agricultural labour for the 1950s and this has had to be estimated from Census data. Data is available for the 1960s.

the cotton and foodstuffs sectors are as follows:

$$\text{CORC}^{*}: \quad V_t^c = a_1 + b_1 (L)_t^c + c_1 \frac{(K_{t-1}^a)}{L_t} + d_1 (F)_t^c + (D)_t^{v.c.} \qquad (1)$$

$$\text{OLS}^{**}: \quad V_t^f = a_2 + b_2 (L)_t^f + c_2 \frac{(K_{t-1}^a)}{L_2} + d_2 (F)_t^f \qquad (2)$$

Where:

V_t^c and V_t^f = value added in the cotton and foodstuffs sectors respectively (at constant 1959/60 prices, and in £E million).

L_t^c and L_t^f = cropped area allocated to the cultivation of cotton and foodstuffs (millions of feddans).

K_{t-1}^a = capital in irrigation and drainage lagged one year (at constant 1959/60 prices, and in £E million).

L_t = total cropped area.

F_t^c and F_t^f = value of chemical fertilisers used in cotton and foodstuffs sectors (at constant 1959/60 prices, and in £E million).

$(D)_t^{v.c.}$ = a dummy variable which assumes the value of one for the four years during which at least one fifth or more of the cotton crop is known to have been devoured by the cotton worm, and zero for other years of the sample period.

B. Industry

The industrial sector covers mining, manufacturing, electricity and construction. However, for all practical purposes, manufacturing is the predominant sector within this group. The other three account

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* Means according to the Cochrane-Orcutt technique.

** Means according to the least-squares technique.

for an average 10% of total industrial output, mining and electricity alone accounting for only 3% of this total.

Industrial output is specified as a function of capital stock at the beginning of the period, i.e. a fixed coefficient production function of the Leontief type, with labour redundant. One of the reasons for not including labour as an explanatory variable in the industrial production function is the absence of reliable labour data for the 1950s.

However, given the supply of capital, an important determinant of industrial growth is the extent to which installed capital capacity is utilised. Therefore, a capacity utilisation term is added as an additional explanatory variable, with capacity output being estimated through the peak-to-peak method.

The structural equation for the value-added in the industrial sector is as follows:

$$\text{CORC} \quad v_t^i = a + b\,(K)_{t-1}^i - E_{x_t}^i \qquad (3)$$

where:

V_t^i = value added in the industrial sector (at constant 1959/60 prices, and in £E million)

K_{t-1}^i = net capital stock in industry, lagged one year (at constant 1959/60 prices, and in £E million).

$E_{x_t}^i$ = excess industrial capacity output (i.e. capacity output minus actual output).

C. Services

A major feature of the structure of the services sector during our period was the predominance of the government sub-sector. Over the 1960s the tertiary sector (housing, commerce and finance, and other services) contributed some 47% of the output increase. Furthermore,

the growth of government services accounted for the great bulk of aggregate services growth, so that the category labelled "other services",[12] constituted about 33% of total services output. Determining the limits to services growth in Egypt entails an explanation of the nature of demand for capital and labour in services, and its relation to supply.

Unlike industry, capital acted as less of a constraint upon the growth of aggregate service output. While for such service sectors as housing and public utilities, the capital/output ratio was estimated to be 2.65 and 2.93 respectively, for government services the ratio was 0.8.[13] Moreover, both housing and public utilities accounted for only around 10% of total services during the 1960s. So, one might conclude that while capital was essential for some services sectors it acted as less of a constraint on the growth of aggregate services, especially in the light of the commodity composition of this sector as described above.

On the other hand, labour supply has been an important factor in the growth of government services. With labour supply increasing at a much faster rate than labour demand, and with the government committed to a policy of full employment, this meant that a large portion of the surplus labour was absorbed in the government sector.[14] Given the system of national accounts, such an increase in government employment and wages is tantamount to an increase in government

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[12] In National Income accounts this category is a mixed bag, including government and commerce and among others bankers as well as pedlars, highly trained professionals as well as domestic servants.

[13] Ministry of Planning, "Follow-up and Evaluation Report on the First Five Year Plan", op. cit., p. 96.

[14] After the evacuation of the British troops in mid-1956 over 100,000 workers became unemployed and most of them had to be hired by the government.

services output regardless of whether the marginal productivity of this additional labour is negative, zero, or positive.

Given the existence of a large pool of excess labour and capital acted as less of a constraint in the service sector, the supply of services in the short or medium term is high elastic. In the case of government services the size of the budget deficit might act as a constraint on growth. But even this limit was greatly relaxed during the period under study due to large inflows of foreign resources which allowed for a large budget deficit. Of course, ultimately, the supply of real commodity output imposes a limit on the extent and time horizon of government budget deficit. Otherwise inflation would ensue.

Accordingly, one can conclude on a priori grounds that labour and capital played varying roles in the growth of output of different service sectors. Capital was the more dominant factor, and perhaps the limiting one in transport and communications, housing and public utilities, while labour was of greater importance in explaining the growth of output in the remaining service sectors, especially government.

In our specification of the services production functions, we have therefore divided total services into two subsectors, according to the roles played by labour and capital in their growth.

The structural equations are as follows:

$$\text{CORC:} \quad (V)_t^{soh} = a_1 + b_1 (K)_{t-1}^{soh} \tag{4}$$

$$\text{CORC:} \quad (V)_t^{os} = a_2 + b_2 (K)_{t-1}^{os} + C(N)_t^{os} + (D)^{vos} \tag{5}$$

where:

V_t^{soh} = real value added in social overhead sectors
V_t^{os} = real value added in other services sectors
K_{t-1}^{soh} = real capital stocks in social overhead sectors
K_{t-1}^{os} = real capital stocks in other services sectors
} at constant 1959/60 prices

N_t^{os} = labour in other services sectors

D^{vos} = a dummy variable to allow for the impact of the Suez War, precipitated by the nationalisation of the Suez Canal Company in 1956, on output.

II Consumption Functions

As stated in an earlier chapter,[15] two alternative disaggregations of consumption were considered. The first divides total consumption by type of consumer and by commodity into: (i) household food consumption; (ii) household non-food consumption; (iii) government consumption.

The second divides total non-food consumption, of both household and government, into: (i) consumption of industrial goods; and (ii) consumption of services.

The functions which were chosen are as follows:

$$\text{OLS} \quad C_t^f = a_1 + b_1\left(\frac{Y^p}{POP}\right)_t + c_1\,(POP)_t + d_1\,(tot)_t^i \qquad (6)$$

$$\text{OLS} \quad C_t^{i+s} = a_2 + b_2\left(\frac{Y^p}{POP}\right)_t + c_2\,(POP)_t + d_2\,(tot)_t^i \qquad (7)$$

$$\text{CORC} \quad C_t^g = a + b\,(GNP) \qquad (8)$$

$$\text{I/O} \quad C_t^i = \frac{(1+\beta_t^i)}{(1+\alpha_t^i)}\,(V)_t^i + \frac{1}{(1+\alpha_t^i)}\left\{M_t^i + T_t^{ii} + \Delta St_t^i\right\} - I_t^i - E_t^i \qquad (9)$$

$$= \alpha_1 ci\,(v)_t^i + \alpha_2 ci\,(M_t^i + T_t^{ii} + \Delta St_t^i) - I_t^i - E_t^i$$

$$\text{I/O} \quad C_t^s = \frac{(1+\beta_t^s)}{(1+\alpha_t^s)}\,(v)_t^s + \frac{1}{(1+\alpha_t^s)}\,(T)_t^{is} \qquad (10)$$

$$= \alpha_1 cs\,(v)_t^s + \alpha_2 cs\,(T)_t^{is}$$

where: C^f and C^{i+s} are food and non-food (industrial and services) consumption respectively, at constant 1959/60 prices, and in £E million.

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[15] See Chapter 6, section 6.4.

$\frac{Y^p}{POP} = Y^{P.P.C.}$ = per capita private income, at constant 1959/60 prices, and in £E.

$Y^{P.P.C.}$ = GNP - Government Net Income

= GNP - (government current receipts - transfers)

(POP) = population size; in millions.

$(tot)^i$ = internal terms of trade, as measuring by the ratio of food to industrial prices $\frac{pf}{pi}$ (1959/60 = 100, an index).

C^g = government consumption
GNP = Gross National Product
} - at constant 1959/60 prices, and in £E million.

C^i = aggregate consumption of industrial goods.[16]

C^s = total consumption of services, by household and government.[17]

α^i_{1t} = the ratio of intermediate sales of the products of sector i, to final demand for it (at time t).

α^i_{2t} = the ratio of intermediate purchases by sector i, to value added in that sector (at time t).

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16 & 17 For the methodology used in deriving the input-output equations for total (i.e. household and government) consumption of industrial goods and total consumption of services, see Chapter 6, section 6.4.D. and 6.4.E.

III Export Functions

In the light of our analysis presented in the next chapter, two export functions are specified. One for cotton, the other for industrial goods (manufactures and minerals). Exports of foodstuffs are taken to be exogenously determined.

An input-output equation similar to the ones used for consumption of industrial goods and services was used to estimate cotton exports as a residual. This specification implicitly assumes infinitely elastic world demand for Egyptian cotton. However, given the narrow range of variation in cotton exports, such an assumption is not altogether unrealistic.[18]

The equation used in the estimation is as follows:

$$\text{I/O:}\quad E_t^c = \frac{(1+\beta_t^c)}{(1+\alpha_t^c)}(V)_t^c + \frac{1}{(1+\alpha_t^c)}(T_t^{ic} - \Delta St_t^c) \qquad (11)$$

$$= \alpha_1 ec\,(V)_t^c + \alpha_2 ec\,(T_t^{ic} - \Delta St_t^c)$$

where:

E^c = cotton exports

V^c = value added in cotton sector

T^{ic} = indirect taxes on cotton

ΔSt^c = changes in cotton stocks.

(all variables are at constant 1959/60 prices, and in £E million).

A multiple regression function was used to specify industrial exports, with industrial output and an index measuring changes in the country's price competitiveness in world markets as explanatory variables. The function is as follows:

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[18] A similar specification was undertaken by Eric Thorbecke and Alfred J. Field for Argentinian exports, see: "Relationships between Agriculture, Non-Agriculture, and Foreign Trade in the Development of Argentina and Peru" in E. Thorbecke (ed.), The Role of Agriculture in Economic Development, Columbia University Press, New York, 1969, pp. 165-212.

$$\text{OLS:}\quad E_t^i = a + b(V)_t^i + c\left(\frac{p^d/p^{U.S.}}{R}\right) + f\,(D)^{ei} \qquad (12)$$

where:

E^i = exports of industrial goods
V^i = value added in the industrial sector
} - at constant 1959/60 prices, and in £E million

p^d = domestic industrial value added implicit price deflator (1959/60 = 100)

$p^{U.S.}$ = U.S. general industrial wholesales price index (1959/60 = 100)

R = an index of the price of foreign exchange (U.S. dollars).

D^{ei} = a dummy variable taking the value of one for the years after 1962/63, and zero for the years before. This is because devaluation of the Egyptian pound after the year 1962 brought about an upward shift in industrial exports.

Finally, it is worth noting that for the price term, an implicit value-added industrial price index was used instead of the domestic sales price index. The reason is that while domestic sales prices were not binding to exporters, in most cases factor costs represented a minimum below which they would not want their revenues to fall. Accordingly, the cost of production became the more binding price factor, and since the implicit value added price index was more of a cost index, it was chosen.

IV Import Functions

In the light of the supply-demand relations described in the next chapter, three different functions are specified for the three import commodity groups.

A. Food Imports

An input-output equation is specified for foodstuffs, that is

$$\text{I/O} \quad M_t^f = C_t^f + E_t^f - \alpha_1 mf \ (V)_t^f \tag{13}$$

where:

M^f = food imports

E^f = food exports

V^f = net food production

(all values are at constant 1959/60 prices, and in £E million.)

$\alpha_1 mf$ = the ratio of gross food output to its value added.

Since the net food production $(V)^f$ variable in our model includes some non-food items such as clover, but excludes processed food, the parameter $(\alpha_1 mf)$ was adjusted to take into account these two factors.

B. Intermediate Goods Imports

A multiple regression equation is specified for intermediate goods imports with industrial net output as an explanatory variable. The equation is as follows:

$$\text{CORC:} \quad M_t^i = a + b \ (V)_t^i + c \ (D)_t^{mi} \tag{14}$$

where:

M^i = imports of intermediate goods

V^i = industrial value added

D^{mi} = a dummy variable which takes a value of one in 1966/67, and zero in the remaining years.

(all values are at constant 1959/60 prices, and in £E million.)

The dummy variable is included in the function to allow for the

sharp and sudden decline in intermediate imports as a result of the foreign exchange crisis of the mid-1960s. Industrial value-added is used instead of GDP or total commodity output since the great bulk of imports was used in industry which, in turn, supplies other sectors with their requirements of intermediate goods.[19] The specification stated in equation (14) was preferred to the alternative one of estimating intermediate imports through the use of the inverse of the input-output matrix of import coefficients on the grounds that for post-sample projections and even within the period under study, major changes would have taken place in the entries of the matrix of import coefficients as a result of import substitution. Therefore in the absence of information relating to these changes in the input-output import coefficients, we felt that the econometric approach would provide a more reliable forecasting tool, given its aggregative nature and our a priori reasoning about its future stability.

C. Capital Goods Imports

There are a different ways of specifying the capital goods import functions. First, by estimating capital imports as a residual from an input-output sectoral balance equation. From a policy design point of view this approach has the advantage that it allows for import substitution by entering domestic output of capital goods explicitly into the equation. And even though it does not allow for the foreign exchange constraint on capital goods imports, this does not represent a problem here, since the purpose of our model is to test alternative strategies aimed at reducing the need for large amounts of foreign aid. In other words, the extent of foreign resource inflows is determined

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[19] The import coefficient of agriculture (i.e. the ratio of imported inputs used in agriculture to agriculture output) according to the 1963 input-output table, was less than 3%, and for services it was around 2%. (Note that the great bulk of chemical fertilisers used in agriculture was supplied, increasingly so, from domestic output.)

endogenously from the model, and the objective of the different tested policy mixes is to minimise these inflows.

A second approach is to use a multiple regression function with investment as the main explanatory variable, supplemented by the balance of payments (on current account) as a proxy variable for foreign exchange availability. This approach, however, is inadequate in the sense that it does not allow explicitly for import substitution and changes in the commodity composition of investment. When proxy variables for such factors are included in the equation, multicollinearity blurs the picture.

A third approach is to specify capital imports as a residual in a foreign exchange balance equation by putting them equal to net foreign exchange receipts - that is receipts from exports and foreign aid minus payments for imports. This approach, does not allow for import substitution in the capital goods sector and assumes a prior knowledge of foreign aid inflows.

For the reasons mentioned above, the first method of specifying the capital goods import function is preferred to the other two. In addition, since the multiple regression specification provides a summary measure of the relation between investment and capital imports, we also included it here. The functions are:

$$\text{I/O} \quad M^k_t = \alpha_1 mk\ (I)^{t.g.f.} - \alpha_2 mk\ (V)^i_t - (T)^{ik}_t \tag{15}$$

$$\text{OLS} \quad M^k_t = a + b\ (I)^{t.g.f.}_t + c\ (BOP)_t \tag{15'}$$

where:

M^k = imports of capital goods (machinery and equipment)

$I^{t.g.f.}$ = total gross fixed investment

V^i = net industrial output

T^{ik} = total indirect taxes on capital goods.

(all values are at constant 1959/60 prices, and in £E million).

$\alpha_1 mk$ = the share of investment expenditure on machinery and equipment

$\alpha_2 mk$ = the ratio of gross capital output, also machinery and transport equipment, to total industrial value added.

BOP = balance of payments on current account.

V Savings Functions

In specifying the savings functions we follow the division of total savings into private and government budget savings. Government saving equals government income minus government expenditures, with both income and expenditures related to the growth in GNP. On the other hand, private saving is specified as a function of private income and the industrial surplus. The functions are as follows:

$$\text{CORC} \quad Y_t^{g*} = a_1 + b_1 (GNP)_t \tag{16}$$

$$\text{CORC} \quad C_t^{g*} = a_2 + b_2 (GNP)_t \tag{17}$$

$$\text{CORC} \quad S_t^p = a + b \left(\frac{Y^p}{POP}\right)_t + c(S^i) + e\ (D)^{sp} \tag{18}$$

$$\text{CORC} \quad S_t^i = \alpha_1 si\ (V)_t^i \tag{18'}$$

where:

Y^g = government net income

C^g = government expenditure on goods and services

S^p = private savings (household + business savings)

Y^p = private income (household disposable income + undistributed industrial profits)

V^i = value-added in the industrial sector.

POP = population size

S^i = the after-wage industrial surplus (= industrial value-added - total industrial wages)

$(D)^{sp}$ = a dummy variable which takes a value of one in 1961/62, and zero for all other years.

The dummy variable is to allow for the sharp fall in private savings

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* Both Y^g and C^g will be treated, in the course of our policy design, as exogenously determined.

in 1961/62, the year of the massive nationalisation programme. It prevents the sharp decline in that year's savings, which was due to factors exogenous to the model, from distorting our estimates of the parameters of private savings.

Several factors, such as the rise in the share of aggregate wages in national income and the impact of consumption liberalisation policies, could have had a dampening effect on private savings. Thus, given the country's low level of average income, one would have expected a low private savings propensity. But this was not in fact the case. The following equation confirms this.

$$S_t^p = \underset{(51.42)}{-46.236} + \underset{(0.03)}{0.228}\,(Y)_t^p - \underset{(27.18)}{57.780}\,(F)^{sp} \qquad R^2 = 0.897,\ d = 1.547$$

From the above equation the marginal propensity to save is estimated to be 0.23, which is close to 0.26, the estimated value for the upper quartile of a sample of 32 developing countries.[20] There are two major factors that explain this.

(i) The utilisation of para-fiscal measures as an instrument for promoting compulsory private savings.

In 1955/56 a "Pension and Insurance Fund" for government employees and a "Social Insurance Fund" for non-government employees were established. These funds were gradually extended to cover all employees and subscription to them became compulsory. Just over fifty percent of the proceeds to these funds was paid by the government or other employers, the remainder accruing as deductions from the wages and salaries of all employees. In the mid-1960s a third scheme was

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[20] See: H. B. Chenery and A. M. Strout, "Foreign Assistance and Economic Development", The American Economic Review, LVI, No. 4, Part 1, September 1966, p. 684.

introduced. Under this compulsory savings equivalent to half a day's pay (and later three-quarters of a day's pay) were deducted from all wages and salaries.[21]

Given that voluntary household savings were quite small, any absolute decline in them was negligible compared with the compulsory increase. This, coupled with the fact that during the decade after the introduction of the social insurance schemes payments fell short of receipts, ensured that the schemes contributed to the overall growth of the household savings.[22] As for the government's contribution to the social insurance funds, this simply necessitated a change in book-keeping entries. On the other hand, the contributions of non-government employers was more in the nature of a saving tax and thus could not be considered an addition to private savings.

(ii) The low initial wage share in the national income as a whole, and the industrial sector in particular.

The cross-section evidence provided by Kuznets indicates that the share of wages rises as per capita income grows. The share of the employee's compensation is over 55% for countries with a per capita GDP of over $350, while it is only 47% for countries with income per capita of $(100-199).[23] In the case of Egypt, estimates for the late 1950s indicate that the share of all employee's compensation, including salaries imputed to self-employers, amounted to only one third of total income, and for industry it was even lower.

Such a structural phenomenon is understandable in the light of

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21 For more details see Chapter 4, Section 4.4.

22 To ascertain the relative importance of the compulsory pension and social insurance schemes and their contribution to household savings, see: F. A. Ezzat, "An Analysis of the Role of Domestic Savings in the Development Process in Egypt, 1952-1965", M.Sc. dissertation, Strathclyde University, Economic Department, 1975, p. 29.

23 S. Kuznets, Modern Economic Growth: Rate Structure and Spread, Yale University Press, 1966, pp. 404-405.

Egypt's surplus labour which kept wages down. When the share of wages started to rise at the beginning of the 1960s, this initial low share substantially reduced the impact of such a rise on private savings (mainly industrial savings). In addition, since industry was almost wholly nationalised at the beginning of the 1960s, it ceased to pay any dividends to stockholders, with certain minor exceptions. This factor could be looked upon as one that partially compensated for the sharp rise in the above-wage payments to employees in the form of profit sharing and other fringe benefits.

CHAPTER 8

CHANGES IN EGYPT'S PATTERN OF TRADE AND DEVELOPMENT

8.1. INTRODUCTION

The main purpose of this chapter is to evaluate the changes in pattern of trade that were associated with the major changes in economic and social policies during the period 1952-1970. The chapter is divided into sections. The first outlines the evolution of Egypt's balance of payments. The second analyses the performance of exports. Exports of manufactured products are given special attention but are not always studied separately. This presentation enables us to relate the behaviour of manufactured exports to the growth, diversification, and stability of total exports. It also enables us to discuss economic factors and policies which influenced the performance of both industrial and non-industrial exports. The third section analyses some aspects of import performance. The fourth aims to undertake a statistical assessment of some aspects of the pattern of import-substitution growth and the resulting structural change.

8.2. EVOLUTION OF EGYPT'S BALANCE OF PAYMENTS

During the 1930s, Egypt's balance of trade showed a continuing deficit of around one million Egyptian pounds per year. This deficit was actually accommodated by exports of specie. Invisibles and capital account items, other than specie, were of relatively minor magnitude during this period.[1] However, it can be said that the

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[1] Tadros indicated that by this period, many of the external assets accumulated during World War 1 had been repatriated, so that both foreign assets and external public debt were reduced. See: H. Tadros, "The Balance of Payments", in Institut des Etudes Bancaires, Série de Conférences Données durant la deuxième Année, Cairo, Imprimerie Mondiale, 1956, p. 6.

balance of payments were not a serious problem. Customs duties were raised somewhat, both for increased revenue and for protective purposes; but except for this, trade was free of restrictions and controls.

During the war years Egypt's trade situation was changed in a number of ways. On the one hand, shipping problems curtailed exports. This was coupled with the increasing need for food at home, especially to feed British troops stationed in the country, which resulted in the re-allocation of land from cotton to wheat production. Despite the general increases in food prices the average annual value of food exported declined by around 30% during 1940-1944, compared with the level of the preceding five years. On the other hand the need to provide supplies to British troops raised imports by some 20% over the same period. The increase was heavily concentrated on food, drink, tobacco and mineral fuels. During the war years, Egypt's merchandise deficit amounted to some £E100 million. This deficit was offset by the flow of funds into the country to finance British military expenses. This flow was estimated at around £E550 millions.[2]

Egypt emerged from the war with huge sterling balances of approximately £440 millions.[3] In 1945 these balances were equivalent to 80% of GNP. They were to be of vital importance in financing balance of payments deficits up to the late 1950s, after which they were finally exhausted.

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[2] Ibid., p. 7.

[3] National Bank of Egypt, Economic Bulletin, Vol. 1, No. 1, 1948, p. 10.

Table 1 presents data on the import propensities for the years 1945, 1948 and 1951. It shows that in the years immediately after the war the increase in imports amounted to around 60% of the increase in GNP. This increase resulted from the pent-up demand created by war conditions and the shortage of domestically produced consumption goods in the immediate post-war period. The situation stabilised somewhat by the year 1948. Both the average and the marginal propensity to import were just over 20% in 1948 and the income elasticity of demand for imports was close to one. Imports of consumer goods increased from an abnormally low war-time level to approximately 14% of private consumption spending in the period 1948-1951, during which imports from the sterling area were free. The situation prevailing under free trade during this period is later compared with the situation that prevailed after controls were instituted in 1952.

Having discussed the role of imports, we now turn to Egypt's exports. For the last century the country's exports have been dominated by one product, cotton. Although the share of raw cotton in total exports of the country had been falling,[4] it is still remained the commodity around which much economic activity revolved. The importance of cotton in total exports made the economy vulnerable to price and quantity fluctuations. The total value of exports rose sharply when price, or quantity, or both, increased. This is reflected in the 1949-50 export figures which rose by nearly 30% when prices rose sharply; and in 1961, when exports fell by 20% due to the damage of a large portion of the crop by insects.

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[4] In 1907-1909 raw cotton accounted for 95% of merchandise exports; in 1917-1919, 92%; in 1927-29, 81%; 1937-39, 73%; 1947-49, 80%. See: Annual Statement of Foreign Trade, Egypt.

Table 1

Import Propensities In The Period From 1945-1951

Year	Income (Y) £E million	Imports (M) £E million	$\frac{M}{Y}$	$\frac{\Delta M}{\Delta Y}$	E_1	Consumption (C) £E million	Consumer goods imports (Mc) £E million	$\frac{Mc}{C}$	$\frac{\Delta Mc}{\Delta C}$	E_2
1945	552	60	0.11			409	23	0.06		
1948	718	161	0.22	0.61	5.6	521	71	0.14	0.43	7.6
1951	1016	237	0.23	0.26	1.1	748	102	0.14	0.14	1.0

Notes and Sources: Y = Gross National Product at Current market prices.
M = Imports excluding gold.
C = Total Consumption expenditures.
Mc = Consumers goods imports.
E_1 = Income elasticity of imports $\frac{\Delta M}{\Delta Y} \cdot \frac{Y}{M}$
E_2 = Elasticity of consumers goods imports with respect to total consumer spending $\frac{\Delta Mc}{\Delta C} \cdot \frac{C}{Mc}$

S.H. Abdel-Rahman, A Survey of the Foreign Trade of Egypt in the Post War Period With Special Reference on Its Impact on the National Economy, Ph.D. Dissertation, Faculty of Commerce, Cairo University, 1959; and U.A.R. Department of Statistics and Census, Balance of Payments Statistics, Annual Statement of Foreign Trade.

In the early post-war years Egyptian cotton exports were influenced by three factors. These were the sharp rise in the price of cotton relative to other crops; the small increase in domestic cotton consumption, and the large stocks of cotton accumulated during the war years. During the period 1945-1951 annual production was supplemented by running down large stocks and this, together with the tripling of world prices, boosted export earnings. The terms of trade improved by 80% and at their peak in 1951, the relative prices of the country's exports was nearly three times the level of 1945.

Exports of rice, onions, fuel and diesel oils were also significant. Manufactured textile products, especially yarn, increased substantially in world markets as a result of the Korean boom; whereas other export components were of minor importance during the early post-war years.[5] Despite the substantial rise in the volume of exports (especially cotton exports) and the improvement in the terms of trade, the growth in imports led to a significant deficit in the balance of trade, as Table 2 shows. Part of this deficit was offset by the surplus in the balance of invisible trade (derived from the Allied Forces expenditures). As a result the deficit in the current account was £E60 millions only over the six years period, 1946-1951. The sterling balances available to the country at that time made it possible to accommodate the current account deficit, and to finance a substantial private capital outflow, as well as permitting a substantial increase in the country's holdings of other foreign assets and gold.

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[5] Department of Statistics and Census, Annual Statement of Foreign Trade, Cairo, 1960-1961, pp. 370-371; and Ministry of the Treasury, The Budget Report for the Fiscal Year July 1960 - June 1961, Cairo, 1960, p. 136.

Invisible Current Items

After the Second World War, Egypt's balance of payments position was strengthened by her substantial invisible exports, particularly in the form of expenditures in the country by British military forces. This item declined sharply after the revolution of 1952 and disappeared entirely in 1955, when the last British troops were withdrawn from the country. During the early 1950s the Suez Canal revenue amounted to £E25-30 millions per annum, a large part of which was remitted abroad as dividends.

Table 2

Aggregate Balance of Payments Flows
1946-1951

	£E million
Trade deficit	-194.5
Export Surplus of Services	135.1
Balance on current account	-59.4
Long-term capital outflow	-34.1
Total Financing (to be financed)	-93.5
Reduction in sterling assets	-159.7
Increased holdings of foreign exchange and gold	86.4
Increase in other short-term liabilities	-8.6
Net errors and omissions	-11.6
Total Financing	-93.5

Source: 1. National Bank of Egypt, Economic Bulletin, several issues.

2. Central Bank of Egypt, Economic Review, several issues.

The net benefit to the country's balance of payments was less than half this amount, consisting of local expenditures made by the company, both current and capital, an annual payment to the Egyptian government, plus any increase in the company's monetary assets

retained within the country.[6]

After nationalisation the full receipts remained in Egypt, with the exception of the compensation payments to former stockholders amounting to £E4 million per year during the years 1959-1963 and £E3 million in 1964. The number and size of ships crossing the Canal increased considerably and by 1966 gross receipts amounted to over £E95 millions, all of which remained in Egypt.

A second invisible export which grew in importance during this period was tourism. Foreign exchange receipts from this source amounted to £E23 million in 1961 and £E50 million in 1965.[7] This is clearly a field where Egypt has a great comparative advantage and a huge drive to increase tourism was made.

The Balance of Capital Transfers

Table 3 represents data on the whole balance of payments figures during the period 1950-1970. Export and import figures represent actual receipts and disbursements as recorded by the Central Exchange Control. Although these data differ from the foreign trade returns which are compiled for customs purposes it is used here because it provides an unbroken record dating back to 1950. However, it must be stressed that there are differences in timing, valuation and coverage between the two series.[8]

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6 Prenationalisation finances of the Suez Canal Company and their impact on the Egyptian economy are discussed in detail in: National Bank of Egypt, Economic Bulletin, Vol. IX, No. 3, 1956, pp. 223-227; U.N. Economic Developments in the Middle East, 1955-1956, New York, 1957, pp. 101-105.

7 National Bank of Egypt, Economic Bulletin, Vol. XXIX, No. 1, 1976, p. 105.

8 In the trade returns imports are recorded c.i.f. and exports f.o.b., while in the Central Exchange Control figures all transport costs are recorded under invisibles. Barter transactions and passenger's baggage, as well as goods not paid for in the year, are not recorded in Central Exchange Control figures, though they are included in trade returns. Goods on credit are recorded as and when they are paid for.

Table 3

The Balance of Payments, 1950-1970 (£E million)

£E millions	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970
Exports, F.o.b.	188.5	201.9	145.6	135.3	139.8	133.1	129.9	166	161	164.3	200.2	161.3	145.2	228.8	227.6	246.8	259.5	258.7	288.7	319.7	355.4
Imports, F.o.b.	221.7	241.9	210.5	165.2	150.7	190.3	192.3	217.5	214	235.3	255.2	237.8	294.2	402.6	399.4	413.3	410.9	413.2	369.3	418.4	517.8
Balance of Trade	-33.2	-40	-64.9	-29.9	-10.9	-57.2	-62.4	-51.5	-53	-71	-55	-76.5	-149	-173.8	-171.8	-166.5	-151.4	-154.5	-80.6	-98.7	-162.4
Suez Canal dues	+26.2	+26.4	+26.6	+29.1	+30.6	+31.8	+29.3	+24.3	+43	+44.4	+50.1	+51.2	+53.7	+71.1	+78.4	+86.2	+95.3	+47.0	-	-	-
British Military Expenditure	+13.0	+14.7	+5.8	+9.0	+5.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Interest and Dividents (net)	-11.2	-12.5	-12.1	-11.1	-13.1	-9.8	-5.4	+1.9	+2.8	+4.1	+2.1	+1.3	-2.2	-4.8	-7.8	-7.1	-4.4	-9.0	-7.9	-11.8	-15.3
Government Expenditure	-5.1	-6.3	-5.7	-6.6	-9.4	-11.0	-12.9	-16.9	-21.7	-27.9	-25.3	-30.9	-28.4	-28.3	-36.8	-35.5	-32.3	-29.0	-28.8	-30.5	-33.4
Other Invisibles (net)	-0.7	+2.5	-3.1	+1.6	-6.4	+12.2	+18.4	+11.0	+8.8	+14.4	+4.6	+1.6	+8.3	+12.9	+14.9	+12.9	+17.2	+20	+10.8	+8.7	+10.4
Net of Invisibles	22.2	24.8	11.5	22.0	7.3	23.2	29.4	20.3	32.9	35.0	31.4	23.2	31.4	50.9	48.7	56.5	75.8	29.0	-25.9	-33.6	-38.3
BALANCE OF CURRENT PAYMENTS	-11.0	-15.2	-53.4	-7.9	-3.6	-34.0	-33.0	-31.2	-20.1	-36.0	-23.6	-53.3	-117.6	-122.9	-123.1	-110.0	-75.6	-125.5	-106.5	-132.3	-200.7
Fall in reserves of gold and foreign exchange (1)	9.4	19.8	59.8	8.6	-3.1	31.4	36.8	51.9	22.3	22.8	19.4	25.3	43.1	28.3	8.7	24.1	13.9	21.5	+8.0	13.9	24.9
Net of other Capital movements (2)	-3.6	-4.6	-2.0	-0.4	-0.3	2.2	-3.3	-19.6	1.5	11.4	11.1	33.9	78.5	93.7	111.1	80.9	69.2 (3)	108.7 (3)	111.8 (3)	119.0 (3)	181.3 (3)
BALANCE OF CAPITAL PAYMENTS	5.8	15.2	57.8	8.2	-3.4	33.6	33.5	32.3	23.8	34.2	30.5	59.2	121.6	122.0	119.8	105.0	78.1	130.2	119.8	132.9	206.2
Errors and Omissions	5.2	0.0	-4.4	-0.3	-0.2	0.4	-0.5	-1.1	-3.7	1.8	-6.9	-5.9	-4.0	0.9	3.3	5.0	-7.5	-4.7	-13.3	-0.6	-5.5

Notes and Sources:
(1) Including Change in IMF position.
(2) - indicates capital export, includes Suez Canal compensation payments, net increase in counterpart funds, and change in net liabilities to Sudan.
(3) Including the transfers which were £E5million; £E58.2 million; £E110.5 m.; £E128.8m.; and £E145 millions in the concern period respectively.
(4) As from 1963, figures are calculated on the basis of the new exchange rate of £E1=$2.3 instead of $2.87.
(5) From 1959-1961 Russian deliveries for the High Dam are excluded from the import figures (these deliveries may amount to £E25 million). This is a consequence of the traditional statistical procedure of not recording parts of a delivery until the whole delivery has taken place. Because of the big amounts involved this is a rather unhappy procedure in this special case.

Computed and Compiled From: National Bank of Egypt, "Economic Bulletin"; Central Bank of Egypt, "Economic Review", Several Issues.

Table 3 shows that one of the oustanding features of Egyptian foreign trade and balance of payments was the deficit in both the balance of trade and the balance of current payments during the whole period in question, with the resulting continuous depletion of foreign exchange reserves. This development led finally to foreign exchange difficulties which became critical after 1962, with a formal depreciation of the Egyptian pound, drawings on the IMF and adjustments in domestic policies. Behind this development lay an almost stagnant export volume and, simultaneously, an expanding import volume. The improvement in the terms of trade and the increasing surplus on the invisible account helped to meet part of the increase in imports, but even these favourable developments were not sufficient to prevent a growing deficit on the balance of payments overall. Since 1955 the deficits were large, persistant, and ever increasing.

There were striking changes in the methods of financing this growing deficit. Up to 1958 Egypt relied almost exclusively on her supply of foreign assets. The main component here continued to be Sterling, although other foreign assets played a significant role, including those accumulated in the early post-war period when more blocked Sterling was released to Egypt than was needed for current transactions. During 1959 Sterling assets continued to help finance the payments deficit, although at a decreasing rate. By the year 1960 these reserves were actually exhausted, and other foreign exchange holdings continued to provide for deficit payments. By 1962 these other foreign reserves were also exhausted and thereafter the burden of accommodating the deficits fell upon foreign loans and grants.

8.3. SOME ASPECTS OF EXPORT PERFORMANCE

The export performance of Egypt's economy during the period in question was far from satisfactory. If we adjust the value of exports (for the period after the depreciation of the Egyptian pound in 1962) to allow for a statistical bias towards overstating, we find that between 1953/54 and 1966/67 real exports increased at an annual compound rate of 2% (see Chapter 5, Table 10). This rate is less than half the medium rate of 5% reported for a group of 32 developing nations, and below the lower quartile rate of 2.2%.[9] Consequently, Egypt's share of total world exports continually declined throughout the 1950s and 1960s, having reached a peak during the Korean war boom (see Table 4). The decline from a share of 1% in 1948-1949 to a share of 0.3% in the 1960s is comparable to the decline in India's exports, from 2.5% in 1948 to 1% in 1965.[10] Economic recovery in Western Europe and Japan after World War II and the Korean boom should be taken into account in interpreting changes in Egypt's share in the late 1940s and early 1950s. These two factors operated in opposite directions, but since both were fortuitous it seems preferable to take 1952 as the base for an assessment of the period. Restricting the period shown in Table 4 to 1952-1969 does not alter the qualitative result, although the fall in Egypt's share of world exports from 0.6% in the base year to 0.3% in 1969 is less dramatic than the decline cited above.

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[9] H. B. Chenery and A. M. Strout, "Foreign Assistance and Economic Development", op. cit., pp. 679-733.

[10] J. N. Bhagwati and P. Desai, India, Planning for Industrialisation, London, 1970, Table 18.1, p. 370.

Table 4

Egypt's Exports and Share of Total Value of World Exports

1948-1970

(at Current U.S. $)

Year	World Exports (U.S.$ million)	Egypt's Exports (U.S.$ million)	Egypt's Share of World Exports (%)
1948	57500	591.4	1.0
49	53700	514.8	1.0
1950	55400	503.7	0.9
51	75700	583.2	0.8
1952	72300	416.7	0.6
3	82700	394.4	0.5
4	76100	397.0	0.5
5	82800	397.4	0.5
6	92000	408.7	0.4
7	112000	492.6	0.4
8	108200	470.0	0.4
9	115600	443.0	0.4
1960	128000	550.0	0.4
1	134000	463.0	0.3
2	141600	399.0	0.3
3	154100	522.0	0.3
4	172400	539.0	0.3
5	186400	604.0	0.3
6	204000	604.0	0.3
7	214400	566.0	0.3
8	239000	622.0	0.3
9	272400	745.0	0.3
1970	311800	761.8	0.2

Source: United Nations, Yearbook of International Trade Statistics, Various Issues.

Export earnings (in current year U.S. $) increased immediately after World War II due to the reopening of trade routes. The Korean boom swelled earnings further but thereafter they declined and remained stable between 1952 and 1957, rising to a new plateau between 1957 and 1963 (save for 1962 when earnings were badly hit by a cotton crop failure in the preceeding agricultural season). After 1963 export earnings increased steadily until 1970, passing the 1948 peak in 1965.[11]

In view of the above evidence, it would be wrong to speak of complete export stagnation. But the performance is far from good.

The picture may be supplemented by data on export and terms of trade. Table 5 shows that one of the remarkable features of the export quantum index was the absence of a very marked trend between 1946 and the end of the 1950s. There was, of course, a recovery immediately after World War II, but the volume of exports reached in 1947-1948 levels attained just before the outbreak of hostilities. The quantum index then began to fluctuate around an average close to the 1947 level. Some of the variations, say in 1949 and 1950, might be interpreted as responses to price increases in a previous years; others were due to instability in cotton yields. One can perceive a rise in the index over the period 1956-1960, but this increase is exaggerated by the low level of exports in the initial year.

The unit value (exports) index did not always move in the same direction as the quantum of exports. Prices rose between 1953 and 1957 when volumes were low, and were falling in the subsequent three or four years when the quantum index was rising. In the second period (1962-1970), export prices were generally rising while volume tended

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[11] R. Mabro and S. Radwan, "The Industrialisation of Egypt, 1939-1973", op. cit., p. 213.

Table 5

Export and Terms of Trade Indices, 1946-1970

Year	Export Quantum Index (1953=100)	Export Price Indices (1953=100)		Terms of Trade (Px ÷ Pm) (1953=100)	Export Value ÷ Import Price (1953=100)
		Prices In £E	Prices in U.S.$		
1946	81.5	57.5	82.7	87.3	73.5
47	98.4	64.1	92.2	88.8	85.9
48	105.2	98.5	141.8	130.7	133.2
49	113.6	87.9	114.4	117.0	128.8
1950	112.2	113.5	113.5	149.1	161.5
51	82.5	179.1	179.1	206.9	167.6
52	77.0	136.5	136.5	132.1	102.0
53	100.0	100.0	100.0	100.0	100.0
54	88.8	113.3	113.3	117.5	104.8
55	90.8	111.1	111.1	112.7	104.6
56	85.8	120.9	120.9	120.4	99.3
57	93.3	134.3	134.3	127.2	114.0
58	103.5	115.7	115.7	116.5	116.0
59	107.7	104.6	104.6	119.1	123.3
1960	120.0	113.0	113.0	122.8	146.2
61	114.5	103.6	103.6	110.3	128.0
		(1963=100)			
1962	77.0	90.7	97.0	106.8	82.3
3	100.0	100.0	100.0	100.0	100.0
4	96.7	106.8	106.8	103.2	99.9
5	102.4	113.2	113.2	109.6	112.5
6	105.2	109.8	109.8	109.5	115.8
7	90.0	117.0	117.0	120.6	112.2
8	92.0	124.0	124.0	131.9	127.3
9	108.0	125.0	125.0	130.0	149.4
1970	113.0	123.0	123.0	126.8	151.1

Sources: For the period, 1946-1961: D. Mead, "Growth and Structural Change in Egyptian Economy", Homewood, Richard D. Irwin Inc., 1967, Statistical Appendix, tables V-A-7 and V-A-9. For the period 1962-1970, Central Agency for Public Mobilization & Statistics, Index Numbers of International Trade, Various issues (in Arabic); also, United Nations, Yearbook of International Trade Statistics, various issues.

to fluctuate. Opposite movements in prices and quantities tended to stabilise export earnings in the 1950s, while in the 1960s price rises contributed to the moderate growth in revenues.

Table 5 also shows that Egypt's commodity terms of trade improved after World War II, reaching a peak in 1951 as a result of the Korean boom. The index fell during the next two years but thereafter stabilised around the 1949 level until the end of the decade. A moderate and fairly steady improvement was noticeable between 1963 and 1970. The income terms of trade (measured by the ratio of export value to import price) combine movements in the volume of exports with those of the commodity terms of trade. After a big drop following the Korean boom, improvements were noticeable in the period 1953-1960 and 1964-1970.

Thus, the rather sluggish growth of export earnings after 1952 seems to have been largely the result of a slow expansion in export volume coupled with stable prices. Export earnings (a more relevant concept than dollar earnings) increased at a similar rate because import prices were fairly constant between 1952 and 1970.

A. Export Diversification

The diversification of Egyptian exports in the period 1952-1970, was an interesting aspect of their performance, and a quantitative analysis of this has been undertaken recently.[12] The findings of this analysis are summarised in Table 6. This study showed that in 1953 Egypt was the least diversified exporter of a group of fifteen

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12 P. O'Brien, "On Commodity Concentration of Exports in Developing Countries", Economia Internazionale, Vol. 25, 1972, pp. 697-716. This analysis was undertaken as part of a comparative study of fifteen developing countries. The period covered is 1953-1968. During these years, international trade was free of major disturbances. The year 1953 is the first appropriate base after the Korean boom.

countries (Argentina, Brazil, Burma, Ceylon, Dominican Republic, Ghana, India, Jamaica, Kenya, Mexico, Nigeria, Sudan, Tanzania, Trinidad and Tobago, and Egypt). By 1968, Egypt rose to eighth place exhibiting greater export diversification than Argentina and, less surprisingly, Ghana and the Dominican Republic. Quadratic equations with time as the independent variable, and entropy[13] as the dependent variable were fitted for each country. The question for Egypt shows a strong trend towards diversification ($R^2 = 0.905$), but the place

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[13] The method of measuring export concentration used in that study was the concept of entropy, which derives from information theory. Entropy can be defined as: $H(x) = \sum_{i=1}^{n} x_i \log \frac{1}{x_i}$; where x_i is the share of commodity i in total exports; and $H(x)$ is the weighted average of the additional information about the export distribution obtained when the share of one more product, x_i is known. It can be seen that, if we define $x_i \log \frac{1}{x_i} = 0$ whenever $x_i = 0$, $H(x) = 0$ when there is complete concentration. The upper bound can be found by maximising $H(x)$ subject to $\sum_{i=1}^{n} x_i = 1$, which yields the Lagrangean: $L = \sum_{i-1}^{n} x_i \log \frac{1}{x_i} - \lambda \left(\sum_{i=1}^{n} x_i - 1 \right)$; and $\frac{\partial L}{\partial x_i} = -1 - \log x_i - \lambda = 0$ for a maximum. The maximum conditions clearly are fulfilled when $\log x_i = -1 - \lambda$ (a constant) for all i, requiring $x_i = \frac{1}{n}$, and implying $H(x) = \log n$. It is worth noting that total entropy in a distribution, $H(x)$, can be decomposed into the entropy due to dispersion within (any number of) specified sub-sets and dispersion between sub-sets. One decomposition of relevance to exports of developing countries is into a sub-set of primary products and a sub-set of all other products. Let $Xp = \sum_{i \varepsilon_p} x_i$ and $x_o = \sum_{i \varepsilon_o} x_i$ be the shares of total exports coming from primary products and all other products respectively, where the "ε" means "is member of'. Then entropy between sets is: $Ha(x) = X_p \log \frac{1}{x_p} + X_o \log \frac{1}{x_o}$; and within sets is: $Hw(x) = H(x) - Ha(x)$. The components of within set entropy can also be computed readily enough e.g. entropy within primary products is: $Hp(x) = \sum_{i \varepsilon_p} \frac{x_i}{x_p} \log \frac{x_p}{x_i}$. See: ibid., p. 702; and H. Theil, Economics and Information Theory, Amsterdam, 1967.

tended to slacken over the period. This characteristic is shared with India, Mexico, and Nigeria, while in Brazil the place of diversification tended to quicken in the 1960s.

The more interesting results arise from a decomposition of exports into two groups: a fixed basket (referred to as traditional exports)[14] and a variable basket (including other exports). One of the significant findings is that those developing countries in the sample which succeeded in lowering the degree of commodity concentration in exports had tended to do so through diversification of their traditional basket rather than through significant reduction of the share of this basket in total exports. The Egyptian performance was particularly remarkable in this respect. Egypt, which made the most impressive progress in diversification (both absolute and relative increases in entropy between 1953 and 1968 are the largest in the sample), was also the country which showed the greatest increase in diversification of traditional exports.

Furthermore, greater diversification occurred between sets in the fixed baskets than within them. In other words, diversification of traditional exports involved greater changes in the primary/non-primary products composition (in favour of manufactured goods) than in the composition of each set. This contrasts with the behaviour of Mexican exports (the most diversified country in the sample) and with the behaviour of many other countries in the sample. Finally, the decline in the share of the fixed basket was more pronounced after

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[14] Defined as the sum of groups 0, 1, 2, 4 and 68 of the Standard International Trade Classification, and those groups are: food and live animals; beverages and tobacco; crude materials, inedible, except fuels; animal and vegetable oils and fats; and nonferrous metals respectively. See: U.N., Yearbook of International Trade Statistics, 1969, New York 1971.

Table 6

Measures of Export Diversification for Egypt and Mexico

1953, 1960, 1968

		1953	1960	1968
1. Entropy index for all products	Egypt	1.062	1.968	2.846
	Mexico	3.829	4.322	4.278
2. Share of fixed basket in total exports	Egypt	95.8%	95.3%	88.5%
	Mexico	86.0%	87.1%	80.5%
3. Entropy index for fixed basket	Egypt	0.842	1.748	2.557
	Mexico	3.773	4.316	4.408
4. Entropy between sets of primary commodities and other products in the fixed basket	Egypt	0.224	0.549	0.787
	Mexico	0.479	0.511	0.491
5. Entropy Within Sets in the fixed basket	Egypt	0.618	1.198	1.770
	Mexico	3.294	3.806	3.917

Source: Peter O'Brien, "On Commodity Concentration of Exports in Developing Countries", Economia Internazionale, Vol.25, 1972, Various tables.

1960 than before. No doubt this was a consequence of diversification of both agricultural and industrial production in Egypt, resulting from changes in the composition of investment in the late 1950s and early 1960s.

However, the considerable diversification revealed by the entropy measure was the result of changes in the composition of the export basket of agricultural products and the rapid growth in manufacturing exports.

Table 7 presents data on the shares of the main products and commodity groups in export earnings during the period in question. It shows a significant decline in the share of raw cotton exports from 83%-84% in 1952-1954 to around 45% in the late 1960s. This was matched by increases in the shares of other agricultural products (mainly rice) and of manufactured goods, particularly textiles.

In the light of this structure, it would not be misleading to concentrate on exports of cotton and manufactures, in order to explain the past growth behaviour of total exports.

The interesting changes in the agricultural export basket were due to an increase in the domestic demand for raw cotton as an input in the rapidly expanding textile industry, and to crop reallocation. In other words, the main determinant of cotton export growth was the relative increase in cotton production and its domestic use. The land area allocated to cotton production did not increase during the period under study (in fact it slightly declined), and with no trend towards increasing cotton land productivity this meant near-stagnation in cotton output. At the same time domestic use of raw cotton increased steadily, and this naturally meant a long-run trend towards a decline in the volume of cotton exports. The emergence of rice as a significant export commodity was partly due to reallocation made possible partly by increased availability of water, and partly by land reclamation in

the Northern Delta. There was also a shift towards the cultivation of vegetables and fruit thereby enabling increases in their exports. These are high value-added crops, and the reallocation of land in their favour made an important contribution to economic growth in agriculture. The advantages of a switch from cotton to rice were not clear. Reallocation of rice acreage to cotton could not effect swiftly in response to the variations of the relative prices of these two commodities, as a result of water-logging.[15] The interesting feature of Egyptian agriculture, however, was a high degree of responsiveness to the price signals.[16] However, it is a pity that price policies do not always provide the signals necessary to improve further the allocation of resources. Cotton policies were of critical significance in this respect. The shift against cotton was encouraged through price manipulations and other measures. This reduced its attractiveness to farmers relative to other crops and contributed to the decline of raw cotton in exports.[17]

In discussing the growth of manufactured exports it is helpful to distinguish between textile and other industrial exports because of the special conditions characterising the external demand for the former. The rising competition in external markets for textiles, and

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15 See Appendix 7.

16 Farmers also respond to opportunities for profitable reallocation created by improvements in transport, irrigation and drainage, agricultural inputs, and by increased supplies of water and credit.

17 One may think that the government is attempting to take advantage of the low elasticity of world demand for Egyptian cotton, and that the price paid to farmers involves an export tax element explicitly designed to maximise net foreign-exchange earnings from cotton exports. However, what is certain is that the price policy in the 1960s was not conceived in these terms; where its main purposes were of a fiscal and distributional nature, mainly the stabilisation of farmer's income through compulsory sales at fixed prices which were expected to yield in most years some government revenues.

Table 7

Shares of Main Products and Commodity Groups in Export Earnings, 1952/53-1969/70

(Percentages)

Year	Main Products				Main Commodity Groups				
	Raw Cotton	Rice	Petroleum	Yarn and Textiles	Petroleum Products	Agricultural Products	Minerals	Manufactured goods	Re export
1952/53	84.0	-	-	3.3	1.1	92.1	0.8	5.8	1.3
/54	82.8	0.5	-	3.9	0.5	90.5	0.7	8.0	0.8
/55	72.7	3.5	-	7.6	0.9	86.3	1.3	11.4	1.0
/56	72.8	6.4	-	5.8	0.8	89.0	1.1	9.1	0.8
/57	69.6	6.9	-	8.3	0.6	85.5	1.5	12.1	0.9
/58	65.9	9.8	1.0	7.9	0.4	84.9	2.0	12.4	0.7
/59	71.2	2.4	2.5	7.7	0.3	83.7	4.1	11.5	0.7
1959/60	70.8	2.5	1.7	9.7	1.5	77.6	3.4	18.1	0.9
/61	64.4	6.6	2.1	11.3	1.1	75.3	4.3	19.7	0.7
/62	58.8	1.8	4.8	13.9	1.7	67.3	6.5	25.6	0.6
/63	52.5	9.6	6.9	11.1	2.2	69.6	8.2	21.6	0.6
/64	49.2	13.1	6.2	13.9	2.8	67.7	7.5	24.4	0.4
/65	55.9	8.1	3.9	14.0	4.1	69.6	5.0	24.7	0.4
/66	55.9	8.4	1.9	16.9	3.7	69.5	3.0	26.6	0.9
/67	48.8	10.3	1.8	19.2	3.9	65.9	3.0	29.8	1.3
/68	44.5	15.9	1.2	19.6	1.6	65.8	2.3	31.2	0.7
/69	39.4	17.3	1.7	20.0	1.3	64.0	2.0	33.8	0.2
1969/70	49.1	11.6	1.9	16.7	0.2	67.9	2.5	29.5	0.1

Source: Ministry of Planning, Development of National Economic Indicators During the Sixties: 1960/61-1969/70, Cairo, 1972; And, Indicators of Economic Development in the U.A.R. from the Beginning of the Revolution to the End of the First Five-Year Plan (1952/53-1964/65), Cairo, 1966.

increasing resort to protectionist policies in many countries, resulted in a steady decline in their prices.

These circumstances were particularly unfortunate for Egypt, since over 55% of all its industrial exports consisted of textiles in 1959/60-1969/70. The unfavourable external market conditions resulted in steadily declining marginal returns to textile exports. In fact, it was estimated that the total net losses resulting from changes in textile export prices during the Five Year Plan period (1959/60-1964/65) were £E34 million, which amounted to 25% of the total value of textile exports over the period 1952/53-1966/67.[18]

It is important to stress the fact that the deterioration in the export price of textiles and some other industrial exports did not characterise Western markets only. Ranking[19] countries according to the losses deriving from unfavourable export price movements shows that Arab League countries suffered more than Eastern Bloc countries, who in turn suffered more than Western countries.

Finally, exports of manufactured goods other than textiles, consisted of a large number of items which added up to only £E25 million per annum on average during the period 1958-1968.[20] The obstacles to the growth of exports of these goods were of a more general nature, namely high cost (and price) and poor quality. However, despite the relative unimportance of this export group during the period under

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18 See: S. A. El-Bawab, "Losses and Gains in Mineral and Industrial Exports in the First Five-Year Plan (1959/60-1964/65), mimeographed memo., Cairo, Ministry of Planning, April 1967 (in Arabic).

19 Ranking was on the basis of losses per unit of total exports. This is particularly serious for Egypt's foreign-exchange receipts given the fact that over 50% of total industrial exports went to these two country groups. See: Ministry of Planning, Follow-Up Reports, various issues.

20 See: Census of Industrial Production, Annual Statement of Foreign Trade, various issues.

study, maximum efforts must be exerted to promote it in the future given the highly world income elasticity of demand for it, and consequently, its more promising future growth potential.

B. Prices and Foreign-Exchange Policies[21]

As mentioned above, rising costs and prices represented a major obstacle to the growth of non-traditional exports. An examination of the movement of domestic industrial prices, world market prices (as represented by the U.S. wholesale industrial price index), and the exchange rate of the Egyptian pound from the pre-world War II years to the end of the period under study, would lead us to the following conclusions:

(i) During World War II, domestic industrial prices increased at a much higher rate than world market prices (as represented by both U.K. and U.S. prices). This was due mainly to the sharp rise in the Allied troop's expenditures in Egypt, accompanied by a decline in domestic production and imports due to war conditions.

(ii) The devaluation of the Egyptian pound in 1949 pari passu with Sterling did not rectify the decline in the purchasing power of the former relative to the latter (nor to the U.S. dollar). The reason is that all of Egypt's trade at that time was with Britain and other members of the Sterling block, all of which followed the British in devaluing their currencies. Furthermore, whatever effect the devaluation of the Egyptian pound might have had was negated by the inflationary price rises which accompanied the rise in cotton prices and income during the Korean boom.

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21 For a summary discussion of the evolution of Egypt's foreign-exchange policies, see: B. Hansen and G. Marzouk, Development and Economic Policy in the UAR (Egypt), op. cit., pp. 191-198. For a detailed discussion, see: M. S. Mourad and F. Moursi, Foreign-Exchange Budget and the External Finance of Development: A Special Study of Egypt, op. cit.

(iii) After 1953 the inflationary tendencies in the economy receded. More prudent fiscal and price policies certainly helped greatly in that direction. The government reduced the area under cotton cultivation considerably and increased the price of cereals in order to expand their production and compensate farmers somewhat for their loss of income. Budgetary policy was also revised in a deflationary manner. In the field of foreign trade and payments the most important measures taken in the 1953 were: (a) the introduction of a licensing system for imports from countries accepting sterling, and restrictions on all remittances abroad; (b) a big increase in import duties on so-called non-essential goods; (c) a tax of 10% on payments connected with certain specified invisibles; (d) extended arrangements for payments through the Export Accounts (introduced in 1949); and (e) the introduction of the Import Entitlement system.

The Import Entitlement system resembled the Export Account system in one important respect: it implied a partial depreciation of the £E. Under the Import Entitlement system Egyptian exporters earning dollars or sterling were entitled to import licenses for a proportion of their earnings. These licenses could be sold at a premium to importers. Judging from the premia, a partial devaluation of up to 15% was involved. The Export Account and the Entitlement scheme were abolished in January and August 1955 respectively. Multiple exchange rates were introduced soon after and widely used in the late 1950s, first in the form of premia on foreign exchange proceeds from cotton exports (10%-25% in 1957), and later through a general premium in favour of exports. This premium was set at 35% in January 1958 but reduced to 21% in September of the same year. The premium system was modified several times between 1959 and 1961. However, 1961 saw a return to a uniform premium of 20%.

(iv) In 1962 multiple exchange rates gave way to an official

devaluation when the Egyptian pound was devalued by 24% against the U.S. $.

In the light of the above historical sketch, this devaluation represented nothing more than a formalising of the already prevailing de facto devaluation of the Egyptian pound through the multiple exchange rate system. In addition, over the five years 1962-1967, domestic industrial prices increased by 155% while U.S. prices increased by 5% only. This meant that whatever gains in price competitiveness were achieved through the 1962 devaluation were more than negated by the subsequent price rise. Indeed Egyptian industrial export prices were well above those prevailing in world markets and this prompts the question - Would a further devaluation of the Egyptian pound have eliminated the country's external deficit?

In international trade theory, the answer to this question depends on a large number of complex variables such as world price elasticity of demand for the country's exports, and domestic import and savings propensities. In the Egyptian case the situation was vitally affected by the price inelasticity of demand for imports and the price inelasticity of the supply of major exports. The former results from the fact that Egyptian imports were generally restricted to three categories: foodstuffs, intermediate inputs to the manufacturing sector and capital goods. For foodstuffs, depreciation increases the import prices of these basic goods but since the prices paid by domestic consumers for these goods were subsidised by the government, devaluation would have resulted in an increase deficit on the food account rather than an increase in domestic price levels. As far as the imports of capital goods and other imports are concerned it is unlikely that the demand of the nationalised industries (the government trading companies) would have been much influenced by the price increases. Given that acreage devoted to cotton did not

increase then potential gains from devaluation on the export side would have been largely confined to non-cotton exports for which there existed both an elastic world demand and an elastic domestic supply. Although some such commodities no doubt existed the scope for improvement was probably quite limited.

Finally, the promotion of manufactured exports also involved subsidies. Special institutions operating as equalisation funds which levied taxes on inputs or domestic output and subsidise exports, were established in the 1950s and 1960s in cotton sectors (e.g. cotton, leather, tobacco, and Rayanne). Although funds for fertilisers and other industries were also created the range of manufactured exports which received subsidies was extremely limited.

In short, Egypt applied the usual policy measures to promote exports, but in a timid and erratic way. Fluctuating conditions in the world cotton market and the inherent difficulties of policy management when the demand for a commodity was not very elastic account, perhaps, for frequent changes in export measures. The limited recourse to devaluation and explicit subsidies may be explained by bilateral transactions with the Eastern bloc, an aspect that is analysed in the following section.

C. Geographical Concentration of Egyptian Trade and its Implications

At the outset it must be pointed out that major changes in the geographical structure of Egypt's trade took place during the period under study. Table 8 shows that one of the major features of Egypt's foreign trade was the large Eastern block share of total transactions. But, the interesting question is whether this concentration in the direction of trade has adversely affected export performance. The answer to this question will become clear as we proceed.

First of all, the development of links with the Soviet Union and

other Eastern European countries must be put into perspective.[22] The relationships were established initially for purely commercial and economic reasons. In 1948 Egypt attempted to diversify its external markets because her traditional partner (the U.K.) was not able to satisfy her demand for imports, and because she could not finance desired imports from the U.S. and other countries, being unable to exchange sterling balances for dollars.

In 1948 the first bilateral trade agreements were entered upon, and the share of the U.S.S.R. in Egyptian exports and imports amounted to 8% and 7% respectively. In 1953 and 1954 Egypt renewed its trade relationship with Eastern Europe, with which it had traditionally traded before the Second World War. By 1956 Eastern Europe absorbed 28% of Egypt's exports. The Soviet Union remained until 1956 a very minor partner. The growth of exports to Eastern Europe was not matched by increases in imports.

The establishment of close economic links with the Soviet Union and their continued existence between 1956 and 1970 resulted from the Suez War which was followed by a trade blockade. The U.S. foreign policy stand in the Arab-Israeli conflict demand Egypt the arms that it required and Egypt had little option but turn to the U.S.S.R. Neither the ideology of the regime nor a special preference for bilateral trade explains these developments. In fact, Egypt was always eager to diversify sources of both aid and trade. A great success of Nasser's foreign policy was to secure a resumption of U.S.

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22 For more details, see: R. Mabro, "Egypt's Economic Relations with the Socialist Countries", World Development, 3 (5), May 1975.

Table 8

Shares of The Eastern bloc and U.S.S.R. in Egyptian Trade

1948-1970

(Percentages)

Years	Exports			Imports		
	Share of			Share of		
	Eastern bloc in exports	U.S.S.R. in exports	U.S.S.R. in Exports to Eastern bloc	Eastern bloc in imports	U.S.S.R. in imports	U.S.S.R. in imports from Eastern bloc
1948	13	8	61	11	7	64
54	11	1	9	5	1	20
56	28	4	14	12	4	33
58	47	17	36	31	13	42
59	51	18	34	30	13	43
1960	44	16	36	25	10	40
1	45	15	33	25	11	44
2	41	15	36	23	8	35
3	45	19	42	20	5	25
4	46	18	39	18	8	44
5	53	21	39	23	9	39
6	53	23	43	27	9	33
7	50	25	50	42	21	50
8	48	28	58	39	16	41
9	52	33	63	31	13	42
1970	60	38	63	32	12	37

Source: International Monetary Fund, Direction of Trade; and National Bank of Egypt, Economic Bulletin, VolXXIV, No.4, 1971, Table3/2b.

aid in 1959, at the same time as U.S.S.R. was increasing her commitments towards Egypt. As a consequence Egypt received substantial economic assistance.from both the U.S. and U.S.S.R. during the period 1959-1964. The increase of the investment ratio and the growth performance of the economy during this period suggest that these additional resources were put to good use.

To evaluate Egypt's bilateral trade with the Communist block by comparing it with a hypothetical multi-lateral situation that might have prevailed would be futile. This norm was almost certainly unachievable, the option never real in the circumstances of the late 1950s and the 1960s. We therefore attempt to answer the question. How did Egypt fare in the actual relationship with the Eastern block?

A major aspect of bilateral trade relates to the way in which prices are determined. Gains and losses may result from bilateral trade, relative to multilateral trade, if world and agreed prices diverge. It is known that in negotiating trade agreements, Egypt and her partners constantly referred to world prices. This poses all sorts of practical and conceptual difficulties. One specific problem arises in connection with cotton. As foreign demand for Egyptian cotton was not very perfectly elastic, reference to world prices in bilateral trade was not necessarily optimal. This price was influenced by the quantity sold to the U.S.S.R., and the correct procedure would have been to adjust these quantities in a way that equalised marginal revenues from sales in different markets. This was not attempted explicitly. Egypt consistently sold its cotton to the Eastern block with a premium ranging between 6% and 20% over the price to other destinations.[23]

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[23] See: Ministry of Planning, Price Planning Agency, Memo. no. 11, Commodity Reports Series, 1: Cotton, Cairo, May 1972, pp. 222-223.

A study of bilateral trade between Egypt and Socialist countries undertaken in 1967,[24] showed that the average unit value of exports to Socialist countries during the period 1952-1963 was higher than that of exports to the rest of the world by the following percentages: cotton (Karnak), 6.1%; cotton (Menufi), 7.2%; rice, 54% onions, 17.4%. Import comparisons were more difficult for two reasons: (a) commodity imports are generally less homogeneous than the four primary exports identified, and (b) the study failed to get access to price data on non-commodity imports. However, the study succeeded in taking 46 observations for commodities imported in the years 1962, 1963 and 1965 which were sufficiently homogeneous for meaningful comparison. Egyptian import prices from Socialist countries were lower than world prices for 22 commodities, and higher than world prices for another 17 commodities. In the case of seven commodities import and world prices were identical. Quantitative evidence on the prices of machinery was absent but the study suggested[25] that Egypt was paying 20%-50% more for machinery and equipment from Socialist countries than from free-currency sources, and that the quality of Eastern block equipment was inferior to Western

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[24] G. K. Kardouche, United Arab Republic: Case Study of Aid through Trade and Repayment of Debt in Goods or Local Currencies, United Nations Conference for Trade and Development, New York, Geneva, 1969.

[25] This was based on direct questions put to the Egyptian engineers and officials.

machinery.[26]

However, it is likely that the main advantage to Egypt of bilateral trade with the U.S.S.R. and Eastern Europe arose from the link with aid. Trade was always associated with credit, a facility which was not always available in the rest of the world on the very advantageous terms offered by the U.S.S.R. (2.5%-3% interest and medium-term loans).

Finally, it is unlikely that trade relations with the Soviet block could have prevented exports from growing faster than they did. Egypt was always eager to acquire free foreign exchange, and in many instances trade organisations respond to export opportunities in the West, or in other Less Developed Countries, by diverting exports already committed in bilateral trade agreements. If a surplus was available, these opportunities would have led to trade creation.

8.4. IMPORT SUBSTITUTION AND IMPORT PERFORMANCE

Introduction

Import-substitution industrialisation started at the beginning of the century, but it was only after the Second World War that it

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[26] It is worth noting that the pricing of exports and imports in Egyptian pounds from Socialist countries should take into account the effective rate of the Egyptian pound vis-à-vis convertible countries. In bilateral transactions, accounted for in £E, higher export and import prices than implied by the conversion of dollar values at the official rate are agreed upon. This would explain the higher unit values of exports to Socialist countries and of imports of machinery, industrial goods, and commodities such as metals, and fuel oil from these countries, as compared to unit values of exports/imports with the rest of the world. But, this hypothesis does not appear to account for the whole of the evidence since the price of certain commodity imports (tobacco leaf, wood, caustic soda, sulphate of ammonia) from the Eastern block were lower than unit value of the same commodities acquired from other sources. This lower pricesmay reflect inferior quality and may be attributable, in some of those cases, to the existence of spare capacity, surplus stock or abundant natural supplies (e.g. wood in the Rumaina, Soviet Union) in a Socialist country at the time of an agreement.

had gained enough force to be able to propel the economy forward, thus substituting for cotton exports as the engine of growth.

Despite the wide currency of the term "import-substitution" in the development literature, it is surrounded with ambiguity. It is used in different contexts to refer to different things and has misleading connotations. It is often used to characterise an industrialisation strategy which purports to encourage the domestic production of a set of goods hitherto imported by raising tariff levels or imposing import controls on these goods. But domestic production of a set of goods, generally, entails increased imports of another set (e.g. capital goods and inputs). The term is unfortunate insofar as it suggests that the industrialisation strategy necessarily leads to a decline in the import coefficient of the economy. The strategy is better defined by "its orientation towards the domestic market (inward-looking) or by the policy instruments used (import tariffs and control)".[27]

The term "import substitution" also refers to the effects of industrialisation on imports. Measures of the effects are termed measures of the degree of import-substitution achieved (could be either positive or negative). In this context, we are confronted with conceptual and empirical issues such as how to define the effects in a way that makes economic sense and how to estimate them, rather than with semantic difficulties.[28]

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27 R. Mabro and S. Radwan, "The Industrialisation of Egypt, 1939-1973", op. cit., p. 191.

28 The main problems are (i) that the effects of industrialisation on imports cannot easily be separated from the effects of other changes in the economy, some induced by industrialisation itself, and (ii) that the effects should be assessed in relation to what would have happened to imports in the absence of industrialisation, that is, a hypothetical situation which can never be satisfactorily specified. See: ibid.

Finally, an issue of interpretation also arises. Changes in import coefficients or estimates of that part of output growth attributable to the replacement of imports by domestic production, simply describe actual features of economic development. The economic importance of actual changes in import parameters cannot be assessed without reference to some norm.[29] Interpretation might not appear difficult if the only objective of policy is to reduce dependence on imports. But to pursue such an objective irrespective of costs would be irrational. Therefore a complete assessment requires a detailed estimation of costs. What matters is the divergence between actual values and the values that would have obtained had optimal policies been pursued. This is a task which cannot be attempted.

In this section we are concerned with import-substitution in the narrow sense of actual import effects. Descriptive analysis has its uses for establishing facts and for inter-temporal and cross-sectional comparisons. Import-substitution in the sense of a strategy is a broader concern of this study.

Table 9 reveals variations in import-coefficients in different periods. The import ratio was fairly stable at around 14% between 1953/54 and 1957/58 compared with the 19% of 1952/53. In these years Egypt's balance of payments on current account was showing a small deficit even though import controls were in operation and tariffs had been raised. The subsequent rise in the import coefficient during the first half of the 1960s was made possible by foreign aid and the ability to run a current deficit for a while. It was associated with an increase in the investment ratio. But these increases in civilian

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[29] The norm against which actual development should be judged is the set of parameters which optimise the social objective function.

imports (armaments are not included in our data) and investment could not be sustained because the U.S.A. withdrew its aid in 1965.[30] Exports were stagnant and the increasing requirement of military equipment[31] put new strains on the balance of payments. We are inclined to believe that the low import coefficient of the late 1960s reflects much more the operation of strong constraints on the capacity to import than a significant decline in ex-ante propensities. Indifferent export performance and a crushing military burden were the main causes of a situation which led to reductions in both investment and imports, a situation detrimental to economic growth.

The Table also reveals that real merchandise imports increased at an average compound rate of 6.6% per annum, whereas real GNP increased at an annual rate of 5% during the period 1952/53-1964/65. This points to an average import elasticity of more than one. The high income elasticity of imports is understandable in the light of the rapidly accelerating rate of growth of capital formation[32] and the

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30 U.S. aid (net disbursements) was estimated at U.S. $204 million in 1963, and U.S. $231 million in 1964. The amounts decreased to U.S. $66 million and U.S. $20 million in the years 1966 and 1968 respectively. See: U.N. Statistical Yearbook, various issues.

31 Official data on armament imports and on the extent of foreign military aid are not released. Unofficial estimates, published in the U.S. and the U.K., which can be taken as informed guesses, are presented in the following table:

Egypt's Military Expenditures	
Year	Estimated Amount, U.S. $ million
1967	718
1968	740
1969	836
1970	1,263

Source: SIPRI, World Armaments and Disarmament, Yearbook 1974.

32 It is worth noting that Carlos F. Diaz-Alejandro has pointed out, the import itensity of import substitution is a function not only of the level of investment but also of the rate at which it changes, i.e. its second derivative. See: "On the Import Intensity of Import Substitution", Kyklos 18, 1965, pp. 495-511.

Table 9

Value of Commodity Imports, and Gross National Product, 1952/53-1969/70(£E millions)

Year	Food	Consumer goods	Intermediate goods	Capital goods	Total Imports	GNP	Import Ratio to GNP (%)
1952/53	47	55	58	42	202	1086	18.6
53/54	27	36	53	36	152	1085	14.0
54/55	21	30	62	44	157	1115	14.1
55/56	22	24	67	51	164	1151	14.3
56/57	32	12	68	45	157	1158	13.6
57/58	42	19	72	48	181	1227	14.8
58/59	47	25	88	56	216	1289	16.8
59/60	46	10	114	56	226	1376	16.4
60/61	37	5	125	62	229	1445	15.9
61/62	61	8	130	69	268	1498	17.9
62/63	64	13	144	76	297	1685	17.6
63/64	67	15	163	84	329	1851	17.8
64/65	70	7	162	74	313	2030	15.4
65/66	74	9	181	100	364	2125	17.1
66/67	82	12	136	68	298	2150	13.9
67/68	78	10	113	67	268	2132	12.6
68/69	45	9	100	46	200	2139	09.4
1969/70	48	7	145	50	250	2274	11.0

Source: Computed From: (1) National Bank of Egypt, Economic Bulletin, Several Issues.
(2) Ministry of Planning "Exports and Imports during the Period 1959/60-65/66 at Current and Constant Prices", Cairo, (In Arabic); Also, "Follow-up Reports and Evaluation of Economic Growth in the UAR, Cairo (in Arabic).

inelastic supply of food and raw materials,[33] in spite of the inward import-substituting nature of this period's growth.

However, the growth behaviour of the aggregate import coefficient conceals a complex pattern of interaction between domestic structural changes and imports. To understand this pattern of interaction is not only essential for our analysis, but also a sine qua non for the estimation of relatively stable parameters for the import function.

Consequently, total imports were disaggregated as shown in Table 9. The shares of food imports, intermediate products and capital goods increased at the expense of consumer goods between 1952/53 and 1965/66. However, there were important year to year fluctuations. These were attributable to the changes in agricultural output that referred to changes in domestic policy and external repercussions. A great deal of import-substitution had taken place for manufactured consumer goods since the First World War, and by the early 1950s imports of this category of good accounted for less than 10% of total commodity imports, declining to less than 5% over the remainder of the period under study. Furthermore, imports of manufactured consumer goods were wholly determined by exogenous government policies of import controls.[34] Despite these variations the trends are easily discernible.

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33 Cross-section evidence points to an income elasticity of import of around one. However, for countries with a low-resource endowment, the import elasticity would be substantially greater than one. See: Loreto M. Dominguez, "Economic Growth and Import Requirements", The Journal of Development Studies, VI, April 1970, pp. 283-299; Also, H. B. Chenery, "Pattern of Industrial Growth", op. cit., pp. 624-654; and K. Berrill (ed.), "The Effects of Resources on Economic Growth" in Economic Development with Special Reference to East Asia, St. Martin's Press, New York, 1964, pp. 19-52.

34 For these reasons, the imports of manufactured consumer goods were treated as exogenously determined in our model.

Three influences were at work: the expansion of industry (relatively more intermediate goods and less consumer goods); the high level of investment activities (a larger share of capital and intermediate goods); and the population explosion (more food).

In other words, the growth in food imports was mainly the outcome of the accelerating rate of population growth together with government income and price policies which encouraged food consumption. The rise in food demand was, of course, in contrast to an inelastic domestic supply.

The growth in intermediate imports was a direct outcome of rapid industrial growth. While a substantial share of the growth in industrial output was import substituting, it generated at the same time a demand for other intermediate imports. The emergence of new types of intermediate imports, as industrialisation proceeds, is particularly accentuated in countries with a low-resource endowment, such as Egypt. Structural change in industry brings about a shift from simple processing of domestic raw materials, as in the case of textiles, food, and cement production, to more complex industries whose manufactured inputs, as well as raw materials, have to be imported. It is this process of structural change, together with the acceleration in the rate of industrial growth, which was responsible for a high rate of growth of imports of intermediate goods.

Lastly, the rapid growth of imports of capital goods hardly needs an explanation. The rapid growth in investment, and the change in its structure which favoured industry, led to a rapid growth in demand for capital goods in the form of machinery and equipment. This rapid growth in demand, coupled with the small domestic capital goods sector, meant that the bulk of capital goods had to be imported.

The question now arises - how did the country finance a rising volume of imports? Certainly not through a corresponding rise in

merchandise exports, despite occasional gains from an improvement in the terms of trade (e.g. the Korean boom). Although we answered this question earlier by analysing the current invisible account and the capital account, a discussion of pricing policy is also relevant since relative prices will not only affect the pattern of industrial growth but import substitution and the commodity composition of import.

Egypt has a long history of price controls going back to World War II. Initially, they were confined to a few essential consumer goods such as bread, sugar, and oil and to house rents. The main purpose of these controls was to prevent rises in the cost of living of the poorer sections of the community. The controls were accompanied by subsidies (bread) and rationing (sugar, oil, kerosene). As for rents, the policy amounted to a redistribution of income from landlords to tenants, irrespective of the tenant's wealth or ability to pay. In agriculture policies were introduced on several occasions in an attempt to influence the pattern of crop allocation between cotton and grains.

Direct public investment in industry led to the official determination of prices for goods produced by public or semi-public firms. The criterion generally applied was costs plus a "fair" margin, a procedure which called for frequent revisions, either because of rising costs or because of difficulties of matching supply and demand at the administered price.

In the 1960s most manufactured commodities were sold at administered prices as a consequence of the extension of public ownership over modern industry. A report of the Ministry of Planning dated July 1967 criticised the chaotic state of the pricing system, the conflicting procedures adopted by the various agencies administering prices, and an almost total absence of co-ordination.[35] The

[35] Ministry of Planning, Follow-up Report: 1960/61-1964/65, Part 2 Cairo, 1967.

agencies responsible were the Ministries of Agriculture, Industry, the Economy, and of Supplies, together with the Higher Committee of Prices, and Local Committee of Price Determination. Foreign trade organisations had a say in the determination of prices of imported commodities while the Treasury applied indirect taxes under various guises. The system described is akin to cost-plus pricing at the factory gates, to which trade margins are added.

The margin, however, was not split up between wholesale and retail trade, which enabled wholesalers to appropriate the largest proportion. The specification of goods in price lists was defective as firms were able to vary the quality, grade, or weights of goods without price sanctions.

The real situation was more chaotic than that suggested by the report. Price revisions, though frequent, were often made after considerable lags in response to shortages or gluts which they failed to cure. Prices that clear the market were difficult to guess. Prices were also revised for a host of different causes (foreign exchange constraints, rising costs in one firm, requirements for additional fiscal revenues) without much consideration for the effects of changes on the set of objectives which the pricing policy was supposed to achieve.

It is worth noting that the method of cost-plus pricing leads to inefficient allocation of resources as it fails to penalise or expose high cost producers. It does not necessarily benefit the consumer because inefficiently produced commodities remain expensive; it does not differentiate between monopolies and other firms and therefore destroys an important indicator of performance by allowing any firm a margin of profit whatever the level of its costs. Neither can cost-plus pricing be defended on distributional grounds. Marginal cost pricing, though difficult to apply in practice, is the relevant

method if the government is concerned with monopolistic behaviour. Where distributive justice is important, taxes and subsidies are the relevant instruments. However, it is worth noting that price and tax policies in Egypt (save for a few commodities such as bread and for rents) were not designed to improve the distribution of income.

The pricing system in Egypt attempted to achieve a variety of objectives. Therefore it was doomed to failure given that it is technically impossible to achieve multiple goals with a single instrument. After 1964 the government was no longer concerned with allocation of resources, incentives to efficient performance, and income distribution. Prices had mainly become an instrument of taxation and a means of curbing the growth of private consumption.

Lastly, the process of import substitution industrialisation in Egypt greatly undermined the role of prices and had a detrimental effect on industrial exports and on the real foreign exchange cost of the domestic import substitution industries. The great bulk of the industrial sector, especially the modern factory part of it, came under the ownership and control of the government. Even the small private industrial sector was largely under government control through such mediums as financing, licensing of both investment and imports, and dealings with the public sector. The government was therefore in a position to plan the pattern of industrial growth as it wished. In doing so, the government not only totally ignored market prices (of both factors and commodities) but also did not pay any attention to the dictates of comparative advantage, as measured by the real commodity exchange rates of the import substituting industries.[36]

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[36] For a discussion of such issues, see: B. Balassa and D. M. Schydlowsky, "Effective Tariffs, the Domestic Cost of Foreign Exchange, and the Equilibrium Exchange-Rate", Journal of Political Economy, 76, May/June 1968.

8.5. PATTERN OF IMPORT-SUBSTITUTION GROWTH AND ITS STRUCTURAL CHANGE

The main purpose of this section is to undertake a statistical assessment of some aspects of the pattern of import-substitution growth and the resulting structural change. It is divided into four parts. The first discusses the pattern of growth of both production and trade of primary commodities (i.e. agricultural and mineral products). The second investigates the pattern of sectoral growth, particularly that of the manufacturing sector. The third provides an anatomy of the structure and pattern of growth of demand and import-substitution (as an alternative source of supply) for the manufacturing sector. The last part discusses import-substitution and intermediate consumption in industry.

A. The Pattern of Growth of Production and Trade of Primary Commodities

To compare the pattern of interaction between production and trade of primary commodities in Egypt during the period under study we need to derive a world perspective.[37] For this purpose the world pattern regression parameters (log-linear) are applied to Egypt's actual average income and population. The formula for the prediction is:

$$x_i = \alpha Y^{\beta} N^{\sigma}$$

where:

x_i is the predicted value (at constant price) of output, exports, or imports in sector i;

Y represents the actual real income per capita;

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[37] For more details, see Chapter 1, section 1.6.B.

N represents the actual population size; and α, β, σ are world pattern parameters as given in Chenery.[38]

This methodology provides us with world pattern predicted primary commodity outputs, exports, and imports for three periods: 1952-1954; 1959-1961; and 1964-1966. The results are summarised in Table 10.

The overall picture that emerges from this table is that of a country with low resource endowment (per capita), and an agricultural sector highly specialised in trade. It suggests a need for rapid capital formation and industrial growth to make up for this scarcity.

Table 10 also indicates that agricultural production per capita in the period 1952-1954 was below its predicted value. This is understandable given that agricultural production stagnated while population doubled during the forty years 1913-1952.[39] The slow growth of agricultural output during the import substitution stage led to a further deterioration in the actual agricultural output in the period 1964-1966, relative to the predicted output.

Table 10 also suggests that the mining sector could not compensate for the low level of agricultural production since the share of mining in GNP was only 1% in 1952-1954 and did not show any significant growth during the import substitution stage.

Despite the relatively low level of actual agricultural production actual exports in the period 1952-1954 were more than double the predicted level. This is explained by the country's

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38 See: H. B. Chenery, "The Effects of Resources on Economic Growth" in K. Berrill (ed.), Economic Development with Special Reference to East Asia, op. cit., Table 3, p. 31. (Chenery's cross sectionally estimated parameters are for 1954.)

39 See: B. Hansen and G. Marzouk, "Development and Economic Policy in the UAR (Egypt)", op. cit., Chapter 1; and D. Mead, "Growth and Structural Change in the Egyptian Economy", op. cit., Chapter 4.

Table 10

Per Capita Production and Trade in Primary Commodities

(All Values in Constant 1953 U.S. Dollars)

	1952-1954		1959-1961		1964-1966	
	Actual	Predicted	Actual	Predicted	Actual	Predicted
1. Production (net):						
Agriculture	40.7	47.5	42.0	49.0	41.9	52.0
Mining	1.2	2.6	1.6	3.0	1.8	3.5
2. Exports:						
Agriculture	15.3	6.6	14.4	6.4	16.8	6.4
Mining	0.3	0.7	0.7	0.9	1.0	1.1
3. Imports:						
Agriculture	5.2	2.0	7.3	2.1	14.6	2.4
Mining	5.0	0.7	5.1	0.8	7.8	1.0

Notes and Sources: (1) Actual Production: For agricultural production in the period 1952-54 and 1959-61 (at constant 1954 prices), See: United Arab Republic, Central Agency For Public Mobilization and Statistics, Estimation of National Income In The Agricultural Sector for 1963, 1964, Cairo, August 1966 (in Arabic); For Agricultural production in the period 1964-66 (originally at constant 1959/60 prices but converted to 1954 prices using the official wholesale agricultural price index), See: Ministry of Planning, Follow-up and Evaluation of Economic Growth in the UAR, 1966-67, Cairo August 1968 (in Arabic). For mining production in the period 1952-54, the figures are those of the industrial census (originally at current prices but converted to 1954 prices using the official wholesale industrial price index). For mining production in the period 1959-61 and 1964-66 (originally at constant 1959/60 prices but converted to 1954 prices using the official wholesale industrial price index), See: Ibid., and Ministry of Planning, Follow-Up and Evaluation Report on The First Five Year Plan (1960/61-64/65), Part 1, Cairo, February 1966. (2) Actual Exports and Imports: For foreign trade figures, See: National Bank of Egypt, Economic Bulletin; Central Bank of Egypt, Economic Review, several issues.

earlier "Vent for Surplus" in cotton production.[40] The volume of cotton exports during the import substitution stage declined in absolute terms but rice exports expanded to make up for this decline. However, given land scarcity, this meant an even sharper increase in food imports.

B. The Pattern of Sectoral Growth

At the outset, it must be pointed out that the available empirical evidence indicates significant variation among country patterns of growth due to differences in some major underlying factors (e.g. the availability of natural resources and the size of the domestic market) other than average income.[41]

In the world pattern estimates by Chenery and Taylor,[42] two methods were adopted to allow for the impact of country differences in resource endowment and size. In the sectoral (primary, industrial and services) regression equations income was treated as exogenously determined while population was assumed to be an explanatory

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[40] Four developments during Mohamed Ali's era (Mohamed Ali was the founder of the dynasty which ruled Egypt until 1952, when its last member was overthrown by a military coup d'état) did much to bring about cotton export growth. One, long-staple cotton was discovered in 1821, and was successfully commercialised in Europe. Two, the increase in the supply of summer water, resulting from Mohamed Ali's vast investments in irrigation, allowed for a pari passu expansion of crop area and summer crops (mainly cotton). Three, the improvement in the system of transportation, and communications (through large investments in roads, ports, canals, etc.) created a unified national domestic market and linked it to Western European markets. Four, the reform of the land-tenure system, although it did not quite establish the right to land ownership (which remained legally owned by Mohamed Ali), abolished communal ownership, tax farming, communal tax responsibility, and also gave the right to a de facto ownership. Such reforms went a long way towards allowing for a market orientation of the land and labour factors, which was a sine qua non for a large scale peasant response to the greater profitability of cotton relative to other crops.

[41] See: H. Chenery, M. Syrquin and H. El Kington, Pattern of Development: 1950-1970, A World Bank Research Publication, Oxford University Press, London, 1975, Chapter 4.

[42] See Chapter 1 Section 1.6.B.

variable. In later estimates of the world pattern additional explanatory variables (e.g. the share of fixed capital formation in GNP, the share of primary and manufactured exports in GNP) were added to the sectoral regression equations. However, this approach proved to be inadequate because of a complex pattern of interaction among the different explanatory variables which undermined the assumption of their additivity. The second approach was there adopted. This entailed a cross-classification of the total country sample by size and resources, and the regression equations were fitted independently to each sub-group. The two measures combined produced the best results.

In the light of the above, the world pattern was disaggregated into three sub-patterns: (i) a large country one (L); (ii) a small primary-oriented one (SP); and (iii) a small industry-oriented one (SI). The trade orientation index (primary or industrial) was used to divide the small country sample into the two latter sub-divisions.[43] The division of the large country sample along the same lines was assumed to be unnecessary on the grounds that the positive impact of the large domestic market in such countries counterbalances the effect of resources. The validity of the classification adopted was strongly confirmed by the regression results (fittings) which showed marked differences among the three patterns..

To assess the production structure and its pattern of change the following methodology has been adopted here. First, two predicted values were obtained for each sector; each pertaining to a different world pattern model (as mentioned above). Secondly, by comparing the actual values of the country in any period with the predicted ones, it

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[43] H. B. Chenery, and L. Taylor, "Development Patterns: Among Countries and Over Time", op. cit., p. 396.

was possible to assess the initial production structure, and its pattern of change. It is also worth noting that since the growth achieved during the import substitution stage was largely industrial growth - particularly manufacturing growth - more emphasis is placed upon this sector.

As for the pattern of growth of sectoral shares during the import substitution stage, the main underlying factors may be summarised as follows:

First, although agricultural production exhibited a positive trend rate of growth the average annual rate of growth was quite low.[44]

Second, the rapid growth of industry and the consequent rise in its share was simply a direct outcome of the rapid growth of capital formation in that sector.[45]

Third, the increased share of the service sector after 1952 was due to the rapid expansion of the government sector and its growing role in the economy. Therefore, we find that in spite of a slow growth of capital formation in services,[46] aggregate services output increased at an annual compound rate of 4.3% during the period 1952/53-1969/70,

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[44] A compound rate of 2.6% per annum during the period 1952-1966 which was less than the rate of population growth 2.7%. See: Ministry of Planning, "Follow-up Reports", various issues; and D. Mead, "Growth and Structural Change in the Egyptian Economy", op. cit., Table 1-A-8.

[45] Real net capital stock in industry increased at an annual compound rate of 10% during the period 1952-1966. See: Chapter 4; and for more details, see: S. Radwan, "Capital Formation in Egyptian Industry and Agriculture", op. cit., pp. 73-116.

[46] See Chapter 5, Table 11.

compared with 6.3% for industry.[47] The explanation is that capital was not the limiting factor to government growth. The immediate constraint on government expenditure was a budgetary constraint, i.e. a financial constraint, although over the longer term the supply of commodity output becomes the effective constraint. However, during the period under study the rapid growth of foreign resource inflows, in the form of government aid and loans, had provided the government with its needs of extra financial resources (above budget revenue), and increased total commodity supply. Thus the constraints on the growth of the government sector were greatly eased.

Table 11 indicates that the actual share of industry in the period 1952-1954 was 19.8%, close to the world pattern predicted for large countries (20.5%). This pattern of growth could be explained in terms of the stimulus which the Second World War and its aftermath had provided for industry, and the stagnation it had imposed on agricultural growth.[48] By the mid-1960s the share of industry had risen to 27%, higher than all of the predicted shares based upon world patterns of growth. At the same time the share of primary sector (agriculture and mining) had declined to only 27% which is substantially below the lowest of the world pattern predicted share (35% for "small-industry-oriented" country). For the service sector, the actual share was also higher than the predicted ones. The sharp decline in

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[47] Aggregate services output amounted to £E443 million in 1952/53 and £E965 million in 1969/70 as compared to £E200 million and £E600 million for industry (including manufacturing, mining, electricity and construction) in the two periods respectively. See: D. Mead, "Growth and Structural Change in the Egyptian Economy", op. cit., pp. 288-289; Ministry of Planning, "Follow-up and Appraisal of Economic Growth for the Years 1959/60 to 1964/65 and 1966/67-1969/70.

[48] Although the agricultural growth was resumed after World War II it had barely reached its pre-war level by 1950. See: D. Mead, "Growth and Structural Change in the Egyptian Economy", op. cit., pp. 56-60.

Table 11

Structure and Pattern of Growth of Production Sectors, all values at constant U.S. 1960 Prices

(Major Sectors; Shares in GNP)

	1952-54 %	1964-1967 %
Actual Shares:-		
Primary Sector (agriculture and mining)	34.3	27.2
Industrial Sector (manufacturing and Construction)	19.8	27.0
Services Sector	44.9	45.8
World Pattern Predicted Shares:-		
Small Primary-Oriented Country, Model (SP)		
Primary sector	42.0	40.2
Industrial sector	15.0	19.9
Services sector	33.0	40.0
Small Industry-Oriented Country, Model (SI)		
Primary sector	38.4	35.0
Induatrial sector	22.0	25.0
Services sector	39.6	40.0
Large Countries, Model (L)		
Primary sector	45.3	39.5
Industrial sector	20.5	26.4
Services sector	34.2	34.1

Source and Notes: See: Table 12

agriculture's share compared with the world pattern predicted rates of growth and shares is explained by Egypt's severe natural resource constraint in comparison to other low income countries.

We now analyse the actual level, structure, and pattern of growth of Egyptian manufacturing output in comparison to the world pattern predicted values. As Table 12 shows the actual sectoral per capita value-added in the early 1950s were invariably below the levels predicted by the world pattern, even for the small primary-oriented country model. The only exceptions were textiles, chemicals, petroleum, and coal products. In terms of sectoral shares in total manufacturing the Egyptian economy showed greater concentration in the 1950s, especially in food, textiles and chemicals, than the world average for the three country groups. This picture can be explained in terms of two predominant determinants of the structure and pattern of growth in the manufacturing sector, namely, the size of demand, and the availability of raw materials. These two factors explain the predominance of the food, textiles, and chemicals sectors at the beginning of the 1950s, and their rising share in total manufacturing during the second half of the 1960s. The food and textile sectors process agricultural raw materials, while the main item in the chemical sector is petroleum refining. It is worth stressing that while textiles was an export sector, the other two were purely import substituting sectors. Therefore, although the growth in the output of these three sectors reduced exports of raw cotton and oil to the extent that they used them as raw materials, they contributed to export proceeds only through increasing textile exports.

Table 12 reveals another important feature brought about by import substitution industrialisation, namely, a substantial increase in the output of most manufacturing sectors. This was achieved despite only

Table 12

Structure and Pattern of Growth of Production Sectors, all values at Constant $1960 Prices

(Manufacturing Sectors)

ISIC	Sector	Per Capital value-added								Shares in Total Manufacturing								Ratios of Actual to Predicted Per-capita Value-added					
		1952-1954				1964-1967				1952-1954				1964-1967				1952-1954			1964-1967		
		Actual A	Predicted SP	Predicted SI	Predicted L	Actual	Predicted SP	Predicted SI	Predicted L	Actual %	Predicted % SP	Predicted % SI	Predicted % L	Actual %	Predicted % SP	Predicted % SI	Predicted % L	A/SP	A/SI	A/L	A/SP	A/SI	A/L
(20-22)	Food, beverages and tobacco	2.8	5.7	5.0	5.6	8.2	7.8	8.9	6.6	27.5	50.0	26.7	40.1	26.0	41.8	26.9	27.7	0.5	0.6	0.5	1.1	0.9	1.3
(23)	Textiles	4.0	1.4	2.2	1.7	7.6	1.8	5.4	3.4	28.9	12.0	11.0	12.2	24.1	9.7	16.4	14.3	2.9	1.9	2.3	4.2	1.4	2.2
(24)	Clothing and Footwear	0.2	1.1	3.0	0.6	0.3	1.5	4.0	1.3	1.6	9.4	15.9	4.6	1.0	8.3	12.1	5.6	0.2	0.1	0.3	0.2	0.1	0.2
(25-26)	Wood Products	0.2	0.4	1.9	0.6	0.5	0.5	3.4	1.5	1.6	3.1	10.4	4.6	1.6	2.8	10.2	6.2	0.5	0.1	0.3	1.0	0.2	0.3
(27)	Paper and Paper Products	0.1	0.1	0.2	0.3	0.7	0.2	0.4	0.6	1.4	0.4	1.0	2.1	2.3	0.8	1.3	2.5	2.8	0.8	0.5	4.9	1.7	1.2
(28)	Printing and Publishing	0.3	0.3	0.3	0.5	1.2	0.5	0.6	0.9	2.7	2.9	1.6	3.5	3.7	2.9	1.7	3.9	0.9	0.9	0.6	2.2	2.1	1.3
(29)	Leather Products	0.1	0.2	0.4	0.2	0.2	0.3	0.8	0.3	0.5	1.4	2.1	1.6	0.6	1.6	2.3	1.4	0.4	0.2	0.3	0.7	0.3	0.6
(30)	Rubber Products	0.03	0.1	2.1	0.4	0.3	0.1	1.1	0.6	0.3	0.8	11.3	2.7	1.0	0.8	3.3	2.4	0.3	0.01	0.1	2.4	0.3	0.6
(31-32)	Chemical, Petroleum & Coal Products	1.1	0.6	1.8	1.5	7.2	0.9	3.4	3.0	10.9	5.3	9.7	10.7	22.8	5.0	10.3	12.7	1.9	0.6	0.8	7.8	2.1	2.4
(33)	Non metallic Mineral Products	0.6	0.7	0.6	0.7	1.4	1.0	1.5	1.4	5.4	5.8	3.2	5.0	4.4	5.4	4.5	5.9	0.9	0.9	0.8	1.4	0.9	1.0
(34)	Basic Metals	1.0	1.0	1.2	1.8					9.2	0.8	0.9	3.7	12.3	7.7	2.8	5.1	0.9	0.8	0.5	1.0	1.1	0.9
(35-38)	Metal Products					3.9	3.9	3.6	4.2		8.2	5.6	9.2		13.2	8.1	12.4						
(2-3)	Total Manufacturing	10.3	11.3	18.6	14.0	31.5	18.6	33.1	23.8	100	100	100	100	100	100	100	100	0.9	0.6	0.7	1.7	0.9	1.3

Notes and Sources: All values are converted to U.S. dollars at the official exchange rate.
A represents actual per capita value-added. SP represents small primary-oriented country model. SI represents small industry-oriented country model.

The formula for predictions is:

$$V_{it} = e^{\beta_o} \cdot Y_t^{\beta_1+\beta_2(\ln Y_t)} \cdot N_t^{\beta_3} \cdot (I/GNP)^{\beta_4} \cdot (E_p/GNP)^{\beta_5} \cdot (E_m/GNP)^{\beta_6}$$ where:

V_{it} represents share (or value-added per capita) of sector i at period t; Y_t represents Gross National Product per capita; N represents populations size; I/GNP represents share of gross fixed capital in GNP; E_p/GNP = Share of primary exports in GNP; E_m/GNP represents share of manufactured exports in GNP;

The β's represent the cross-section world pattern's parameters, See: H. Chenery and L. Taylor, "Development Patterns: Among Countries and Over time", The Review of Economic and Statistics, vol.L, No.4, 1968, Tables 2,3, and 4 (Regressions A), pp.395-399. The formula mentioned above which was used to predict has been preferred to alternative ones (three alternative functional specifications have been given for each sector) since it provided the best fit. It is worth noting that for the SP and SI patterns, the share of capital formation, population, and quadratic income terms were not included; See: Chenery and Taylor, ibid., 406-408.
For the data on GNP and major components, See: Statistical Appendix for Sources and general evaluation of series used. For data on the Manufacturing Sectors:
For the period 1952-1954, see: Central Agency for public Mobilization and Statistics, "Census of Industrial production", 1952 and 1954, Cairo. (in Arabic)
For the period 1964-1967, See: Ministry of Planning, "Realized Production and Income Targets in Mining, Manufacturing, and Electricity by sector, in the First Five-Year plan," Cairo, March, 1966.(in Arabic); and "Follow-up and Evaluation of Economic Growth in the UAR, 1966/67", Cairo, 1968 (in Arabic). Two adjustments were needed to make the industrial series comparable with one another and with the predicted values. First, since the original census values are based on current prices they have been converted to 1960 prices using the official wholesale price index and its sub-components. Ministry of Planning values are available at both current and constant prices. Second, the census figures pertain only to establishments employing ten workers and over, while the Ministry of Planning figures refer to all establishments. The two series were made comparable by deducting from the Ministry of Planning estimates the net output generated in establishments employing less than ten workers. These were obtained from: Central Agency for Public Mobilization and Statistics, "Statistical Indicators for the UAR, 1952-1970", Cairo, July 1971, p.125, (in Arabic).

modest changes in their structure.[49] Although the food, textile and chemical sectors increased their combined share to 70% it remains true that the level and structure of manufacturing output in Egyptian model closer to the level and structure that were characteristic of "small-industry-oriented" countries.

Although Table 12 does not allow specific conclusions to be drawn concerning the allocation of total manufacturing output among consumer, intermediate and capital goods, other available evidence suggests that the share of capital goods, which was estimated at 5% in 1952,[50] had not increased significantly by 1966/67. The growth in the output of metal products can be mainly accounted for by the growth of consumer durables (i.e. automobiles, refrigerators, electric washing machines, etc.). The commodity group which underwent the greatest structural change was intermediate goods catering for the consumer goods sectors.

C. Allocation of Manufacturing Output among Various Uses Including the Substitution for Imports

In this section, an attempt is made to measure import substitution in individual manufacturing sectors. This enables us to compare the actual pattern of import substitution with the one predicted for Egypt by the world pattern. Also an interindustry model is used to divide

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[49] This can be explained in terms of government industrial policies. As we stated earlier, since the mid-1950s the government had gained full control of all investment activity, and was thus in a position to determine both its level and pattern of growth. During the 1950s, the government emphasised heavy industrial inputs (such as iron and steel) but during the 1960s this policy was changed in favour of consumer goods industries. This policy sheds some light on the modest structural change witnessed in manufacturing during the second half of the 1960s, compared with the early 1950s.

[50] See Chapter 4, Table 12.

the growth in sectoral output among the various major uses, namely, intermediate demand, final demand, exports, and import substitution.[51]

1. Measurement of Sectoral Import Substitution

The extent of import substitution during any period could be measured as the difference between the import ratios, for any sector, at two points in time:

$$IS^i = \frac{M^i_{t2}}{O^i_{t2}} - \frac{M^i_{t1}}{O^i_{t1}} \qquad (1)$$

where:

IS^i stands for a measure of extent of import substitution in commodity i (or sector);

M^i stands for imports of commodity i;

O^i stands for domestic production of commodity i;

t1 stands for the initial year;

t2 stands for the terminal year.

In the course of increased specialisation and trade one expects the ratio of imports to domestic production of commodity groups to show a secular rise.[52] We consider here the measurement of import substitution for the manufacturing sector; a semi-logarithic regression

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[51] For reasons related to data, this model will be applied to the Egyptian economy for the 1960s only since it is not possible to convert foreign trade data for the 1950s to an industrial classification standard. Furthermore, using the 1963/64 input/output table to estimate the intermediate sectoral demand for the 1950s would have given grossly erroneous results because of the substantial changes in production coefficients which would be expected during a period of rapid industrial growth.

[52] Variables such as relative prices, and parameters such as the income elasticity of demand for commodities, will also affect the trend rate of growth of the import ratio. See: J. J. Hughes and A. P. Thirlwall, "Trends and Cycles in Import Penetration in the U.K.", op. cit.

model was fitted to the data relating the import ratio to time. The formula used is:

$$\log\left(\frac{M^i_t}{O^i_t}\right) = \alpha_i + \beta_i\,(T) \qquad (2)$$

where:

M stands for imports;

O stands for output; and

T stands for time.

The coefficient β measures the average rate of change of the import coefficient for any sector over the period under study. A negative value of the estimated β's would indicate a positive import substitution.[53] Table 13 summarises the results of measuring sectoral import substitution by using the above formula (equation 2). The following conclusions can be drawn from it.

(i) At the aggregate level, i.e. total manufacturing, the extent of import substitution was insignificant.

(ii) Sectors which showed an increasing import dependence were the food, rubber, metals, and machinery. For food this may be explained by the fact that the widening domestic food gap had had led to an accelerated rise in food imports, both in its primary form and in a processed form such as flour. The increasing demand for rubber, both direct and indirect, by various manufacturing sectors (particularly the motor car industry) led to a rise in imports. The increasing import dependence of metals (and metal products) reflects the rapid growth of consumer durables, mostly in the form of assembly factories,

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[53] A positive β's indicates import penetration. See: Ibid.

which was a major characteristic of industrialisation during this phase. Finally, the rapid growth of imports of machinery was associated with the rapid growth in capital formation and was accompanied by a very moderate rise in domestic production.[54]

(iii) The sectors in which import substitution occurred were textiles, clothing, furniture, printing, leather, petroleum refining and cement, and non-metallic products. For furniture and leather this may be explained by the existence of a traditional sector. For textiles, the introduction of modern technology in the late 1920s led to an increase in supply. Non-metallic products (largely glass and building materials) is an intermediate industry which tends to be developed at an early stage because the technology is not complex and the high transport costs of its bulky products entail natural protection.

2. Pattern of Sectoral Use

Chenery's interindustry model enables industrial growth to be apportioned among three types of demand, intermediate demand, final demand, and export demand and import substitution. Pursuing the same approach here enables us to analyse Egypt's pattern of structural change during the import substitution phase.

To derive an estimate of sectoral intermediate demand for the 1960s, we have used the country's input-output table for the year

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[54] It is worth noting that the very moderate rise of domestic production of machinery was, on one hand, the outcome of market constraints in the form of absence of required skills and smallness in the size of the market (especially if we consider the absence of any capital use in agricultural production). On the other hand, the slow growth of domestic machinery production was also due to the government strategy of developing the consumer and intermediate goods industries first, and only later to develop the capital goods sector.

Table 13

Rates of Growth of Predicted and Actual Import Coefficients

(1959-1966)

ISIC	Sector	Actual growth coefficients	Predicted (estimated β's)
(20-22)	Food, beverages and tobacco	0.064	-0.012
(23)	Textiles	-0.056	-0.035
(24)	Clothing	-0.144	-0.045
(25-26)	Wood Products	-0.012	-0.021
(27)	Paper	-0.152	-0.021
(28)	Printing and Publishing	-0.072	-0.022
(29)	Leather	-0.103	-0.016
(30)	Rubber	0.055	-0.038
(31-32)	Chemicals, Petroleum and Coal Products	-0.050	-0.022
(33)	Non-metallic Products	-0.249	-0.010
(34-35)	Metal and Metal Products	0.039	-0.034
(36-37)	Machinery	0.003	-0.024
(38)	Transport Equipment	-0.054	-0.010
(39)	Others (Miscellaneous)	-0.002	-0.023
(2-3)	TOTAL MANUFACTURING	-0.001	-0.023

Notes and Sources: (1) The actual growth coefficents are derived by fitting the actual sectoral import and output values during the period 1959-1966 to the semi-log regression model: $\log(\frac{Mit}{Oit}) = \alpha_i + \beta i\ (T)$. The figures of import and output are at constant 1959/60 prices.

(2) The predicted growth coefficients have been derived in two stages. First, predicted annual imports and outputs for the period 1959-1966 were derived by applying the regression parameters of the world pattern (production and imports) to Egypt's income per capita and population; See H. Chenery, "Patterns of Industrial Growth", op.cit., Tables 2 and 4, pp.633-34, for world pattern regression parameters. Secondly, the ratio of predicted sectoral imports and outputs were fitted to the above semi-log model.

1963/64.[55] The formula used for that purpose is

$$[A] \cdot (X) = (d)$$

where:

A = the input-output matrix of production coefficients

X = the vector of sectoral gross output

d = the derived vector of sectoral intermediate demand.

To obtain an estimate of final demand, the values of intermediate demand and exports were deducted from the value of gross output for each sector.[56] Table 14 shows how the growth in output was allocated among its various components during the 1960s. The main points to note are:

(i) The most significant structural changes occurred in the intermediate goods sector, as indicated by the change in their output. This sector benefited considerably from export growth and import substitution. The relatively large share of exports in this sector's output growth resulted from the growth of exports of textiles and petroleum products.

(ii) The growth in the consumer goods industries was mainly via the final demand linkage which accounted for 74% of the total growth in output, while the share of both import substitution and exports in total growth were negative. This pattern of structural change in the consumer goods sector started in the inter-war period and was

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55 In order that the input-output table be corresponding to sectoral production and foreign trade data it has been aggregated to a two-digit ISIC level.

56 This approach is deficient because it treats sectoral final demands as residuals. The result is that all statistical errors are reflected in the final demand's estimates. Anyway, the results are quite acceptable and seem to represent a correct order of magnitude.

Table 14

Allocation of Growth in Output Among Its Various Components

1959/60-1965/66 (£E million)

ISIC	Sector	Δ Output	Δ Domestic Demand		Δ Exports	Import Substitution
			Intermediate	Final		
20-21	Food, beverages	55.0	18.6	43.1	-1.2	-5.5
22	Tobacco	18.8	....	19.0	-0.2	....
23	Textiles	64.4	27.6	8.6	21.9	6.4
24	Clothing	10.4	1.0	8.9	0.2	0.3
25-26	Wood Products	9.1	5.6	3.2	-0.1	0.3
27	Paper	14.8	3.1	....	-0.01	11.8
28	Printing and Publishing	8.5	3.9	3.9	0.8	-0.1
29	Leather	0.4	1.8	-1.8	-0.1	0.5
30	Rubber	4.3	2.3	2.3	-0.4	0.2
31	Chemicals	61.1	14.0	23.0	0.7	23.5
32	Petroleum and Coal Prod.	35.4	15.0	-3.2	11.1	12.5
33	Non-metallic minerals	10.0	7.0	3.5	-0.8	0.4
34-35	Metal & Metal Products	28.2	18.1	9.4	0.1	0.7
36-37	Machinery	23.2	5.5	0.2	0.02	17.5
38	Transport Equipment	12.8	2.2	12.1	0.01	-1.6

AGGREGATED:- Values Consumer goods:	£E.m.	%	£E.m.	%	£E.m.	%	£E.m.	%	£E.m.	%
20-22,24-26,28-29 Intermediate Goods:	102.3	100	30.9	30	76.3	74	-0.60	-0.005	-4.5	-4,0
23,27,30-32 Capital Goods:	180.0	100	62.0	34	30.7	17.1	+33.29	18.4	54.4	30.0
33-38 Manufacturing	74.2	100	32.8	44	25.2	34	-0.67	-0.009	17.0	22.9
2-3	356.5	100	125.7	35	132.2	38	32.02	9.0	66.9	18.0

Sources: For Raw data, see: Statistical Appendix; For derivation of data used, see: The Text of this chapter.

Δ denotes increases.

exhausted by the mid-1960s. Any further growth had to cater either for internal demand or for exports.[57]

(iii) The contribution of the capital goods sector towards alleviating the country's foreign-exchange constraint was minimal. For the whole of industry import-substitution accounted for 18% of the total growth in manufacturing output between 1959/60 and 1965/66. This may be compared with Chenery's finding that "import-substitution accounts for 50% of industrialisation in LDCs",[58] but is much closer to Lewis and Soligo's estimates for Pakistan (17.7% for 1954/55-1963/64)[59] and Ahmad's result for India (23% for 1950/51-1965/66).[60]

It seems safe to conclude therefore that during the first half of the 1960s Egypt had entered the intermediate goods stage of import substitution and was gathering momentum for entering the capital goods stage.

D. Import-Substitution and Intermediate Consumption in Industry

In this section we analyse the import structure of intermediate

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[57] As a matter of fact, Egyptian planners had intended that a large portion of the increase in the output of that sector go to exports. But the planned export targets had never been realised, and it was therefore left to domestic final demand to absorb the planned share of exports, thus inflating its share. See: United Arab Republic, Presidency of the Republic, National Planning Committee, General Frame of the Five Year Plan for Economic and Social Development, July 1960 - June 1965, Cairo, 1960 (chapter on Foreign Trade); also, Follow-up and Evaluation Report on the First Five Year Plan, Part 1, Cairo, February 1966.

[58] H.B. Chenery, "Patterns of Industrial Growth", op. cit., p. 641.

[59] S. R. Lewis and R. Soligo, "Growth and Structural Change in Pakistan Manufacturing Industry, 1954-1964", op. cit., p. 106.

[60] J. Ahmad, "Import Substitution and Structural Change in Indian Manufacturing Industry 1950-1966", Journal of Development Studies, Vol. 4, No. 3, 1968, p. 364.

consumption in industry. Some of the products of the manufacturing sector are for final consumption, investment, or exports, while others are used as intermediate goods. The consumption of intermediates in industry is not limited to its own products, but it includes raw materials (both agricultural products and minerals) and inputs from the services sector. Industrialisation may reduce the ratio of imports to total supply of manufactured goods, but lead to higher imports of raw materials and intermediate services.

To analyse the cost structure, the dependence on imports of intermediates, and the degree of backward integration of Egyptian industry the input-output table for 1966/67 is used.[61]

This table only includes columns for six mining activities, 20 manufacturing activities and seven other minor service activities. The direct inputs to industry from all domestic sectors and from imports are shown, but since the matrix in its present shape cannot be inverted there is no way of measuring indirect requirements.

In the 1966/67 table inputs are valued at purchase price, and thus include indirect taxes and customs duties. Import coefficients tend to overstate the import content of output and intermediate consumption. For the tobacco industry where customs duties are 12 to 15 times the c.i.f. value of imported tobacco leaf the bias is very serious. Therefore tobacco is excluded from the analysis of import dependence. In other instances the bias may not be very large because tariffs on raw materials and spare parts (the main imported inputs) are generally low. The inclusion of customs duties may overstate the ratios of imported inputs to gross value-added at

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61 Central Agency for Public Mobilisation and Statistics, Input-Output Table of the Arab Republic of Egypt, 1966/67, Cairo, April 1973, (in Arabic).

factor costs by 5% - 20%.

It is also worth mentioning that since indirect taxes and subsidies on output are shown separately in the 1966/67 table, it is possible to derive the value of gross output at factor cost to the industry, but not to the economy since the taxes on inputs cannot be netted out. The concept of value-added used here is gross value-added at factor costs.

Table 15 represents the aggregate cost structure in manufacturing (excluding tobacco) as revealed by the 1966/67 input-output table.

One of the outstanding features of this table is the significance of agricultural inputs in Egyptian industry, and the heavy reliance on imports of raw materials (agricultural products and minerals) to satisfy input requirements. In aggregate, manufacturing industries spend £E155.8 million on agricultural inputs, and more than 50% of that amount is accounted for by imports. This dependence of industry on imports of agricultural inputs is one of the interesting features of the Egyptian economy. Land scarcity, which imposes a constraint on agricultural development and provides an incentive for economic diversification, is also a limiting factor on import-substituting industrialisation.

Furthermore, Egyptian industry has no important resource base in mining, except for petroleum. In 1966/67 mineral products accounted for 10% of total inputs. If we exclude crude petroleum, this share falls to some 2%. Thus, import dependence for this item is high, as some 55% of mining inputs are purchased abroad.[62]

Manufactured inputs were the largest component of intermediate

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[62] This situation may change in the late 1970s and 1980s with new discoveries of gas, phosphates, and other mineral deposits.

Table 15

Aggregate Cost Structure in Manufacturing
(excluding tobacco)

1966/67

	Total (£E million)	Intermediate Imports (£E million)	Intermediate Imports as Percentage of Intermediate Consumption
1. Intermediate Consumption:			
Agricultural Products	155.8	78.8	50.5
Mining	56.3	31.2	55.4
Manufacturing	316.9	78.1	24.6
Electricity	12.3	-	-
Public Utilities	0.5	-	-
Transport and Storage	6.1	-	-
Other Services	15.6	0.2	1.3
TOTAL	563.5	188.3	33.4
2. Gross Value-added	252.4		
3. Gross Output at factor costs to the industry	815.9		
4. Indirect Taxes minus subsidies	22.2		
5. Gross Output at market price	838.1		

Source: Central Agency for Public Mobilisation and Statistics, 1966/67 Input-Output Table, Cairo, April 1973.

consumption, accounting for 56% of the total, but the import content of these inputs - which was 25% - was lower than in both agriculture and mining.

Table 16 shows the composition of imported inputs of manufactured goods for 1966/67. Clearly chemicals and spare parts were the most important.

Industries in which production is relatively intensive in terms of manufactured inputs may have high indirect import requirements as manufactured inputs themselves are made from primary commodities.

Table 17 shows the intermediate imports in manufacturing production for 1966/67. In that year the import content of gross output at factor costs to industry was 23.1%, and the import content of total inputs 33.4%. On average, £E0.746 worth of imports is necessary to generate one unit of gross value-added. Thus, Egyptian industry seems to be related by strong backward linkages to the rest of the world through imports. Table 17 also shows that food and leather ranked first and second in terms of the imported input/value added ratio. These were followed, in decreasing order by basic metals, metallic products, petroleum refining, chemicals and capital goods.[63]

Table 16

Imported Inputs of Manufactured Goods, 1966/67

Type of Goods	Value £E(000s)	%
Manufactured food products	4,943	6.3
Textiles	5,386	6.9
Basic Metals and Metal Products	6,375	8.3
Paper	5,847	7.4
Spare parts	18,360	23.5
Chemicals	29,841	38.2
Others	7,385	9.4
Total	78,137	100.0

Source: Central Agency for Public Mobilisation and Statistics, 1966/67 Input-Output Table, Cairo, April 1973.

Note: Inputs to the tobacco industry have been excluded.

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63 This is an unusual pattern mainly because of the rank of food and leather.

The importance of high import dependence is perceived in times of balance of payments difficulties. Policy-makers confronted with balance of payments difficulties tend to tighten import controls and reduce or delay foreign exchange allocations to industry. The greater the direct and indirect import requirements, the greater is the adverse impact on domestic output. However, the impact on manufacturing output of a one-pound reduction in imports during 1966/67 may not be correctly reflected by the data in Table 17 because the coefficients shown do not include indirect requirements, and also the marginal coefficients may have been higher than the average coefficients.[64]

CONCLUSION

Looking back at the Egyptian balance of payments situation in the post-war period the feature which stands out most clearly is the continuing and growing deficit on current account. From the War's end to 1951 these deficits were no particular cause for concern. Current deficits were small and were easily covered by drawing on accumulated Sterling assets. After 1951 the situation was quite different. The income terms of trade of the country fell by 36% from 1951 to 1952, largely due to the collapse of the Korean cotton boom. Some improvement was noticeable between 1953-1960, and 1964-1970. In the meantime, however, a number of other changes had taken place in the balance of payments. Net receipts from invisible exports rose from 8% of merchandise exports in 1952 to 29% of a much larger total in 1966. This was supplemented, from 1959 onwards, by foreign aid and long term loans.

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64 If the foreign-exchange allocation delays or reduces imports of an ingredient used in fixed quantities in some process. Spare parts for machinery are a case in point. On the other hand, the marginal ratio may turn out to be lower than the average coefficient when there is room for substitution between inputs.

Table 17

Intermediate Imports in Manufacturing Production, 1966/67

Code	Industry	Import Content of gross output at market Prices %	Import Content of gross output at factor costs %	Imports as percentage of Intermediate Consumption %	Imports Per unit of gross value-added at factor costs £E
20	Food	42.9	43.8	51.2	3.062
21	Beverages	3.6	6.7	9.7	0.221
23	Textiles	6.3	6.4	9.6	0.191
24	Wearing apparel	10.1	10.3	22.6	0.190
25	Wood	4.4	4.4	6.6	0.132
26	Furniture	7.5	7.5	15.6	0.146
27	Paper	15.6	15.6	26.2	0.386
28	Printing	6.5	6.6	10.7	0.170
29	Leather	44.7	44.7	58.6	1.882
30	Rubber	23.5	23.6	44.8	0.498
31	Chemicals	27.5	28.0	45.2	0.739
32	Petroleum	31.0	31.0	50.2	0.811
33	Non-metallic products	9.8	10.1	16.6	0.261
34	Basic Metals	21.8	21.9	27.9	1.008
35	Metallic products	38.3	38.4	72.2	0.819
36	Non-electrical machinery	20.6	21.2	46.2	0.392
37	Electrical machinery	23.3	24.3	42.2	0.575
38	Transport equipment	17.6	17.9	29.8	0.451
39	Miscellaneous	17.2	17.2	30.1	0.403
	Total Manufacturing (excluding tobacco)	22.5	23.1	33.4	0.746

Source: Central Agency for Public Mobilization and Statistics, 1966/67 Input-Output Table.

Receipts from the Suez Canal were of considerable help to the country and the balance of payments.

Military expenses were a burden on the Egyptian economy, and foreign exchange proceeds. The major source of military equipment was the Eastern block. However, although these expenditures represented a heavy burden on the balance of payments of Egypt, they are very important to national security, especially for Egypt with a long history of foreign domination.

Import substitution industrialisation was an import-intensive process as has been the case in many developing countries. Therefore, although Egypt's import substitution strategy had brought about a remarkable growth in industrial production and national income, it did not solve the balance of payments problem. On the contrary, the foreign exchange gap widened considerably, and the foreign debt reached alarming proportions (given the country's debt-servicing capacity). Furthermore, by the mid-1960s an inflexible pattern of sectoral interrelations began to emerge in the economy. This was due to the fact that the import capacity was not only growing at an insufficient rate but had also become inflexible with regard to its commodity composition. Its slow growth resulted from the slow growth in export proceeds, while its inflexibility was due to the fact that the commodity composition of imports came to consist almost exclusively of imported inputs and foodstuffs. This situation reduced the capacity of foreign trade to play its essential balancing role in the economy.

For example, the imbalance between domestic demand and supply of food became more difficult to correct through imports of food since this would have entailed sacrificing essential imports of producer goods, thereby hampering production and growth. In addition, an industrial cost-price structure emerged which made the expansion of

exports of manufactures a difficult task. This meant that the industrial surplus (i.e. industrial goods not consumed at home) would have to be (i) dumped on to the foreign market with a detrimental effect on savings; or (ii) industry would work at below capacity level.

The combined effect of the above difficulties was to bring growth to a halt. After 1964 there was no growth in industrial production or in real GNP and the economy could be said to have entered Lewis' "structural inflation" stage.[65] This lasted until the outbreak of the 1967 Arab-Israeli war which altered the course of events.

The statistical analysis of the pattern of import-substitution growth and the resulting structural change has been carried out at both an aggregated and disaggregated sectoral level, the latter involving comparison with a cross sectionally estimated "World Pattern".

From this statistical analysis we can conclude that while Egypt's import-substitution strategy succeeded in raising the level of industrial output - bringing it closer to the world average for countries with her income, size, and resources - it brought about little transformation in the industrial structure. To a large extent the strategy was based on foreign borrowing, and its main aim was to create a structure of production capable of propelling the economy into sustained growth.

However, the import-substitution strategy failed to achieve this aim. It failed to establish a capital goods sector of any appreciable size, with the result that the economy was more dependent on capital

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[65] See Chapter 1, section 1.6.A.

goods imports in the second half of the 1960s than it was at the beginning of the 1950s. This should have been a matter of concern since in the case of Egypt the capital requirements of growth were high due to the need to substitute capital for even scarcer resources.

The relaxation in capital goods production would have been legitimate if the pattern of industrial growth had been export-oriented, enabling marginal foreign-exchange earnings to keep pace with import requirements, including rising food and capital goods imports. However, as we have seen, industrial growth was largely inward oriented, and its contribution to export growth was minimal.

This inward-orientation of the expanding industrial sector together with the lack of growth of the capital goods sector culminated in sharply rising foreign debt, and by the mid-1960s the situation had become serious. The restriction on imports in response to the foreign exchange crisis deprived the economy of essential growth inputs. Consequently, from the middle of the 1960s, industrial growth was brought to a halt.

CHAPTER 9

ECONOMIC POLICY, ANALYSIS AND DESIGN

9.1. INTRODUCTION

In this chapter we use the model for the purpose of policy analysis and design. The chapter is arranged as follows:

Section 1 distinguishes between two alternative general model specifications.

Section 2 uses the model to attempt to replicate the actual economic system during the period in question.

Having been subjected to the above test, the model is used to conduct a two-gap analysis and to undertake experiments aimed at identifying the dominant gap. This preliminary step to policy analysis is reported in Section 3.

Section 4 uses the model to test alternative strategies for achieving optimal long run growth and external equilibrium. Here Tinbergen's theory of economic policy is adapted and used.

9.2. TWO GENERAL MODEL SPECIFICATIONS

As stated in Chapter 7 the complete model is overspecified. This is because the national income identity, $C + S \equiv C + I - F$, dictates that both aggregate consumption and savings cannot be estimated independently, given that GNP is supply side determined. One of them has to be estimated as a residual. Therefore, in order to avoid overdetermining we need to distinguish between two alternative general model specifications.[1]

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[1] We will be using each time the model is solved.

Model 1:

This model is a conventional one in the Keynesian tradition. In it aggregate savings are estimated autonomously by using the following equation and two identities. Whether we treat government savings as exogneously determined, or estimate it from the government income and consumption functions, is immaterial for the purpose in hand.

$$S_t^p = a + b\left(\frac{Y^p}{POP}\right)_t + c\ (S)^i + e\ (D)^{sp} \qquad (1)$$

$$S_t^g \equiv Y_t^g - C_t^g \qquad (2)$$

$$S_t^T \equiv S_t^g + S_t^p \qquad (3)$$

Estimating aggregate savings in the manner stated above aggregate consumption is then estimated as a residual

$$\text{i.e., } C_t^T = (GNP)_t - S_t^T \qquad (4)$$

Thus, the following equations and identities become redundant, i.e. not utilised, in the model.

$$C_t^i = \alpha_1 ci(V)_t^i + \alpha_2 ci\left[M_t^{c+i+k} + T_t^{ii} + \Delta ST_t^i\right] - I_t^{t.g.f.} - E_t^i$$

$$C_t^s = \alpha_1 cs(V)_t^s + \alpha_2 cs(T)_t^{is}$$

$$C_t^{h(i+s)} = a_2 + b_2\left(\frac{Y^p}{POP}\right)_t + c_2\ (POP)_t + d_2\ (tot)_t^i$$

$$C_t^T \equiv C_t^f + C_t^i + C_t^s$$

$$C_t^T \equiv C_t^f + C_t^{h(i+s)} + C_t^g$$

So, Model 1 as described above is used to project both the ex ante saving and trade gaps.

Model 2:

This model is based on the input-output specification for consumption of industrial goods and services, as mentioned in an earlier chapter.[2] Aggregate consumption, of both household and government, is determined by using the following equations and identity:

$$C_t^f = a_1 + b_1 \left(\frac{Y^p}{POP}\right)_t + c_1 (POP)_t + d_1 (tot)_t^i \qquad (5)$$

$$C_t^i = \alpha_1 ci(V)_t^i + \alpha_2 ci \left[M_t^{c+i+k} + T_t^{ii} + \Delta ST_t^i\right] - I_t^{t.g.f.} - E_t^i \qquad (6)$$

$$C_t^s = \alpha_1 cs(V)_t^s + \alpha_2 cs(T)_t^{is} \qquad (7)$$

$$C_t^T \equiv C_t^f + C_t^i + C_t^s \qquad (8)$$

(given the production and trade equations)

Estimating aggregate consumption in the prescribed way then enables aggregate savings to be determined as

$$S_t^T = (GNP)_t - C_t^T \qquad (9)$$

Model 2 therefore makes explicit some of the structural factors which lead to a direct interdependence of the savings and export coefficients, and accordingly between the savings and trade gaps.

9.3. TESTING THE MODEL'S PERFORMANCE

Before using the model for projections and policy design, one must first assess its ability to stimulate accurately the actual economy. One such approach would be to compare the fitted values of the various structural equations with the actual ones for the period

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[2] See Chapter 6.

in question. However, a more stringent test is to assess the performance of the model as a complete system. This can be undertaken by inserting in the model's equations for each year the model's projected values of the current and predetermined variables instead of the actual values. The latter test has the advantage of revealing any systematic bias built in the model's structure. Both of the tests mentioned above are used.[3] Three estimates for each of the major endogenous variables are given: (i) equation estimates; (ii) model estimates; and (iii) actual estimates. In cases where alternative functional specifications were provided, i.e. in the case of consumption and savings, the results of the alternative equation estimates are also given.

A comparison of the actual and model estimated values of the endogenous variables and their aggregates show that the model is able to stimulate the performance of the actual economy with a high degree of accuracy, and without systematic bias.

9.4. ANATOMY OF EX-ANTE SAVINGS AND TRADE GAPS

The decisions to invest, save, import or export, i.e. the decisions affecting the four aggregates that determine the size of the savings and trade gaps, are often undertaken by different groups and have different functional relations. Therefore, there is no a priori reason for their being ex-ante mutually consistent. Consequently there is no reason in principle why the two gaps should be equal ex ante.[4] As for the observed ex post equality, it is achieved through short run adjustments to actual foreign resource inflows.

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[3] See Appendix 8.

[4] A. P. Thirlwall, "Growth and Development: With Special Reference to Developing Economies", op. cit., p. 245.

In Egypt's case, the government gained full control of all investment activity and was thus in a position to determine both its level and pattern of growth from the mid-1950s onwards. Furthermore, the industrial sector, whose surplus was the main source of private savings, was almost totally publicly owned and controlled. Although household savings accounted for only a small share of total savings these were influenced by the government through its extension of social security and pension schemes. Nevertheless, the government's decision making body was represented by a myriad of organisations, committees, and individuals whose policies were not always consistent. Therefore, the actual realised values of the four variables significantly deviate from the desired ones.

Below we discuss two main issues relating to the gaps. First, the ex-ante gaps are projected and both their structure and their ex-post equalisation mechanism are analysed. Second, the interdependence between the savings and export parameters in two gap models and its consequences for policies aimed at restoring equilibrium in the external balance are discussed.

A. Structural Analysis of the Two-Gaps

In order to project the ex-ante gaps the following methodology is used.

Three alternative compound rates of growth of real GNP ($\bar{g}$) for the period 1953/54-1965/66 are assumed. These rates are 4.5%, 5.5%, and 6.5% per annum.

A pattern of investment allocation similar to the historical one is assumed, with no changes assumed in the historical values of the other explanatory variables in sectoral production functions, i.e.

land, labour and fertilisers.[5]

Sectoral capital stocks needed to achieve the three alternative growth targets were estimated by the following model's equations:

$$V_t^c = a_1 + b_1 (L)_t^c + c_1 \left(\frac{K_{t-1}^a}{L}\right) + d_1 (F)_t^c + (D)_t^{v.c.} \qquad (10)$$

$$V_t^f = a_2 + b_2 (L)_t^f + c_2 \left(\frac{K_{t-1}^a}{L}\right) + d_2 (F)_t^f \qquad (11)$$

$$V_t^i = a + b (K)_{t-1}^i - Ex_t^i \qquad (12)$$

$$V_t^{soh} = a_1 + b_1 (K)_{t-1}^{soh} \qquad (13)$$

$$V_t^{os} = a_2 + b_2 (K)_{t-1}^{os} + c (N)_t^{os} + (D)^{vos} \qquad (14)$$

Given the projected capital stock, the investment in each sector was estimated from the following equations:

$$K_t^a = 0.97 (K)_{t-1}^a + I_t^a \qquad (K_{1929}^a = 0) \qquad (15)$$

$$K_t^i = 0.95 (K)_{t-1}^i + I_t^i \qquad (K_{1929}^i = 0) \qquad (16)$$

$$K_t^{soh} = 0.97 (K)_{t-1}^{soh} + I_t^{soh} \qquad (K_{1929}^{soh} = 0) \qquad (17)$$

$$K_t^{os} = 0.98 (K)_{t-1}^{os} + I_t^{os} \qquad (K_{1929}^{os} = 0) \qquad (18)$$

Taking the observed rate of indirect taxes as a percentage of GDP, and the balance of factor payments abroad this supplemented us with the values of GNP. Given these projected values of GNP, government income and private disposable income were estimated by the following two equations:

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[5] This is a reasonable assumption since any increase in land above the observed historical rate would have required investments with a long gestation period in water control (e.g. High Dam), and could not have materialised over the period in question. As for labour, all sectors were characterised by excess labour capacity and accordingly could have increased their output within the assumed growth rates without any additional demand for labour.

$$Y_t^g = a + b\,(GNP)_t \tag{19}$$

$$Y_t^p = (GNP)_t - Y_t^g \tag{20}$$

Given the projected values of industrial value-added, and using the observed average ratio of S^i / V^i during the period in question, the industrial surplus was projected by the following equation:

$$S_t^i = \alpha_1 si\ (V)_t^i \tag{21}$$

The procedures described above were undertaken for each of the three alternative rates of real GNP growth.

Finally, the projected values of the predetermined variables mentioned above were inserted in the import, export and savings equations of the reduced form model. Then using equations 22 and 23 below the ex-ante savings and trade gaps were predicted under the alternative growth rate assumptions.

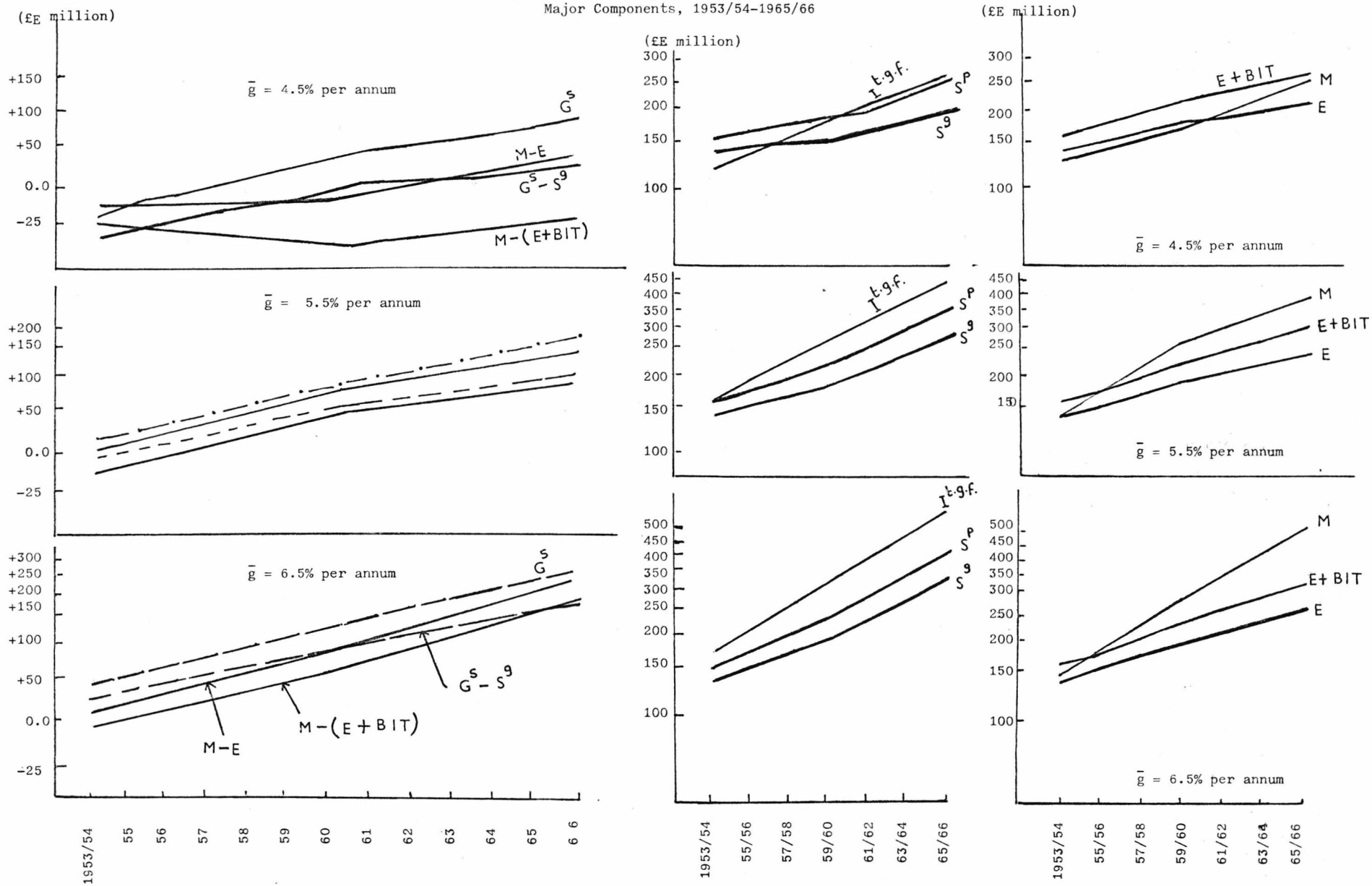
$$G_t^s = I_t - S_t \tag{22}$$

$$G_t^t = M_t - (E_t + BIT) \tag{23}$$

Figure 1 shows the results of this procedure. It shows that the savings gap was the dominant one over the period in question at all assumed rates of real GNP growth. A closer look at the savings gaps show that despite its increase over the period it increased at a declining rate. This was due to the increasing rate of growth of private savings which was, in turn, a function of the rising share of industry in GNP. Since the industrial surplus is the main source of savings, and a rise in the share of industry in GNP accompanied by no decline in the share of industrial surplus in total industrial value-added would, ceteris paribus, lead to a rising marginal propensity to save. This points to an important built-in

FIGURE 1

Projections of Savings and Trade Gaps and Their Major Components, 1953/54-1965/66



stabilisation mechanism in the system which should be more fully utilised.

The declining rate of growth of the savings gap would have been faster at higher rates of growth if we had linked the industrial capacity utilisation to the rate of growth. Empirical observation, generally, points to a negative correlation between the rate of growth of GNP and the capital-output ratio. Nevertheless, in Egypt's case, we thought it more fit to tie the industrial excess capacity to industrial exports.

In the case of trade gap, G^t, both commodity exports and imports increased at a declining rate, except for imports when a $\bar{g}$ of 4.5% was assumed. This was due, in the case of imports, to import substitution which was partially built in the system. In the case of exports, the decelerating is an outcome of the change in commodity composition of both domestic demand and supply, the decline in the share of agriculture (the main exporter), and the increasing domestic use of raw cotton.

The impact of the interaction of the rates of growth of imports and exports on the trade gap at the alternative GNP growth rates was not uniform. At both low and high GNP growth rates the trade gap widened at an accelerating rate. However, when the medium rate of growth was assumed it increased at a decelerating rate.

A few words need to be added about the structure of Egypt's two gaps and their relationship to economic policies. The savings gap was a direct outcome of two major factors, the budget deficit on current account (this was discussed earlier) and the growth of investment above the "minimum required level".

The sharp rise in investments in the Aswan High Dam and related electricity projects accounted for the accelerated growth of investment. This raises a conceptual problem. Given the GNP target rate of growth,

the two-gap theory is based on minimum required investment. It might be objected that since the High-Dam investment did not contribute to output during the period in question, it should not be considered as constituting a part of the minimum investment required to sustain GNP growth. However, if we abide by the spirit rather than by the letter of the two-gap theory, such an investment should be regarded as essential and considered as part of the minimum required investment, particularly in the light of the country's poor resource endowment and its need to substitute capital for scarce land.

But even if the above logic is acceptable, it must be stressed that the import-substitution strategy erred in that it overstretched the demand for the country's meagre resources. Large investments allocated to the commodity sectors coincided with investments in projects with a long gestation period such as the High Dam as well as with a rising budget deficit.

About half of the foreign trade gap was the direct result of the food gap. Deducting the food gap from the trade gap gives the former a positive sign for most of the sample period, at both 4.5% and 5.5% rates of GNP growth.

The net balance of invisible trade was a major source of foreign exchange receipts. It increased from £E22 million in 1953 to £E76 million in 1966. The main source of the rise of invisible receipts was the nationalisation of the Suez Canal in 1956, and the rapid growth of its foreign exchange earnings. This, together with the increased receipts from tourism helped reduce the trade gap.

B. Interdependence between the Savings and Export Parameters

Three main issues relating to the empirical estimation of ex-ante savings through the use of over-simplified aggregate models have been discussed in the recent two-gap literature.

(i) If the trade gap is the dominant one, any attempt to estimate the savings gap from historical data would provide biased results. With the two gaps being ex ante unequal, and the foreign resource inflow presumably filling the larger of them, the historical data pertaining to the smaller gap necessarily reflect expost adjustment, and consequently provide a downward biased estimate of savings and/or an upward biased estimate of investment. Using the estimated savings and investment parameters for extrapolating the savings gap would, in such cases, produce an overestimate.[6]

(ii) In the national income identity, $I_t = S_t + F_t$, the assumption is that domestic and foreign savings are additive. In other words, foreign resource inflows represent a pure addition to the domestic resources available for financing investment, and are neutral vis à vis the domestic propensity to save. This assumption has been challenged on the grounds that, to the extent that the inflowing foreign resources are used to increase current private or public consumption, observed domestic savings must be below the intended ones.[7] In other words, even if the savings gap is the dominant one, easy accessibility to foreign aid might lead to less than full potential domestic savings.

(iii) The two-gap theory in its initial formulation[8] assumed

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6 This point was first raised by J. C. H. Fei and G. Ranis, "Foreign Assistance and Economic Development: Comment", The American Economic Review, LVIII, No. 4, September 1968, pp. 897-912.

7 See: Thomas Weisskopf, "The Impact of Foreign Capital Inflow on Domestic Savings in Underdeveloped Countries", Journal of International Economics, II, 1972, p. 25. See also, "An Econometric Test of Alternative Constraints on the Growth of Underdeveloped Countries", The Review of Economics and Statistics, LIV, No. 1, February 1972, pp. 67-78.

8 See: Chenery and Strout, "Foreign Assistance and Economic Development", op. cit., pp. 679-733.

independence of the savings and trade gaps. This assumption would hold if the investment, savings, import and export parameters are independent or alternatively, if they are interdependent but at the same time seem to shift equally and simultaneously.[9]

The first issue does not arise in Egypt's case since the savings gap was dominated throughout the period in question. Despite the second issue being related to the first, inflows of external resources were instigated by internal demand and by no means were readily available. Consequently, given the economic system's constraints, it could be deduced that the observed savings behaviour largely reflected the desired one.

However, the third issue assumes greater importance in Egypt's case, was indicated above, the savings, investment, import and export parameters are by no means independent. Particularly important is the interdependence of the savings and export coefficients.

Ordinarily exports affect savings directly as well as indirectly. A rise in the share of exports in GNP leads to a rise in income above what is anticipated with a constant export coefficient. The extra rise in income stems from the gains from trade associated with a better allocation of resources (classical trade theory) or the foreign trade multiplier (modern trade theory). In the case of foreign exchange constrained economy, the increase in income is even greater

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[9] This assumption has been challenged on both theoretical and empirical grounds. See: A. Maizels, Export and Economic Growth of Developing Countries, The Cambridge University Press, 1968, p. 58. Also see: J. K. Lee, "Exports and the Propensity to Save in LDCs", The Economic Journal, 81, No. 322, June 1971, p. 341; H. B. Chenery and P. Eckstein, Development Alternatives for Latin America, Economic Development Report, No. 29, Harvard University: The Center for International Affairs, April, 1967; Harry Johnson, Economic Policies Towards Less Developed Countries, Brookings Institution, New York, 1967.

due to the high marginal productivity of the foreign exchange factor of production (two-gap theory). Also, a rise in the export coefficient can affect the savings propensity through its effect on income distribution which would raise the share of those groups with a higher saving propensity such as the exporters; or it can cause a shift in the saving schedule of other groups such as government (for example in cases where export taxes represent a major source of tax revenue) or households.

In Egypt's case the slow growth of exports had a negative effect on savings through all of the above described channels. The slow growth of industrial exports had a detrimental effect on the industrial surplus, the main source of national saving, as a result of its impact on capacity utilisation. Even the modest rate of export growth was achieved at the cost of increasing government export subsidies (a negative export tax) which contributed to government dissaving.[10] Finally, the consumption liberalisation policies had a downward influence on household savings.

C. Sensitivity of the Savings and Trade Gaps to Changes in Industrial Exports

In any ex-ante forecast, where the values of the exogenous variables are assumed to be arbitrary, the deviation between the predicted and actual values of endogenous variables may be large due to wrong assumptions about the exogenous variables. It is also assumed that there is no major structural change during the forecasting period. In other words, the magnitude of coefficients estimated from the sample period is assumed to remain the same, which may be expected

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[10] This aspect is not incorporated in our model with all its alternatives.

but is certainly not assured. Therefore, the researcher must be careful in asserting the accuracy of his predictions. In this situation a researcher should use sensitivity analysis and make several predictions based on different assumptions about the exogenous variables, and then reluctantly voice his opinion about the prediction which he thinks may be closest to reality.

The model we used here is Model 2, assuming an average compound rate of GNP growth of 5.5% per annum which approximates the historical rate of growth, and no change in the allocation of investment. Industrial exports are treated in our solution as exogenously determined so that we could readily vary it as part of our analysis. The other letter variables and parameters are either target variables or policy instruments which will be used later as part of our policy design experiments.

Equations 24 and 25 represent a solution of the model for the year 1966.[11]

$$G_t^s = 1692.274 - 0.868\ (GNP)_t - 0.132\ (Y)_t^g - 1.525\ (Ex)_t - 0.705\ (I)_t^{t.g.f.} + 0.6\ (Ex)_t^i\ (\alpha_2 mk)_t - 345.013\ (\alpha_2 mk)_t + 148\ (N)_t^{os} + I_t - E_t^i \qquad (24)$$

$$G_t^t = -184.458 + 0.131\ (GNP)_t - 0.132\ (Y)_t^g + (Ex)_t(\alpha_2 mk)_t - 575.023\ (\alpha_2 mk)_t - 0.391\ (Ex)_t^i - 21.247\ (\alpha L)_t + 0.49\ (I)_t^{t.g.f.} - (E)^i \qquad (25)$$

As may be seen from equations 24 and 25 there are various direct

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[11] The reason for selecting this year for our experiment is that the future course of the system's variables is by no means certain as a result of the outbreak of the Arab-Israeli War in 1967.

channels through which changes in industrial exports would influence savings, investment, imports and GNP. An increase in industrial exports (E^i) would lead to a decrease in both savings and trade gaps, assuming that a significant increase in (E^i) leads to better capacity utilisation in the industrial sector,* which in turn leads to a rise in both GNP and imports at the given installed capacity.

Table 1

Sensitivity of the Savings and Trade Gaps to Changes in Industrial Exports for the year 1966

(in £E million)

	$\frac{E^i}{V^i}$	Ex^i	I^v	GNP	Y^g	M	E + BIT	G^t	I	S	G^s
1	0.28	95	48	2,058	335	374	344	+30	486	444	+42
2	0.31	0	28	2,155	352	414	386	+28	476	458	+18
3	0.36	0	0	2,155	352	414	419	-5	438	493	-55

$\frac{E^i}{V^i}$ = industrial export coefficient

Ex^i = excess capacity output in industry

I^v = investment in inventories

GNP = gross national product

Y^g = government net income

M = total imports

E = total commodity exports

BIT = net balance of invisible trade

I = total investment

S = total savings

G^s = savings gap

G^t = trade gap

Furthermore, the above changes would be expected to lead to a decline in undesired investment in inventories $(I)^v$, and accordingly, a decline in total required investment.

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* that is a decline in $(Ex)^i$.

The outcome of these changes, and their impact on the sizes of the savings and trade gaps, can only be ascertained through experimentation. Therefore, we have made alternative assumptions about the industrial export coefficient, and its relationship to industrial capacity utilisation, and then solved equation 24 and 25 for the values of G^s and G^t. The results of this experiment are given in Table 1. Given the limited structural flexibility of the economic system, a rise in the industrial export coefficient leads not only to a shift in the savings schedule but also to an increase in its inclination. This, reinforced by other changes, leads to the savings gap declining at a faster rate than the trade gap, as indicated in Table 1.

The conclusions derived from the present section have a substantial bearing on the design of economic policy. As we have seen excess aggregate demand, as evidenced by a dominant ex ante savings gap, coexisted alongside deficient demand for industrial goods, as evidenced by the prevalence of substantial excess capacity and undesired inventory accumulations. In such circumstances, a simple policy prescription, based mainly on curtailing consumption, could bring about a recession without achieving its objectives. Any policy mix capable of coping with a situation where policy objectives are conflicting must include policy instruments equal in number to the policy targets. In fact, this is the essence of the Tinbergen approach to economic policy design. The next section adapts this approach in order to experiment with alternative policy mixes aimed at restoring external equilibrium.

9.5. ECONOMIC POLICY DESIGN

According to Tinbergen's theory of economic policy,[12] the endogenous variables (or jointly determined) of a model are divided into two categories: target variables and irrelevant variables. On the other hand, the pre-determined variables are divided into policy instruments and data. After converting the model to its reduced form, the equations pertaining to the irrelevant variables are eliminated (by algebraic means), leaving a set of equations containing only policy instruments, target variables and data.

Ordinarily, one would assign values to the policy instrument variables and solve for the values of the target variables (given the system's data). Tinbergen's approach reverses this order, thus assigning values for the target variables and solving for the values of the policy instrument variables. Further, an essential condition for the application of this approach is that the number of policy targets (knowns) and instrument variables (unknowns) would be equal, that is, the reduced policy model's degrees of freedom would be zero.

The above outline constitutes the fundamentals of Tinbergen's approach. However, in applying this approach to our model for Egypt, the choice of target and instrument variables must be made clear.

The theory of economic policy, in general, assumes the structural parameters of the model to be fixed and not part of the tools of policy design. However, this need not be the case. For example, in Egypt's case some of the parameters are themselves the product of economic policies and are subject to policy manipulation.

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[12] See: Chapter 1, section 1.3. For an outline and general assessment of the approach, see: K. A. Fox, T. K. Sengupta, and E. Thorbecke, The Theory of Quantitative Economic Policy, North-Holland Publishing Company, Amsterdam, 1973, Chapter 2.

Therefore, in our attempt to experiment with policy mixes for Egypt we included some strategic structural parameters as policy instruments. The last issue related to the choice of policy targets and instruments is to explain the effect of the model's complete recursiveness on the process of selection.

Theoretically speaking, in a completely interdependent system any policy instrument can influence any policy target. But in a completely recursive system like ours this is not the case. Policy instruments of a certain order[13] can influence only target variables of the same order, or those of a higher order. This restriction, coupled with the social and technical constraints imposed on the values of certain policy instruments, reduces the automaticity of choosing effective instruments to achieve our policy objectives.

It is also worth noting that values of the target variables need not be absolute but could instead be related to one another in a target performance function (i.e. a social welfare function).[14] As a matter of fact, since economic decision-makers are rarely indifferent to the choice of policy instruments, they could also be included in the general welfare function. The task of the economic policy designer in this case would then be to maximise this function. But in the absence of an operational welfare function, and in order to relax Tinbergen's absolute target alternative, we assigned several alternative values, within socially and technically acceptable limits, for a combination of targets and instrument variables and

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[13] See Chapter 7, figure 1 and Appendix 8.

[14] See: H. Theil, Economic Forecasts and Policy, North-Holland Publishing Company, Amsterdam, 1958, Chapter 7 and 8.

and then solved for the remaining unknowns. In this case we would have more policy degrees of freedom and would be able to present a range of alternative policy mixes.

The foregoing approach is usually used to design future policies. However, the outbreak of the Arab-Israeli war in 1967, which brought major distortions in the behaviour of most of the system's variables, makes such an undertaking quite risky since the future course of these variables is by no means certain. Therefore, we opted to conduct our policy experiment for the year 1966.

The following two equations provide us with the necessary relationship between the chosen policy targets and instruments. They represent the two demand/supply balance equations for capital and foreign exchange. The only alteration is that investment is treated in its capacity creating role rather than in its Keynesian aggregate demand role. This means that the investment term in the capital balance equation was replaced by $\left[\sigma(GNP_t - GNP_{t-1})\right]$ where σ is the model estimated incremental capital-output ratio, and GNP represents capacity output. This step is necessary in order to obtain a positive functional relation between foreign resource inflows (G^s) and Gross National Product (GNP).

$$GNP_t = 643.596 + 0.49\ (Y)^g_t + 0.58\ (Ex^i_t) + 0.268\ (I^{t.g.f.}_t) - 0.228\ (Ex^i_t)(\alpha_{2^{mk}})_t - 131.179\ (\alpha_{2^{mk}})_t - 56.274\ (N^{os}_t) + 0.38\ (E_t) + 0.38\ (G^s_t) + 1331\ (GNP_{t-1}) \qquad (26)$$

$$GNP_t = 957.702 + Y^g_t - 7.634\ (Ex^i_t)(\alpha_{2^{mk}_t}) + 4389.481\ (\alpha_{2^{mk}_t}) + 2.985\ (Ex^i_t) + 162.190\ (\alpha L_t) - 3.664\ (I^{t.g.f.}_t) + 7.634\ (G^t_t) + 7.634\ (BIT) \qquad (27)$$

From the above equations two structural parameters are chosen from among the policy variables, i.e. αL and $\alpha_2 mk$. The former refers to the ratio of cotton area to the total cropped area and its value is determined by land allocation among the cotton and cereals crops. The latter ($\alpha_2 mk$) refers to the ratio of gross capital goods production to total industrail value-added, and is determined by investment allocation within the industrial sector among the consumer, intermediate, and capital goods. Both parameters are a function of government policies.

The main purpose for choosing these two structural parameters from among the policy variables should be obvious. During the period in question the most important factor underlying the government's cotton policy was one of a technical nature. This involved following the triennial crop-rotation system where cotton would be cultivated on any plot of land only once every three years which, in turn, means that the cotton area in any year cannot exceed one third of the total cultivated area. Nevertheless, the share of cotton area in total cultivated area had dropped below the one-third limit imposed by the crop-rotation system. This could have been the outcome of the peasant's reaction to the government's cotton price policy, regardless of restrictions on cotton area. Thus, we have chosen the parameter αL as policy instrument to provide an estimate of the gains in terms of a rise in national income, which could be derived from increasing the share of cotton in the total cropped area.

On the other hand, the choice of the parameter $\alpha_2 mk$ is equally significant. One of the structural changes in Egypt that have taken place during the period in question has been the rapid growth in investment and the change in its structure favouring industry. There was a substantial shift in the allocation of investment towards the commodity sectors. This tended to slight the pattern of investment

towards construction since this constitutes the major part of investment in services. While equipment constitutes the most important element in manufacturing investment. Accordingly, the change in the ratio of investment in these two major sectors brought about a faster demand for capital equipment. And given the negligible size of the domestic capital sector, a large part of this increased demand had to be imported. So, while demand for capital goods increased rapidly as a result of the increase in the level and pattern of investment, the growth of supply lagged behind, and thus led to the emergence of a capital goods bottleneck. Thus, we have chosen the parameter $\alpha_2 mk$ as a policy instrument with the aim of assuming alternative values for it, within a feasible range, to provide an estimate of the marginal value productivity of foreign aid.

From equation 27 we can explain the meaning of the coefficient of the αL parameter. If, hypothetically speaking, the whole of the country's crop area was allocated to cotton production, the net addition to the national product would amount to £E162 million. Also the two equations 26 and 27, provide us with two estimates of the marginal value productivity of foreign aid. According to the two-gap theory if the trade gap were dominant in Egypt, the marginal productivity of G^t would have been, $\frac{\alpha GNP_t}{\alpha G^t_t} = 7.634$.

However, we have stated earlier that the savings gap was the binding one and that the two-gaps were not independent. Given these findings, and given the fact that the two-gaps are equated ex-post, it would be warranted to assume that the actual marginal productivity of foreign aid falls between the coefficient of G^s and G^t in equations 26 and 27 and likely would be closer to the latter.

By using our earlier projections of sectoral capital stocks and GNP growth at an annual compound rate of 5.5% p.a., and assuming

alternative values for the different policy instruments within a feasible range, we used the equations 26 and 27 and solved the system in each case for the values of G^s and G^t. The results are shown in Table 2. It shows that policy mix three represents the equilibrating one. Given the values of the controlled variables corresponding to this policy package, it would lead approximately to both a closing and an equalisation of the two gaps.

CONCLUDING REMARKS

In this chapter we have used two alternative general model specifications. Model 1 was a conventional one in the Keynesian tradition and Model 2 was based on input-output specification for consumption of industrial goods and services. This approach of alternative functional specifications in a policy model such as ours endows it with the requisite flexibility. It serves as a substitute for the largeness[15] and comprehensiveness of the model and allows us to examine different aspects of the economic system. Also, in a centrally planned and developing economy like Egypt production is determined through the plan and is inelastic, both upward and downward. At the same time exports are quasi fixed while the structure of imports becomes increasingly rigid. Consequently, the role of foreign trade in bringing about sectoral commodity balances is greatly undermined, and other equilibrating mechanisms must be substituted for it. It is in this light that we deemed it imperative to incorporate sectoral supply-demand balances in the model.[16]

We have also specified capital formation and accordingly growth

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[15] Larger models suffer from the problem of error accumulation which can be quite detrimental, especially when the margin of error in the used time-series is substantial.

[16] This was achieved through the various input-output functional specifications.

TABLE 2

Impact of Alternative Values for the different Policy Instruments on Savings

and Trade Gaps

(1966)

Policy Mix No	$\frac{L^c}{L_t}$ $=\propto L$	$\frac{O^k}{V^i}$ $=\propto_2 mk$	$\frac{E^i}{V^i}$ $= ei$	Ex^i	I^v	GNP	Y^g	$\frac{Y^g}{GNP}$	BIT	N^{os}	Projected Values					
											M^t	E^t	G^t	I^t	S^t	G^s
1	0.18	0.10	0.17	95	48	2058	335	0.1627	58	2.142	374	230	86	486	388	98
2	0.20	0.15	0.20	75	34	2078	369	0.1775	58	2.142	361	257	46	472	415	57
3	0.22	0.20	0.23	55	19	2098	402	0.1916	58	2.142	345	285	2	457	444	13
4	0.24	0.25	0.28	15	0	2138	436	0.2038	58	2.142	333	333	-58	437	484	-47

Note: O^k represents the gross output of manufactured capital goods.

For the meaning of the other notations used, see Table 1

as exogenously determined. This specification provided us with more degrees of freedom in our policy analysis and design. But it is not necessary for the model. There are two alternative specifications. One would be to treat the level of investment as endogenously determined and equal to the sum of domestic production and imports of investment goods. This would be appropriate if the supply of investment goods is the limiting factor on investment. The second would be to treat investment as endogenously determined and equal to the sum of domestic savings and foreign resource inflows. In either of these two cases, the model could be used to test the impact of different assumptions regarding foreign resource inflows and investment allocation on growth.

The estimation and analysis of ex ante gaps showed that the savings gap was the dominant one over the period in question and at all assumed rates of real GNP growth. This gap was a direct outcome of two factors: the budget deficit on current account and the growth of investment above the "minimum required level". The foreign trade gap was a direct product of the food gap. The balance of invisible trade had shown a sustained surplus and contributed substantially to the reduction in the size of the trade gap.

The adjustment mechanism which brings the two gaps to equality was rather simple, since the government controls the decisions such as investment, savings, import and exports. This reduces the problem to one of government targets, policies and priorities. Of course, the degrees of freedom allowed to government decision makers are limited by internal, technical, institutional and political factors as well as by external constraints, especially foreign aid.

Given the fact that the savings gap was the larger and accordingly the dominant one, the simplest policy recommendation would be that the country should save more and consume less. To achieve

this goal, one of the instruments would be to reduce government dissaving by either raising budget revenues to the level of current expenditure through tax reforms or by reducing government expenditure to the level of its revenue or by a combination of these two policies.

If the above policies are not feasible, an alternative would be to reduce private consumption to a level that would permit private savings to be sufficiently high to finance a simultaneous rise of both public consumption and capital formation. But such policies aimed at raising aggregate savings are not likely to succeed due to population pressures and the external conflicts that the country has to face, which in turn lead to the growth of both private and public consumption. The alternative is that if Egypt is to achieve both rapid growth and an increase in savings it must increase its exports, particularly of industrial goods, and increase the share of capital goods in total industrial production.

CONCLUSIONS AND

POLICY RECOMMENDATIONS

CHAPTER 10

CONCLUSIONS AND POLICY RECOMMENDATIONS

The purpose of this study was (i) to examine and analyse Egypt's changes in the agrarian structure, the process of differentiation of the peasantry, the shifts in income distribution and consumption patterns by different socio-economic groups; (ii) to analyse the movement toward the nationalisation of the means of production and the establishment of a large public sector, as well as the more general change in the approach to economic planning (i.e. the change from a free enterprise system to a semi-planned economy composed of a public and a private sector); (iii) to assess Egypt's import substituting growth over the period 1952-1970 and to describe alternative strategies for achieving optimal long-run growth and external equilibrium.

We do not propose to enumerate all the findings reached in the course of the study since these are stated in the concluding sections of the previous chapters. Only the most important findings and the future development strategy of the country are recorded.

The 1952 Revolution had a simple but definite economic programme, and more significantly the political will and the means to carry it through. It did not involve at first the demise of private enterprise, but a greater and expanding economic role for the government. The programme included land reform; major measures to relieve the land scarcity problem; industrialisation with public investment in heavy industries (e.g. steel) which had proved unattractive to the private sector; partial planning (essentially the identification of projects for an investment programme) and a renewed emphasis on education and social welfare.

The implementation of this programme induced further intervention. In agriculture, the land reform led to the extension of government run co-operatives to most of Egyptian agriculture. The industrialisation objective led to increased tarrif protection. Exchange controls and import licensing were reintroduced, largely for balance of payments reasons but also to stem capital flight and discourage imports of luxury goods for the rich. Partial planning evolved into comprehensive planning, and the surprising element in this change is not that it took place but that it was so much delayed (the decision was taken in 1957, almost five years after the Revolution, and the First Plan only started in July 1960).

A small public sector emerged just before 1956 as a result of State investment in a few industries. It expanded by steps, with the nationalisation of the Suez Canal, the sequestration of British and French firms after the war of 1956, the nationalisation of all banks, the establishment of the Economic Organisation in 1957, and the nationalisation of Bank Misr in 1960. Significant public investment in industry undertaken under the First Industrial Plan (1957-1960) contributed to this expansion. The period 1952-1961 saw the emergence of a mixed system in which the private sector co-existed with an ever expanding public sector through which the government continually extended intervention and control.

The radical change of the economic system took place in 1961-1962 when earlier developments were completed. Successive waves of nationalisations and punitive sequestrations absorbed most of modern industry into the public sector as well as large department stores, financial institutions, building and transport firms of any significant size, and large hotels. Foreign trade was placed entirely in the hands of new public organisations. In agriculture, the government became the sole purchaser of major crops and the main

supplier, through the co-operatives, of essential inputs such as fertilisers, pesticides, and seeds. Private ownership was preserved in agriculture (within the framework and ceilings of land reform laws) and in urban real estates. Small businesses in all sectors - and, hence most of retail trade - remained in private hands. At the same time, the Socialist laws granted new privileges to workers in the organised, non-agricultural sector. An employment drive resulted in large numbers of new recruits in public administration and in public sector firms. The government committed itself to employ all university graduates and absorbed also secondary school leavers in public employment as well.

The redistributive effect of the agrarian reform was limited. The distribution of some 13% of the cultivated area to about 9% of the rural population has virtually eliminated very large ownerships, slightly improved the lot of small peasants, but consolidated the position of the midium stratum. Thus the initial inequality in the distribution of land ownership was not changed in a fundamental way. Land reform has not affected in a noticeable way the landless peasants since land distribution was mostly limited to previous tenants and small farmers.

The changes in the distribution of income among rural classes was mainly a reflection of the change in the structure of land ownership. We have seen that the absolute income received by big landowners (i.e. over 50 feddans) as well as their relative share of total agricultural income have fallen. Meanwhile, the rich and middle landowners (i.e. 5-50 feddans) benefited most as both their share of agricultural income and their income per capita have increased. Poor peasants (i.e. less than five feddans) have increased their share of agricultural income mainly due to the increase in their numbers, with their per capita incomes only marginally improved. Finally, the

number of landless peasants has decreased with a slight improvement in their share of income during the 1950s and early sixties. These trends have reversed in the late sixties.

The distribution of consumption expenditure among rural households showed that between 1953/59 and 1964/65 there was a slight fall in the overall degree of inequality of the distribution of total consumption Moreover, the flagrant initial inequalities between income groups which characterised the 1950s went unchallenged during the 1960s.

Despite the potential benefits of land and crop consolidation policies few benefits did in fact accrue when such policies were pursued by the co-operatives. This was due to the unequal distribution of land and bureaucratic domination over the experiment. Thus all the co-operatives did in this respect was to patch up some of the obvious deficiencies of the existing system of production mainly through the reorganisation of agricultural rotation. More serious was the negative effect the crop consolidation system had on small and poor peasants. They were obliged to cultivate all their land with a certain crop a year and had to depend on the open market for the satisfaction of their needs. Although the improved supply of credit and other agricultural inputs had produced favourable results as far as land productivity is concerned, this sytem favoured large landowners rather than poor and small peasants. Unequal distribution of credit and the accumulation of large arrears enabled large landowners to appropriate the greater part of co-operative finance at cheap prices.

The co-operatives were successful as an instrument of government policy. Through the manipulation of the agricultural terms of trade, it was possible to ensure the mobilisation and transfer of sizeable portions of agricultural surplus to finance the process of industrial accumulation and redress the balance of payments deficit. But the co-operative policies of marketing and pricing had negative effects

on the process of differentiation among the peasantry.

In 1952 a revolutionary government acceeded to power with an explicit and firm commitment to accelerate industrial growth. To achieve this goal it assumed full control of the great bulk of investment activity in the economy. We have seen that during the 1950s the investment ratio - that is gross fixed investment relative to GNP - was fairly constant in the range 12%-14%. However, this ratio is increased sharply in the early 1960s, reaching 20% in 1963/64. Thereafter it declined again so that during the period 1968/70 it was less than 12%.

The growth in investment during the 1960s was accompanied by an increase in imports relative to GNP. There are two reasons for this. First, the virtual absence of a capital good sector meant that the growth of investment led to a similar growth in imports of capital goods. Secondly, the rapidly rising incomes led to a rapid growth in demand for food and intermediate goods. Given the inelasticity of food supply, an increasing share of total supply had to be imported. At the same time imports of other consumer goods were held down through various highly protective import policies.

Accordingly, the growth in investment was accompanied by a growth in imports, though at a lower rate because of the import-substituting effect of the new investments. However, the rise in both the investment and import ratios in the first half of the 1960s was not matched by comparable increases in the share of exports or domestic savings, and thus led to the emergence of both a savings and a trade gap. We have seen that a relatively small balance of payment deficit equivalent to 1.1% of GNP in 1960/61 was followed by very large deficits of the order of 6% and 8% of GNP for 1961/62 and 1963/64. Egypt could not sustain such large deficits. The situation was further aggravated by new factors and events. The U.S. withdrew their aid which had contributed

to the resource gap in the mid-1960s and the Yemen war drained away valuable foreign exchange. Internally, the effects of the population explosion of the 1940s, combined with those of an expanded programme of education began to be felt. Egypt found itself in a situation in which the total resources available to the economy (domestic and foreign) had decreased while the claims of public consumption were continually increasing. The share of public consumption in GDP increased from 16.6% in 1959/60 to 21.3% in 1963/64, and 27.2% in 1969/70. Private consumption took some of the brunt but investment and merchandise imports were the main casualties.

With foreign debt reaching alarming proportions by the mid-1960s, and external finance becoming more difficult to obtain, severe curbs were imposed upon imports, food shortages occurred, and the gap between domestic demand and supply caused a rise in food prices. Given the importance of food in a low-income economy such as Egypt, it was inevitable that the rise in food prices lead to an inflationary rise in the general price level.

The curb on imports of producers goods hit industry very hard. New investments in industry had to be reduced to a minimum, and some established industries slowed down because of shortages in spare parts, raw materials and other intermediate imports. Although the curb on imports was a major factor in the decline of industrial growth it was not the only one. Poor projections of both domestic and export demand for industrial products led to substantial misallocation of investment in the industrial sector. As a consequence many industrial plants operated far below capacity.

Three major aspects of government policies towards investment exercised a strong influence on the demand, supply, and imports of capital goods. First, there was a substantial shift in the allocation of investment towards the commodity sectors during the period

1953/54-1966/67. The effect of this was to shift marginally the pattern of investment towards construction since this constitutes the major part of investment in services (while equipment constitutes the most important element in manufacturing investment). Accordingly, the observed change in the ratio of investment in these two major sectors brought about a faster demand for capital equipment. And given the negligible size of the domestic capital sector, a large part of this increased demand had to be imported.

Second, a large portion of total investment in public utilities was allocated to projects with a long gestation period such as the Aswan High Dam and related electricity projects. We have seen, for example, that during the period 1959/60-1966/67, total investment in the High Dam alone amounted to about 10% of all investments in the commodity sectors. The contribution of the High Dam investments to output will not be felt until the 1970s, and will be stretched over a fairly long period. However, given the low marginal propensity to save the income multiplier effects associated with the construction of the Dam added to the existing inflationary pressures. Furthermore, the allocation of sizeable investments to projects characterised by long gestation periods meant a rise in investment with no parallel rise in savings and, accordingly, this led to a widening of the savings gap.

Third, government investment policy within the industrial sector did not place any emphasis on the capital goods sector. After an initial (and somewhat short-lived) tendency to give more attention to the promotion of the heavy goods industries in general, the government reversed the trend. Although this change in policy orientation might have been prompted by technical and economic difficulties, such as a shortage of skilled manpower, the size of the market etc., it was also based on welfare considerations. This is made evident by the explicit statement in the "National Charter" which defined the

country's industrialisation philosophy and objectives as ones that would endeavour "to strike a human balance reconciling the requirements of production with those of consumption". The Charter goes on to say that

> "the theories which advocate that developing nations should specialise in light consumer goods as well as those which stress heavy industries would be rejected on the grounds that this would necessarily entail great deprivations on the part of the people".

It also explains that

> "the UAR industrial policy had been based until the end of the first Five-Year Plan (1959/60-1964/65) on placing relatively greater stress on consumer industries ... But in order to realise a more balanced industrial structure, the Second Five-Year Plan (1964/65-1969/70) will lay more stress on heavy industry".

The outcome of this philosophy was that, in the First Five-Year Plan, the share of the capital goods sector (especially machinery) in total industrial investment did not exceed 5%. The result of this was that, while demand for capital goods increased rapidly as a result of the increase in the level and pattern of investment, the growth of supply lagged behind, and thus led to the emergence of a capital goods bottleneck.

Two aspects of government fiscal policies were of concern to this study: one, the government budget deficit on current account with its impact on the level of aggregate savings; two, the structure of government revenue and expenditure and its potential influence on the pattern of consumption.

We have seen that a steady increase in the government expenditure occurred throughout the period under study. A number of factors led to this sharp rise in government expenditure, foremost among which were defence expenditures and the increasing welfare transfers. Moreover, underlying increasing government dissaving were inelastic tax revenues on the one hand, and rising government

expenditures on the other. Another important feature of fiscal policy in Egypt was the pattern of growth of government revenue. The only tax on agricultural income was the land tax whose revenue stagnated throughout the period. Thus, the increase in agricultural income was virtually exempt from any taxes. Moreover, income from wages and salaries up to £E250 was exempt from taxes, and for the following £E100 the tax rate was only 2%. This tax structure, in addition to the increases in welfare transfers, had reinforced the trend towards a rapid growth in demand, mainly for food.

The employment strategy had a direct bearing on the savings and trade gaps in at least two major ways. First, the policy of excess labour absorption in the industrial sector represented a form of unemployment subsidy and contributed to a rise in the cost of industrial production and a decline in the industrial profits. It thus tended to reduce the industrial sector's international competitiveness, and at the same time cut into the main source of aggregate savings, i.e. industrial profits. Secondly, the growth in government employment meant, ceteris paribus, a net contribution to aggregate demand with zero contribution to aggregate supply of commodity output. This also had an adverse effect on the balance of payments.

The Egyptian experience of agrarian reform had no doubt been more successful than many others. This was mainly due to the package of measures introduced and the government enthusiasm during the 1960s. Given the changes in the structure of land ownership, income distribution and the system of co-operatives any solution for the future should consider a radical redistribution of land and a radical restructure of the co-operative system in such a way as to replace it with real producer's co-operatives.

Within the commodity sectors the need to exert all possible efforts to increase agricultural production hardly needs emphasising.

Our study suggests some means of increasing agricultural growth other than an increase in land supply, namely, through a more intensive use of chemical fertilizers, and the installment of covered drainage facilities. Expert opinion estimated that agricultural productivity and output could be substantially increased by these means.[1] The prospect for future agricultural growth is greatly enhanced by the fact that the vast investments in the Aswan High Dam have started to come to fruition since the beginning of the 1970s.

As for the pattern of manufacturing growth, our study stresses the absolute importance of channelling the great bulk of industrial growth towards exports, and substituting for capital goods imports. To realise the latter objective is fairly easy, but a strategy for achieving the former has yet to be formulated.

The outstanding feature of Egyptian foreign trade and balance of payments was the deficit in both the balance of trade and the balance of current payments during the whole period in question, with the resulting continuous depletion of foreign exchange reserves. This development led finally to foreign exchange difficulties which became critical after 1962, with a formal depreciation of the Egyptian pound, drawings on the IMF, and some adjustments in domestic policies. Behind this development laid an almost stagnant export volume and, simultaneously, an expanding import volume. The improvement in the terms of trade and the increase in net invisible earnings (the Suez Canal) helped to meet part of the increase in imports, but even this favourable development was not sufficient to prevent a growing deficit. Up to 1958 Egypt relied almost exclusively on her supply of foreign

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[1] See: Marian Clawson, et. al., The Agricultural Potential of the Middle East, American Elsevier Publishing Co. Inc., New York, 1971.

assets to finance the growing deficits in her balance of payments. The main component of foreign assets continued to be sterling, although other foreign assets played a significant role, including those accumulated in the early postwar period when more blocked sterling was released to Egypt than was needed for current transactions. During 1959 sterling assets continued to help finance the payments deficits, although at a decreasing rate. By the year 1960 these reserves were actually exhausted, and other foreign exchange holdings continued to provide for deficit payments. By 1962 other foreign reserves were also exhausted and the burden of accommodating deficits shifted to foreign loans and grants.

Import substitution industrialisation was an import-intensive process, as in many other developing countries. Thus, although the import-substitution strategy brought about a growth in industrial production and national income, it did not solve the balance of payments problem. On the contrary, the foreign-exchange gap widened considerably and given the country's debt-servicing capacity the foreign debt reached alarming proportions. Furthermore, by the mid-1960s an inflexible pattern of sectoral interrelations began to emerge in the economy. This was due to the fact that import capacity was not only growing at an insufficient rate but had also become inflexible with regard to its commodity composition. Its slow growth resulted from the slow growth in export proceeds, while its inflexibility was due to the fact that the commodity composition of imports came to consist almost exclusively of imported inputs and foodstuffs. This situation reduced the capacity of foreign trade to play its essential balancing role in the economy.

Under these circumstances the prospects of economic development for Egypt are bleak unless the savings rate is raised in the most abrupt manner, which is not likely due to population pressures and to

the external conflicts that the country has to face, which in turn lead to the growth of both private and public consumption. The alternative is for the economy to receive more aid and to use it rationally for purposes of economic development. But once the aid is received the problem of repaying these debts on maturity is still a chronic problem that has to be solved .

A heavy burden of debt servicing may cause a deterioration in terms of trade and induce sudden and anomalous shifts in export markets and thus defeat the cause of development. Therefore, the recipient country should impose measures and disciplines in order to be able to affect repayment of debts without distorting the economic system, since such distortions would negate the benefits for which loans were contracted. The necessary measures would include giving high priority to export expanding industries, allocating investment funds in the most economic and efficient way, thereby ensuring that projects selected contributed most to national output. Policy makers should also realise that it is impossible to develop and be competitive in all fields. Therefore, it is necessary to build up a national profile of industry and concentrate all efforts on selected branches in which a comparative advantage exists. Export industries should be able to earn enough to repay foreign exchange plus interest payments, which means that these industries should be in line with international technological and economic standards.

To develop through foreign trade the country has to compete with more efficient products on world markets. A world market for primary commodities is always available; its growth is constrained by supply and, accordingly, resource endowment factors. Therefore, we concentrate here on the more difficult problem of how to promote manufacturing exports. Institutional factors and relative prices are the two main

problems here.

The practice often followed during the import-substitution stage is to allocate industrial investment on the basis of the available import substitution market, on the grounds that after exhausting this market it would later shift to export growth. This strategy must be terminated. An efficient export infrastructure must be built, one which would be capable of supplying foreign demand for industrial products. In other words new industries should be established with the primary objective of satisfying foreign demand, with domestic demand taking second priority. More attention should be given in export industries to adopting latest techniques of marketing, improving the quality of products, paying special attention to wrapping and packaging and setting high standards of efficiency and quality control.

A major negative aspect of the import-substitution strategy was its price policies. Under the strategy the allocative role of the price system was largely nullified, and consequently prices were reduced to an inferior instrument of distribution. While such an approach could be tolerated, given the inward orientation of import substitution growth, it must give way to a more rational and economically efficient price system if the country is to improve industrial productivity and significantly raise the industrial export coefficient.

We have mentioned, among other things, the substantially faster growth of industrial prices and costs of production in Egypt, as compared to the United States.

With regard to industrial labour cost, which had sharply increased during the import-substitution stage, the industrial employment and wage policies must be reconsidered with the aim of curbing the growth in labour costs. Our study suggests both implicitly and explicitly two broad policy orientations. One, growth in real wages in the

industrial sector must be tied to productivity growth, with the latter being allowed to rise at a slightly faster rate until the country improves its international competitive position. Two, the practice of forcing employment targets on the industrial sector above its minimum requirements must be ended. From the point of view of economic growth it might be more beneficial for the country to finance unemployment subsidies from budget sources rather than have them indirectly paid by the industrial sector since this raises industrial costs which then adversely affects growth via its effect on exports.

Our arguement is that if Egypt is to achieve a rapid rate of growth of industrial exports it must follow an efficient pattern of investment allocation based on rational criteria (i.e. shadow prices and the real foreign-exchange cost of both commodities and factors of production). This would raise productivity, reduce costs of production and improve the country's competitive position in external markets, and, in turn, could be expected to lead to a rise in the industrial export coefficient. Furthermore, it would gradually relieve the budget from a number of transfer payments in the form of price and export subsidies.

A rapid growth of capital formation in the commodity and social overhead sectors would greatly reduce the pressure on the government sector as the main absorber of surplus labour. This would both improve productivity in the government sector and reduce government current expenditure. At the same time rapid growth in output and income would increase tax revenue. Needless to say, maximum use of this latter factor requires a reform in the indirect and income tax structures, in order to make them more effective. The combined effect of declining expenditure and rising revenue would gradually eliminate the budget deficit on current account, and would thus remove the main component of the savings gap. The closing of this gap would eliminate

excess aggregate demand and, therefore, reduce a major source of inflationary pressure.

Tourism and the Suez Canal dues represent a good source of foreign exchange. If serious efforts were made to improve tourism and widen and deepen the Canal, Egypt could guarantee huge amounts of hard currency to repay her debts. Political conflict limits proceeds from these two important sources. If this conflict could be reduced Egypt would be able to attract tourists from all over the world. On the other hand, the importance of the Suez Canal will increase as a naval passage, tieing the East and West.

Lastly, but not least, the economic integration of developing countries may open new markets for their products and at the same time provide necessary raw materials which could be obtained in soft currencies. Some kind of payment arrangements can provide necessary guarantees to overcome the fears associated with co-operation, such as balance of payments problems, or the increase of imports over exports. In these arrangements it can be stipulated that the exports of each member to others will increase with its imports from other members. Also some kind of payments agreements to provide credit facilities designated to cover a temporary disturbance can be worked out. Resort to bilateral agreements and payment arrangements between developing countries could lead to utilisation of idle capacities in participating countries. In addition they would enable these countries to procure through mutual exchange products which could not be imported for lack of hard currency.

Different types of payment agreements have been proposed and employed, such as clearing arrangements to facilitate the prompt settlement of claims arising from commercial and financial transactions, and credit arrangements to provide short-or-medium term balance of payments finance.

Economic integration between Egypt and her Arab neighbours might be possible. On the whole trade performance between Arab countries is more favourable than between other developing countries. The existing pattern and the relative importance of this trade reflects the historical factors as well as the economic growth that has taken place in this region.

APPENDICES

APPENDIX 1: Statistical Tables.

APPENDIX 2: Indices of Terms of Trade for Agriculture.

APPENDIX 3: Impact of The High-Dam and Land Reclamation Schemes on Employment.

APPENDIX 4: Housing Conditions in Rural Areas.

APPENDIX 5: An Investigation of The Variations in Consumer Spending between Different Governorates, and of the Pattern of Income Distribution among Governorates.

APPENDIX 6: Econometric Analysis of The Structural Model Equations.

APPENDIX 7: Econometric Analysis of the Determinants of Rice Supply in Egypt.

APPENDIX 8: A Comparison of The Actual and Estimated Values of The Model's Endogenous Variables.

APPENDIX 9: Statistical Appendix

APPENDIX I

Table 1
Cultivated Areas
(Main Winter Crops)

000 feddan

Agricultural Years / Item	1952	1965	1966	1967	1968	1969	1970
Wheat	1402	1145	1291	1245	1413	1246	1304
Beans(1)	355	433	418	336	335	362	330
Barley	137	125	98	107	117	103	83
Fenugreek(1)	54	52	42	38	35	44	40
Lentil	58	89	75	66	51	45	47
Linen	13	26	22	24	36	39	21
Onion(1)	26	51	58	42	39	56	34
Lupine	11	16	11	11	11	11	10
Chick peas	15	12	8	11	10	6	7
Clover	2202	2493	2532	2716	2679	2726	2748
Garlic	9	15	19	13	12	6	7
Vegetables	63	144	147	148	172	181	174
Others	19	23	18	19	19	24	30
Total	4364	4624	4739	4776	4929	4849	4835

Note and Source: (1) The areas include the consumed green crops
Central Agency for Public Mobilization and Statistics, Statistical Handbook, June 1971

Appendix I

Table 2

Cultivated Areas
(Main Summer Crops)

000 Feddan

	1952	1965	1966	1967	1968	1969	1970
Cotton	1967	1900	1859	1626	1464	1622	1627
Rice	362	842	841	1072	1199	1187	1140
Millet	378	441	463	482	486	438	465
Maize	27	931	1053	1095	1169	1143	1153
Sugar-cane	92	129	133	137	155	170	186
Peanuts	26	54	49	41	42	49	43
Sesame	42	52	29	22	24	35	41
Vegetables	118	304	325	325	342	343	333
Others	14	44	42	57	64	63	65
Total	3026	4697	4794	4857	4945	5050	5053

Source:
See Table 1

APPENDIX I

Table 3

Cultivated Areas

(Main Nile Crops)

000 feddan

	1952	1965	1966	1967	1968	1969	1970
Rice	12	6	3	3	5	5	3
Millet	55	59	55	40	46	36	36
Maize	1677	520	522	390	385	341	351
Vegetables	71	160	162	155	182	191	199
Others	9	17	18	34	28	28	29
Total	1824	762	760	622	646	601	618

Source:

See: Table 1

APPENDIX I

Table 4

Cultivated Areas
(Main Fruit Crops)

000 feddan

	1952	1965	1966	1967	1968	1969	1970
Oranges	26	84	97	106	112	113	118
Tangerines	9	10	11	12	14	14	14
Lemons	4	9	9	9	9	9	8
Sweet Lemons	1	1	1	1	(1)	(1)	(1)
Grapes	19	21	21	22	23	27	32
Figs	2	2	2	2	8	8	7
Guavas	7	6	7	7	9	9	10
Olives	3	2	2	2	2	2	4
Mangoes	9	22	23	23	24	25	25
Pomegranates	1	2	2	2	2	2	2
Apricots	1	2	3	3	3	3	4
Plums	1	1	1	1	(1)	(1)	1
Bananas	7	8	9	9	9	9	9
Peaches	1	2	2	2	3	3	3
Pears	2	3	3	3	3	3	4
Others	1	3	2	3	4	5	3
Total	94	178	195	207	225	232	244

Note and Sources: (1) Less than 500 feddans

See: Table 1, and Central Agency for Public Mobilization and Statistics, Statistical Yearbook, October 1974

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APPENDIX I

Table 5

1. Cereals

Area in feddans 000's
Production in tons 000's
Yield in ton/feddan

Year	Total Cropped Area 000's	Wheat			Maize			Millet			Barley			Rice		
		Area	Production	Yield	Area	Production	Yield	Area	Production	Yield	Area	Production	Yield	Area	Production	Yield
Average 1950/54	9.42	1,571	1,318	0.84	1,746	1,568	0.90	438	519	1.18	122	105	0.86	519	830	1.60
Average 1955/59	10.08	1,501	1,464	0.98	1,851	1,624	0.88	451	574	1.27	136	132	0.97	654	1,385	2.12
1952	9.31	1,402	1,089	0.78	1,704	1,506	0.88	433	522	1.21	137	118	0.86	374	517	1.38
1960	10.37	1,456	1,499	1.03	1,821	1,691	0.93	454	603	1.33	148	156	1.05	706	1,486	2.10
61	9.97	1,384	1,436	1.04	1,603	1,617	1.01	457	631	1.38	121	133	1.10	537	1,142	2.13
62	10.37	1,455	1,593	1.09	1,832	2,004	1.09	454	659	1.45	131	146	1.11	830	2,038	2.46
63	10.36	1,345	1,493	1.11	1,721	1,867	1.08	484	729	1.51	121	134	1.11	959	2,219	2.31
64	10.38	1,295	1,499	1.16	1,660	1,934	1.17	494	740	1.50	121	141	1.17	962	2,036	2.12
Average 1960/64	10.29	1,387	1,504	1.08	1,727	1,823	1.06	469	672	1.43	128	142	1.11	799	1,784	2.23
1965	10.26	1,145	1,272	1.11	1,451	2,141	1.48	500	806	1.61	125	130	1.04	848	1,788	2.11
66	10.49	1,291	1,465	1.13	1,575	2,376	1.51	518	859	1.66	98	102	1.04	844	1,679	1.99
67	10.46	1,245	1,291	1.04	1,485	2,163	1.46	522	881	1.69	107	100	0.93	1,075	2,279	2.12
68	10.75	1,413	1,518	1.07	1,554	2,297	1.48	532	906	1.70	117	121	1.03	1,204	2,586	2.15
69	10.73	1,246	1,269	1.02	1,484	2,366	1.59	474	813	1.72	103	105	1.02	1,192	2,556	2.14
Average 1965/69	10.54	1,268	1,363	1.07	1,510	2,269	1.50	509	853	1.68	110	112	1.02	1,033	2,178	2.11
1970	10.75	1,304	1,516	1.16	1,504	2,393	1.59	501	874	1.74	83	83	1.00	1,143	2,604	2.28

Source:

Up to 1959: Agricultural Economics and Statistics Department
1960-1970: Central Agency for Public Mobilization and Statistics

Table 5 "continued"

2. Other Crops

Year	Cotton			Onions[1]			Sugar - cane		
	Area	Production	Yield	Area	Production	Yield	Area	Production	Yield
Average 1950/54	1,765	372	0.21	37	303	7.16	96	3,301	34.4
Average 1955/59	1,791	394	0.22	50	464	6.66	111	4,186	37.7
1952	1,967	446	0.23	32	267	7.38	92	3,260	35.4
1960	1,873	478	0.26	49	504	-	111	4,545	41.0
61	1,986	336	0.17	58	469	-	112	4,186	37.4
62	1,657	457	0.28	50	600	-	121	4,808	39.7
63	1,627	442	0.27	59	659	-	133	5,153	38.7
64	1,611	504	0.31	54	646	-	134	4,890	36.5
Average 1960/64	1,751	443	0.25	54	576	-	122	4,716	38.7
1965	1,900	521	0.27	51	670	-	129	4,739	36.7
66	1,859	455	0.24	58	701	-	133	5,189	39.0
67	1,626	437	0.27	42	587	-	137	5,257	38.4
68	1,464	437	0.30	39	444	-	155	6,083	39.2
69	1,622	541	0.33	56	567	-	170	6,878	40.5
Average 1965/69	1,694	478	0.28	49	594	-	145	5,629	38.8
1970	1,627	509	0.31	34	437	-	186	6,930	37.3

Note:

(1) Area excludes interplanted crop and is confined to winter crop as from 1960.
Crop: total but excludes green consumption as from 1960.
Average yield for winter crop.

APPENDIX 1

Table 6

Public Expenditure According to Institution(1)

1951/52 - 1967/68 £E Million

Year	Unified Budget		Ordinary Budget		Annexed Budget		Development Budget		Business or Enterprises Budget	
	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.	Est.	Act.
1951/52	-	-	231.4	232.9	4.9	4.3	-	-	-	-
52/53	-	-	206.0	208.4	4.4	4.0	0.3	0.2	-	-
/54	-	-	197.5	199.7	16.7	9.5	42.6	27.4	-	-
/55	-	-	227.9	228.1	27.5	13.4	42.3	29.1	-	-
/56	-	-	238.3	275.6	37.4	28.8	54.2	39.4	-	-
/57	-	-	280.5	308.0	14.7	13.0	45.8	38.4	-	-
/58	-	-	281.8	-	27.0	-	28.3	-	-	-
/59	71.5	-	271.5	-	122.5	-	46.0	-	-	-
/60	95.8	-	293.8	-	132.3	-	98.1	-	-	-
/61	98.1	-	301.0	-	177.0	-	285.8	-	-	-
/62	110.1	-	335.8	-	197.2	-	320.0	-	-	-
/63	-	-	471.8	-	170.1	-	-	-	821.0	-
/64	-	-	540.4	-	-	-	-	-	1000.5	-
/65	-	-	610.7	-	-	-	-	-	1165.0	-
/66	-	-	649.4	-	-	-	-	-	1210.1	
/67	-	-	625.2	-	-	-	-	-	565.1	-
1967/68	-	-	673.9	-	-	-	-	-	702.4	-

(1) Gross figures without deducting inter-budget subsidied and transfers

Sources:
A. Ministry of Treasury - Annual Budget Estimates and Final Accounts
B. National Bank of Egypt, Economic Bulletin, vol.XXII, No.3,1969
C. Central Bank of Egypt, Economic Review, vol.VIII, No.3 & 4, 1968.

APPENDIX 1

Table 7

Structure and Development of Government Expenditures, 1950/51-1969/70

(£E millions)

Sectors	1950/51 O	1950/51 D	1951/52 O	1951/52 D	1952/53 O	1952/53 D	1953/54 O	1953/54 D	1954/55 O	1954/55 D	1955/56 O	1955/56 D	1956/57 O	1956/57 D	1957/58 O	1957/58 D	1958/59 O	1958/59 D	1959/60 O	1959/60 D
Directly Productive Sectors:																				
Agriculture, Irrigation, Drainage	7.0	6.0	8.2	8.5	7.1	5.3	9.1	11.1	10.3	14.9	11.2	19.3	12.4	16.5	20.7	9.0	16.7	14.3	10.8	20.5
High Dam	–	–	–	–	–	–	–	–	–	–	–	0.5	–	0.4	–	2.8	–	2.6	–	13.2
Industry and Electricity	5.0	9.3	5.9	6.1	5.4	4.5	8.0	19.1	14.7	13.3	15.7	16.7	36.9	16.2	21.3	14.4	65.7	25.7	68.8	58.4
Transport, Comms. and Storage	17.2	5.5	20.9	9.6	21.6	6.6	22.7	8.8	23.0	11.5	25.5	13.3	26.6	17.4	26.4	15.9	35.8	16.2	34.0	19.6
Housing and Utilities	3.6	1.9	1.6	3.1	1.5	3.2	1.5	5.1	3.1	11.2	3.5	20.9	8.1	9.5	4.0	9.5	4.6	8.6	5.0	7.0
Total Productive Sectors	32.8	22.7	36.6	27.3	35.6	19.6	41.3	44.1	51.1	50.9	55.9	70.7	83.4	60.0	72.4	51.6	122.8	67.4	118.6	118.7
Social Services:																				
Education and Research	18.0	4.2	23.7	3.5	23.1	2.2	24.3	1.5	27.0	1.9	31.1	4.2	31.0	2.8	47.3	2.7	42.3	5.2	45.5	3.8
Health	6.2	1.1	6.5	0.9	6.0	0.7	6.3	0.6	7.1	1.8	7.7	3.2	8.0	1.0	7.2	0.8	8.1	1.0	8.1	0.9
Cultural Services	0.4	0.2	0.5	0.1	0.5	0.1	0.8	0.3	1.1	0.2	1.3	0.8	1.4	1.1	1.5	1.3	2.0	1.5	1.6	1.6
Religions and Social Services	36.6	0.8	41.9	0.6	48.4	0.5	47.2	0.1	49.3	0.4	50.0	0.5	53.1	–	45.1	0.9	41.6	0.7	40.7	0.8
Supply	12.4	–	18.6	–	13.7	–	8.1	–	5.2	–	6.7	–	8.2	–	2.6	–	7.3	–	8.5	–
Total Social Services	73.6	6.3	91.2	5.1	91.7	3.5	86.7	2.5	89.7	4.3	96.8	8.7	101.7	4.9	103.7	5.7	101.3	8.4	104.4	7.1
Organizing Services:																				
Presidential and Supervision	3.8	0.9	3.9	1.1	2.9	0.7	2.8	0.7	3.6	1.0	3.9	1.1	4.7	1.1	4.9	0.9	6.4	0.9	6.5	1.0
Commercial and Financial	10.1	0.7	9.8	0.5	10.1	0.7	10.3	0.2	10.5	0.4	11.1	6.0	12.3	0.4	13.8	0.3	17.9	0.3	17.9	0.3
Defence, Security and Justice	39.4	0.3	57.6	0.5	45.6	0.1	44.3	0.1	58.2	0.3	87.7	1.1	89.4	0.2	65.3	0.5	87.3	0.6	90.1	0.2
Total Organizing Services	53.3	1.9	71.3	2.1	58.0	1.5	57.4	1.0	72.3	1.7	102.7	8.2	106.4	1.7	84.0	1.7	111.6	1.8	114.5	1.5
Grand Total	159.7	30.9	199.1	34.5	185.3	24.6	185.4	47.6	213.1	56.9	255,4	87.6	291.9	66.6	260.1	59.0	335.7	77.6	337.5	127.3
	190.6		233.6		209.9		233.0		270.0		343.0		358.5		319.1		413.3		464.8	

Notes and Sources: O means Ordinary (current) expenditure. D means Development (investment) expenditure.
Ministry of Treasury, Annual Budget Estimates and Final Accounts. National Bank of Egypt, Economic Bulletin, several Issues and Central Bank of Egypt, Economic Review, several issues.

Table 7 "continued"

Sector	1960/61 O	1960/61 D	1961/62 O	1961/62 D	1962/63 O	1962/63 D	1963/64 O	1963/64 D	1964/65 O	1964/65 D	1965/66 O	1965/66 D	1966/67 O	1966/67 D	1967/68 O	1967/68 D	1968/69 O	1968/69 D	1969/70 O	1969/70 D
Agriculture	20.4	70.0	21.9	72.2	54.1	93.6	48.2	68.5	69.2	63.6	73.0	55.7	82.4	72.4	37.9	52.1	102.1	58	124	59
Irrigation-Drainage															50	15.1				
Electricity	77.8	93.1	80.7	108.6	68.8	131.7	66.6	218.1	66.6	200.2	76.9	184.0	48.4	190.1			31.8	49.4	348	37.1
High-Dam															40	43.3				
Industry															160	46.6	221.2	114.2		123.4
Transport and Communi.	34.8	46.6	35.4	56.5	48.1	33.3	53.4	25.9	56.3	44.3	78.2	34.5	84.6	46.1	3.6	22.1	134.1	35	195	48
Suez Canal	19		18		-	9.3	-	8.0	-	9.5	-	6.0	-	6.8	-	-	-	-	-	-
Housing and public Services	6.4	29.2	6.7	23.9	40.1	46.0	53.3	36.0	56.1	42.9	54.2	27.5	57.6	31.2	46.7	11.6	13.9	7.8	39.7	22.3
Total	139.4	257.9		279.2		313.9			356.5		360.5		307.7		346.6				706.7	289.8
Defence-Security-Justice	103.3		118.3		138.0		156.3		172.1		185.1		215.7		277.9		228.6	1.1	245	2.0
Education			73.8		88.6		92.0		96.2		106.4		111.9		108.9	7.2	141.3	9.3	126	9.5
Health			20.8		28.8		31.2		44.5		43.7		43.0		32.9					
Culture and Welfare			13.9		19.1		26.2		33.3		25.9		28.0				67.5	3.1	55.4	3.6
Social and Religious Affairs			12.2		13.4		17.4		20.0		19.2		22.5				27.0	1.9	17.0	3.0
Storing and supplies	196.8		19.7		47.8		53.0		57.5		54.2		53.7		91.1	34.2	204.1	7.3	269.5	8.4
Scientific research			5.1		7.5		7.9		8.3		6.1		6.7							
Organisation			15.2		13.6		15.8		17.7		27.1		23.4				324	10.3	11.3	10.2
																			50.0	
Financial and Commercial			69.4		75.8		88.6		102.0		113.5		139.6					0.2	160.1	0.5
Total	300.1		348.4		432.6		488.4		551.0		581.2		644.5						934.3	37.2
Other various projects	2.6		8.6		-		-		18.6		22.4		20.4							23.0
Grand Total	700.0		775.0		1012.4		1079.4		1184.4		1206.0		1316.2		849	232	1496	298	1641	350
															1081.0		1794.0		1991.0	

APPENDIX 1

Table 8
Non - Tax Receipts 1951/52 - 1966/67

£E Million

Year	Charges of Services (1)	Government Profit and Surplus of Public Enterprises (2)	Other Fees and Revenue (3)	Ground Total (4)	Total Public Expenditure (5)	% (4)/(5) (6)
1951/52	13.1	30.1	4.6	47.8	233.6	20.4
53	16.3	34.3	8.6	59.2	209.9	28.2
54	16.7	38.9	0.6	56.2	233.0	24.1
55	18.1	49.2	6.9	74.2	270.0	27.5
56	28.1	58.3	44.2	130.6	343.0	38.0
57	27.5	59.4	37.5	124.4	358.1	34.7
58	28.9	61.5	40.9	131.3	319.1	41.1
59	31.2	64.5	44.9	140.6	413.3	34.0
60	35.2	62.0	46.3	143.5	484.8	29.6
61	36.0	74.0	63.0	173.0	700.0	24.7
62	36.7	80.7	95.3	212.7	774.9	27.5
63	45.2	130.4	38.3	213.9	970.0	22.0
64	43.9	123.7	30.6	198.2	1079.4	18.4
65	47.1	155.3	35.6	238.0	1184.4	20.1
66	63.5	181.9	10.6	256.0	1206.0	21.2
1966/67	63.3	186.1	81.1	330.5	1316.2	25.1

Sources and Notes:

Annual Budget Reports
Central Bank of Egypt, Economic Review, Several issues.

(1) These include dues for justice, dues for education, dues collected by the Ministry of Health etc. In addition they include the fees received for powdering with pesticides and the surplus from the sale of fertilizer.

(2) These represent the investment returns from the economic activities of the State or in other words it is the revenue surplus of the Public Enterprises.

(3) These mainly the revenues from the export taxes on rice, onions, and petroleum collected through the banks and the profit from exchange control operations. It also represents the net income of the operations of the Ministry of Supply, which sells quantities of basic goods in excess of fixed rations at a profit and quantities within the rations at a loss.

APPENDIX I

Table 9

Total Government Expenditure and The Various Financing Items

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11) = 9+10
Period end of	Direct Taxes	Indirect Taxes	Non-Tax Receipts	Foreign aid received by the government	Funds from the Central Bank	Securities issued to Commercial Banks	Securities issued to the private sector	Changes in government deposits with Commercial Banks	Total	Public Investment	Total Government Expenditure
1952	48.50	94.90	47.80	10.1	54.0	1.1	3.6	0.4	234.80	25.60	260.40
53	48.90	99.20	59.20	5.8	1.4	0.0	-3.4	-0.1	204.30	6.70	211.00
54	52.00	125.15	73.20	-10.2	-6.9	0.5	8.4	-0.7	234.20	7.25	241.45
55	53.70	106.15	74.20	-0.3	47.2	0.7	3.5	-0.3	242.30	42.55	284.85
56	59.85	101.30	130.60	-6.1	60.4	11.8	20.6	-2.0	232.40	144.05	376.45
57	71.90	99.75	124.40	-0.1	33.8	0.4	-3.2	-7.3	220.00	99.65	319.65
58	78.30	109.60	131.30	-14.2	9.3	7.4	-	-9.9	228.70	83.10	311.80
59	81.95	112.75	140.60	42.0	-12.4	8.1	22.0	-6.5	280.50	108.00	388.50
60	93.80	113.40	143.50	-18.2	39.8	19.9	42.3	-12.7	306.70	120.10	426.80
61	101.40	133.85	173.00	28.8	17.8	75.8	-9.9	-22.7	347.60	150.45	498.05
62	117.15	162.55	212.70	87.1	-8.5	28.0	-65.8	28.0	447.30	113.90	561.20
63	149.10	195.75	213.90	116.5	59.6	35.1	-7.4	-8.8	470.20	283.55	753.75
64	180.90	217.30	198.20	103.1	43.7	-1.8	-7.1	-40.3	532.40	161.60	694.00
65	218.05	233.05	238.00	98.7	35.9	-28.6	-5.2	-23.0	538.30	228.60	766.90
66	255.15	204.90	256.00	61.7	0.1	-19.7	-4.2	37.2	628.20	198.95	827.15
1967	296.75	270.40	330.50	99.2	10.0	-2.7	-3.0	-6.5	712.20	282.45	994.65

Note and Source: The figures were calculated according to the identity

Total Government Expenditure = 1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 + 10

M.F. Sewelim, A Quantitative Study of Egypt's Monetary Sector, Lancaster University, Ph.D. thesis, 1972, p.240.

APPENDIX 1

Table 10

Gross National Product[1]

1. 1945-52, at Constant 1954 Prices

(£E million)

	Agriculture		Industry + Electricity		Construction		Transport + Communication		Housing		Trade + Services (incl Finance Government)				Total		Annual Rate of Growth %
	£Em	%	£Em	%	£Em	%	£Em	%	£Em	%	£Em	%	£Em	%	£Em	%	
1945	303	41	91	12	19	3	38	5	50	7	122	16	117	16	740	100	
46	302	39	92	12	22	3	43	6	51	7	142	18	121	16	773	100	4.5
47	299	38	101	13	25	3	46	6	53	7	147	18	126	16	797	100	3.1
48	328	37	113	13	31	3	61	7	56	6	169	19	133	15	891	100	1.8
49	325	35	126	13	25	3	72	8	59	6	190	20	145	15	942	100	5.7
1950	303	31	133	14	22	2	78	8	62	6	210	22	157	16	965	100	2.4
51	304	31	132	13	36	4	81	8	65	7	209	21	167	17	994	100	3.0
52	334	33	132	13	30	3	81	8	68	7	193	19	181	18	1019	100	2.5
Average 1945-52	312	35	115	13	26	3	63	7	58	7	173	19	143	16	890	100	4.1
1952-53	325	33	140	14	25	3	54	5	59	6	170	17	217	22	990	100	
53-54	315	32	143	14	27	3	55	6	56	6	161	16	232	23	989	100	-0.1
54-55	318	31	152	15	26	3	58	6	62	6	164	16	235	23	1015	100	2.6
55-56	329	31	163	15	25	3	62	6	65	6	174	16	237	23	1055	100	3.9
56-57	339	31	174	16	28	3	58	5	67	6	175	16	236	22	1077	100	2.1
57-58	355	31	190	17	33	3	62	5	68	6	193	17	240	21	1141	100	5.9
58-59	376	31	202	17	38	3	69	6	70	6	209	17	245	20	1209	100	6.0
59-60	392	31	213	17	42	3	88	7	73	6	217	17	259	20	1284	100	6.2
Average: 1952/3-59/60	344	31	172	15	31	3	63	6	65	6	183	17	238	22	1095	100	3.3

2. 1959/60-1969/70, at Constant 1959/60 Prices

1959-60	405	32	266	21	41	4	93	7	73	6	129	10	272	21	1285	100	
60-61	403	30	298	22	44	3	102	8	74	5	145	11	298	22	1364	100	6.1
61-62	373	26	326	23	74	5	117	8	76	5	152	11	294	21	1411	100	3.5
62-63	426	28	348	23	84	5	127	8	78	5	154	10	321	21	1537	100	8.9
63-64	453	27	388	23	96	6	144	9	79	5	148	9	362	22	1670	100	8.7
64-65	477	27	407	23	93	5	158	9	80	5	152	9	396	22	1762	100	5.5
Average: 1959/60-64/5	422	28	339	22	72	5	124	8	77	5	147	10	324	22	1505	100	5.4
1965/66	482	26	418	23	95	5	174	10	81	4	163	9	428	23	1841	100	4.5
66/67	473	25	421	23	89	5	180	10	84	5	172	9	446	24	1866	100	1.3
67-68	488	26	413	23	77	4	101	6	121	7	173	9	475	26	1848	100	-1.0
68-69	493	25	451	23	105	5	103	5	123	6	180	9	499	26	1954	100	5.8
69-70	525	25	485	23	114	6	114	6	126	6	190	9	535	26	2089	100	6.9
Average: 1965/66-69/70	492	25	438	23	96	5	134	7	107	6	176	9	477	25	1920	100	2.5

(1) From 1945-59/60 at market prices, and From 1959/60-69/70 at Factor Cost. Source: 1945-52: B. Hansen & D. Mead, the National Income of the UAR (Egypt), 1939-62, Institute of National Planning, Memo.355, Cairo, 1963, Table 4. 1952/53-59/60: D. Mead, Growth and Structural Change in the Egyptian Economy, Illinois 1967, Table 1-A-8, pp.288-289. 1959/60-69/70: Ministry of Planning, Follow-up and Appraisal of Economic Growth for the Years 1959to 1964/65 and 1966/67-69/70.

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APPENDIX 2

Below we discuss the price indices of the bundles of goods produced, bought and sold by the agricultural sector, as well as the weights used to construct the terms of trade indices.

(A) Agricultural Commodities:

The price series for the field crops (cotton, rice, wheat, maize, onions, and sugar cane) and for vegetables and fruits, is converted into index numbers with reference to the year 1959/60 (as a base-year).(1) The prices used are ex-farm prices. They reflect average producer's prices for all grades sold direct to cooperatives or on the free market. The weights for the agricultural sector's output is calculated on the basis of gross value of output at current prices and then adjusted in such a way as to reflect marketings for different crops.(2) The following average marketings ratios for the different crops will be assumed for each year for which the index is computed:

Cotton, 100%; rice, 66%; onions, 60%; wheat, 40%; sugar cane, 90%; maize, 30%.(3)

A distinction was made between weights used for all, poor and rich farmers. For poor farmers, we assumed that they produce only field crops and used as weights the shares in the value of output. For rich farmers, we used as weights the shares in the value of output of field crops, vegetables and fruits for large farmers (owners of 20 feddans and above) as revealed by Agricultural Census 1961. For all farmers, we used as weights the gross value of agricultural production as reported by the Ministry of Agriculture.

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(1) The chosen of the year 1960 as a base-year referred to that this year represented a turning point in a number of governmental policies concerning agricultural prices as well as the marketing of the major cash crops.

(2) One would anticipate a systematic bias due to the fact that certain crops (particularly cash crops) have greater proportions of production marketed than staple food crops. For, a set of weights base on marketings instead of gross production to be calculated. See: S.R.Lewis and S.M.Hussain, Relative Price Changes and Industrialization in Pakistan, 1951-64, Pakistan Institute of Development Economics, Monograph No.16, June 1967, p.50

(3) See next page.

Using these weights and prices the weighted aggregate price index for all agricultural output I_{as}, is then given by

$$I_{as} = \Sigma_s P^a_{st} \cdot W^a_{sto} \qquad \text{(for each year t)}$$

where:

P^a_{st} = the producer's price of the Sth crop sold by the agricultural sector (a) in the year t.

W^a_{sto} = the percentage weight of the Sth crop in the base year (and $W^a_{st_1}$ in the year 1970).

(B) Manufactured Consumer's Goods:

In order to compute a price index of manufactured consumer goods bought by farmers, it is necessary to obtain a representative bundle of manufactured consumer's goods bought by the farm population. The Family Budget Survey of 1964/65 gives data on types of goods and services purchased by farmers, and their relative importance.

Thus, a bundle of four groups of manufactured goods as reported by the Family Budget Survey of 1964/65 has been chosen to represent purchases of consumer goods. These were: sugar, tea, and coffee; edible oils and fats; soap, matches, jute, sulphuric acid, caustic soda and alcohol; and cotton and woollen textiles. Although retail prices in rural areas would be fairly representative of the prices paid by the farmers, wholesale prices have to be used in the absence of a reliable retail price series. Here we used the wholesale price indices for the period under study (1960-1970).

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(3) All these ratios represent the parts of the crop marketed both through the co-operative channels and under the system of compulsory deliveries. See M.Abdel-Fadil, Development, Income Distribution and Social Change in Rural Egypt, 1952-70, op.cit p.135.

Weights are also based on the distribution of expenditure on consumption for rural households as reported by the Family Budget Survey of 1964/65. We considered as poor families all those households in the expenditure brackets of £E 250 -⟨300, and as rich families those in the expenditure brackets of £E ⩾ 1,000. These rough indicators based on crude assessment of incomes for poor (owing less than 5 feddans) and rich (owing 20 feddans and over) farmers. See S.Radwan, "The Impact of Agrarian Reform on Rural Egypt, 1952-75", International Labour Office, Geneva, January 1977.

Given the above definitions of weights and prices, the weighted aggregate price index for manufactured consumer goods bought by the farm population, I_{mc}, is then given by

$$I_{mc} = \Sigma_c P^m_{ct} W^m_{cto} \qquad \text{(For each year t)}$$

where

P^m_{ct} = the index number of the wholesale price of the consumer good (c) bought from the manufacturing sector (m) in the year t.

W^m_{cto} = the ratio of the expenditure on the commodity (c) to total expenditure in the base-year (1964/65).

Similarly the overall index of prices of manufactured goods purchased by the farm population, ImL, is given by

$$ImL = \Sigma_L P^m_{Lt} W^m_{Lto} \qquad \text{(for each year t)}$$

where: P^m_{Lt} = the index number of the price of the good (L) bought from the manufacturing sector (m) in the year t.

W^m_{Lto} = the ratio of the expenditure on the commodity (L) to total expenditure on manufactured goods in the base-year (1964/65).

(C) Manufactured Agricultural Inputs:

Three most important non-agricultural production inputs have been chosen to represent manufactured inputs to agriculture. These were: chemical fertilisers, insecticides and fuel and lubricants. Here we used again the wholesale prices as the retail prices are not available during the period 1960-70.

Weights are based on the share of each input in the total value of manufactured inputs used in agriculture. These data are reported in Central Agency for Public Mobilisation and Statistics, Estimates of National Income for the Agricultural Sector (annual). To distinguish between weights for poor and rich farmers, we used the values of these inputs used by different land ownership classes as reported by the Agricultural Census 1961. Poor farmers were those owing five feddans and less, while the rich were defined as those owing 20 feddans and over.

Given the above definitions of prices and weights, the weighted aggregate price index for manufactured inputs used in farming operations Imb, is given by

$$Imb = \Sigma_b \; P^m_{bt} \; W^m_{bto} \qquad \text{(for each year t)}$$

where:

P^m_{bt} = the index number of the wholesale price of manufactured inputs (m) of item (b) in the year t.

W^m_{bto} = the share of input (b) in the total value of manufactured inputs used in agriculture in the base-year.

To sum up: the synthetic ratios of terms of trade for the agricultural sector for any year (t) with the base year (1960 = 100) are written as:

(1) Overall index of terms of trade between agricultural output and all manufactured goods

$$= \frac{\text{Price index of agricultural goods sold by farmers}}{\text{Overall index of prices of manufactured goods purchased by the farm population}} = I_L^t$$

where:

$$I_L^t = \frac{\Sigma_s \; P_{st}^a \; W_{sto}^a}{\Sigma_L \; P_{Lt}^m \; W_{Lto}^m} \qquad \text{(for all } t = 1961, 62, \ldots, 1970).$$

(2) The index of the terms of trade between agricultural outputs and manufactured consumer's goods

$$= \frac{\text{Price index of agricultural goods sold by farmers}}{\text{Price index of manufactured consumer goods bought by farmers}} = I_c^t$$

where:

$$I_c^t = \frac{\Sigma_s \; P_{st}^a \; W_{sto}^a}{\Sigma_c \; P_{ct}^m \; W_{cto}^m} \qquad \text{(for all } t = 1961, 62, \ldots, 1970)$$

(3) The index of the terms of trade between agricultural outputs and manufactured inputs to agriculture

$$= \frac{\text{Price index of agricultural goods sold by farmers}}{\text{Price index of manufactured inputs used in farming operations}} = I_m^t$$

where:

$$I_m^t = \frac{\Sigma_s \; P_{st}^a \; W_{sto}^a}{\Sigma_b \; P_{bt}^m \; W_{bto}^m} \qquad \text{(for all } t = 1961, 62, \ldots, 1970).$$

Table 2.1

Price Indices for Agricultural Commodities, 1960 - 1970

(1960 = 100)

Years	Cotton	Rice	Wheat	Maize	Onions	Sugar Cane	Vegetables	Fruit
1960	100	100	100	100	100	100	100	100
61	97	100	99	97	140	100	103	93
62	99	100	100	87	165	100	115	102
63	101	100	101	102	115	100	122	99
64	112	106	103	106	117	100	135	156
65	107	118	105	102	130	100	146	157
66	107	149	114	121	130	125	177	184
67	113	167	130	140	142	125	176	173
68	116	175	113	110	142	125	172	188
69	120	172	114	124	127	125	171	183
1970	121	158	135	127	157	125	194	187

Sources: For field crops: See Arab Republic of Egypt, Price Planning Agency, "Agricultural Pricing Policy in Theory and Practice", Memo No.31, Cairo, April 1974. (The price indices for field crops reflect average producer's prices for all grades sold to cooperatives or on free market).

For vegetables and fruits: See Ministry of Agriculture, Institute of Agricultural Research (quoted in I.B.R.D.) Egyptian Agriculture: Development Problems, Constraints and Alternatives, March 1976, p.31

Table 2.2

Wholesale Price Indices[1] for Principal Manufactured Commodities Consumed by the Farm Population in Egypt, and Agricultural Inputs, 1960–1970

(1960=100)

Years	Consumer goods				Agricultural Inputs		
	Sugar, Tea, and Coffee	Edible oils and fats	Soap and other Chemicals[2]	Textiles, Cotton	Chemical Fertilisers	Insecticides	Fuel and Lubricants
1960	100	100	100	100	100	100	100
61	100	97	102	98	91	118	107
62	105	99	102	103	88	400	109
63	111	102	106	108	93	368	111
64	111	97	108	110	91	361	107
65	132	101	109	124	96	316	113
66	132	122	110	124	101	268	111
67	146	137	113	124	73	235	133
68	146	140	113	132	71	207	142
69	146	139	113	132	71	208	141
1970	138	134	114	132	70	327	143

Notes and Sources:

(1) With the original base-year 1939 = 100
(2) Includes soap, matches, jute, sulphuric acid, caustic soda and alcohol.

For Manufactured Consumer Goods: See the Federation of Egyptian Industries, Yearbook 1972, p.12.

For Agricultural Inputs: See Central Agency for Public Mobilization and Statistics, Estimates of National Income for the Agricultural Sector 1965, Cairo, 1967, pp.6–9; and Estimates of National Income for the Agricultural Sector 1970, Cairo, 1972, pp.11–14.

Table 2.3

Weights for Agricultural Commodities

(%)

	Poor Farmers		Rich Farmers		All Farmers	
	1960 Weights	1970 Weights	1960 Weights	1970 Weights	1960 Weights	1970 Weights
Cotton	68.0	58.0	51.0	44.6	68.0	58.0
Rice	10.0	17.5	7.5	13.5	10.0	17.5
Wheat	8.0	8.0	6.0	6.2	8.0	8.0
Maize	8.0	9.0	6.0	6.9	8.0	9.0
Onions	2.0	1.3	1.5	1.0	2.0	1.3
Sugar Cane	4.0	6.2	3.0	4.8	4.0	6.2
Vegetables	0.0	0.0	19.0	17.0	0.0	0.0
Fruits	0.0	0.0	6.0	6.0	0.0	0.0

Sources:

As in Table 2.1

Table 2.4

Weights for Consumer goods and agricultural Inputs

(%)

Commodity Groups	Poor Farmers			Rich Farmers			All farmers		
	Consumer goods	Inputs	Overall	Consumer goods	Inputs	Overall	Consumer goods	Inputs	Overall
Sugar, tea, coffee	40.1		29.7	28.6		27.6	35.5		28.5
Edible oils	12.4		9.2	5.7		3.4	10.1		5.8
Soap, matches	9.4		7.0	8.6		6.6	8.2		6.8
Textiles	38.1		31.1	57.1		39.5	46.2		36.0
Fertilisers		68.0	15.6		58.7	13.4		62.6	14.3
Pesticides		17.4	4.0		16.9	3.9		17.0	3.9
Fuel		14.6	3.4		24.4	5.6		20.4	4.7

Sources:

For Manufactured Consumer goods: calculated from S.Radwan, The Impact of Agrarian Reform on Rural Egypt, 1952-75, I.L.O., Geneva, January 1977, p.82; and Family Budget Survey of 1964/65.

For Agricultural Inputs: Calculated from Central Agency for Public Mobilization and Statistics, National Income from Agriculture (annual) and S.Radwan, op.cit., p.82.

APPENDIX 3

Impact of the High-Dam and Land Reclamation Schemes on Employment

In 1960, work on the High-Dam started and it was estimated that the construction phase and other related projects have provided a total of 155.2 million man days of employment. It was also estimated that an additional 215.2 million man-days were provided through irrigation and drainage projects and for construction of new barrages on the Nile. After the completion of the High Dam, it was estimated that the irrigation sector, the river fleet, and the new factories could provide permanent employment for more than 400,000 labourers.(1)

Land reclamation has been another source of major temporary employment benefit. During the operation of the National Production Council (1952-1959), 79,000 feddans were reclaimed at an annual rate of 10,000 feddans of new land. Under the period 1960/61-1964/65, 536,000 feddans were reclaimed at an accelerated pace of 107,000 feddans per annum. Under the period 1965/66-1969/70, an integrated programme of horizontal agricultural expansion was proposed, proceeding at an annual rate of about 140,000 feddans of reclaimed land. Projected employment figures during the reclamation stage as well as the estimated labour requirements in the cropping stage were, on an annual average, 64,000 and 144,000 respectively.(2)

However, official statistics claim that the total area actually reclaimed during the period 1960/61-1969/70, amounted to 884,300 feddans. In other words the actual progress in land reclamation proceeded at a moderate pade of 88,000 feddans per annum, only about half the target figure for the period.(3)

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(1) See: International Labour Office, Rural Employment Problems in the U.A.R. Geneva, 1969, pp.79-80.

(2) See: Institute of National Planning/International Labour Office, Research Report on Employment Problems in Rural Areas U.A.R. (Report E on Impact of National Development Projects), 1965, pp.88-89.

(3) See: Central Agency for Public Mobilization and Statistics, Statistical Handbook, Cairo, June 1971, p.58.

Therefore, it is safe to conclude that only half of the "projected" employment figures for both the reclamation and cropping stages actually materialised. One final word, it is extremely difficult (in the absence of further evidence) to assess whether the new employment opportunities, created as a result of the implementation of the construction and reclamation schemes actually made up for the reduction in employment opportunities for casual agricultural labourers formerly employed on the expropriated estates and not benefiting from the redistribution of land.

APPENDIX 4

Housing Conditions in Rural Areas.

There is little doubt that housing conditions in rural areas represent an important and significant aspect of the problem of rural-urban disparities. Our analysis here is confined to the conditions prevailing in the dwellings of the farmers "fellahin", without concerning ourselves with the houses of the notables and rich peasants.

Rural families in Egypt usually build their dwellings themselves as part of their off-seasonal activities. The staple building material of the typical "fellah" house is a mixture of the Nile valley soil, chopped straw from the "fellah's" standard crops, and Nile water. This may be smeared on both sides of a framework of maize stalks, palm leaves or reeds, to make the mud walls of the poorest type of house. But more often it is poured into wooden moulds to make raw bricks which are dried in the sun and then used for building.(1)

The space provided by a typical "fellah" house, representing 74.3% of the total stock of rural dwellings, does not usually exceed an average on hundred square metres. This dwelling (floors, walls, roof) by its very squatness is part of the earth. The trunks of palm trees are used for roof beams and in most instances the doorways of the "fellah" house contains no door; the loophole windows may have neither glass nor woodwork.

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(1) H.H.Ayrout, The Egyptian Peasant, Boston: Beacon Press, 1963, pp.115-116.

To assess the quality of "rural housing", we have used data on the construction material of the houses.

Table 4.1 shows the proportion of houses according to material predominant in the floor, walls and roof in rural areas. It shows that 95% of the total rural population lives in houses with an earth floor. It also shows that red brick or lime-stone rubble is a far superior building material for walls compared with the mud bricks used in the construction of 88% of rural dwellings, since it keeps out dampness from the soil which undermines the walls.

TABLE 4.1

Proportion of Houses According to Material Predominant in the Floor, Walls and Roof in Rural Areas

	% of houses
1. Floor material	
Earth	95
Other	5
2. Wall's material	
Red brick and other	12
Mud brick	88
3. Roof material	
Concrete or timber	11.7
Palm leaves or reeds	88.3

Source: M.Abdel-Raouf, On The Reconstruction of the Egyptian Village, Socialist Studies, Vol.3, No.7, July 1974, p.23 (in Arabic)

APPENDIX 5

An investigation of the variations in Consumer Spending between Different Governorates, and of The Pattern of Income Distribution among Governorates

(A) The Consumption Function:

Consumer demand will increase or decrease with a fall or rise in the proportion of income that is saved. This question was given particular attention in the economic thinking which followed the great Depression of the 1930's. J.Keynes proposed an answer according to which consumption depends mainly on disposable income. We can base our reasoning on the assumption that there is a function $C = F(Y^d)$, which relates per capita consumption C and per capita disposable income Y^d. This consumption function also determines consumer saving which by definition is the unspent part of disposable income, i.e. $S = Y^d - C$; where S is per capita saving.

Keynes, also, indicates that "f" should be an increasing function, but should be such that the ratio C/Y_d decreases as Y^d increases. In other words, the portion of income saved should be greater when income is higher.

Our source of information is the"Second Report of the Ministry of Planning"(1), which provides cross section data about consumption per head and disposable income per head in each governorate. The sample used consists of 22 observations. The first twenty-one observations relate to consumption and disposable income per head in the big urban centres and in the governorates of Upper and Lower Egypt. The last observation represents the average per capita consumption and disposable income in the governorates of the borders(i.e. the Red Sea, the New Valley, Matruh and Sinai). Finally, each observation consists of the

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(1) Ministry of Planning, The Basic Features of Regional Growth in the Arab Republic of Egypt, (December 1968, Des. 1969),Cairo.

average consumption expenditures and disposable income in current prices over the three years 1964/65 to 1966/67. The year 1967/68 was disregarded because it was felt that the War might have affected the relation between consumption and income.(2)

The first and simplest model adopted was:

$$C_i = b + c\, Y_i^d + \varepsilon_i \qquad (1)$$

according to which consumption per head C_i in governorate i depends on disposable income per head (Y_i^d) in the same governorate, and on a set of other individually unidentifiable factors represented by the unobservable random variable ε_i. b and c are the parameter coefficients whose values are to be determined. The estimated relationships were as follows:

$$C_i = \underset{(0.126)}{2.963} + \underset{(0.00356)}{0.925}\, Y_i^d \qquad R^2 = 0.996$$

which seemed all the more satisfactory since R^2, the square of the correlation coefficient was 0.996. However the value 0.925 for the marginal propensity to consume seems too high, and might be explained by the definitions of disposable income and savings adopted by "The Second Report", where the sums withheld by the government to allow for pensions and social security are considered as public savings rather than personal compulsory savings.(3)

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(2) For more details about the data used, see: Table 5.1

(3) To have an idea of the order of magnitude of the sums which we believe are part of personal savings and which are not considered as such by the definition adopted by "The Second Report", we may refer to the Report of the Ministry of Planning, "Follow-Up and Evaluation of Economic Growth in the United Arab Republic in 1966/67", August 1968. This report shows in Table (2), p.157 the sums available to each sector through savings. Savings through social security amount over the period 1964/65 to 1966/67 to £E 349.7 million, of these £E 15.3 million are half day's pay compulsory saving and should be added to personal savings; in addition 50% of the rest (i.e. £E 162.2 million) could also safely be added to personal savings, which would make a total of £E 177.5 million. This sum alone exceeds the amount of personal savings mentioned by "The Second Report", namely £E 141.6 million over the period 1964/65 to 1966/67. This clearly points to the fact that the estimated propensity to save would considerably increase if the definition of personal savings is modified.

Model(equation) (1) assumes that the marginal propensity to consume is constant rather than decreasing as income increases. A different specification of the consumption function was tested to accord with the view that C/Y^d decreases as disposable income per head increases, namely:

$$\frac{C_i}{Y_i^d} = c + d\, Y_i^d + \varepsilon_i \qquad (2)$$

which implies a consumption function of the second degree in Y_i^d; c and d are the parameters to be estimated; and ε_i is the random error term.

The least-squares estimates of model (2) were as follows:

$$\frac{C_i}{Y_i^d} = 0.981 - 0.000414\, Y_i^d \qquad R^2 = 0.0658$$
$$(0.00399) \quad (0.000349)$$

Although the coefficient of Y_i^d in model (2) has the expected negative sign, it is insignificant. Therefore, the available Egyptian regional data do not support the hypothesis of a decreasing marginal propensity to consume, at least within the range of observed disposable income per head. We may therefore safely assume that consumption is linearly related to disposable income.

The next problem to investigate is the effect of urbanization on consumption. Does a change in the degree of urbanization shift the consumption function? Does this change affect the intercept term in the consumption function, or does it affect the marginal propensity to consume?

One way to deal with this problem is to fit one consumption relation for urban governorates and another relation for non-urban governorates and compare the estimates.

A more efficient procedure for evaluating the effect of urbanization on consumption would be to introduce the degree of urbanization as an explanatory variable, this variable being measured by the percentage of urban to total population in each governorate.

A third procedure would be to introduce a dummy variable to account for the degree of urbanization; this dummy variable takes on the value 1 for urban governorates and the value 0 for non-urban areas.(4)

The last two procedures were preferred as being more efficient than the first.

The second procedure consists in fitting to the data the following relation

$$C_i = b + c Y_i^d + d U_i + \varepsilon_i \qquad (3)$$

Where C_i, Y_i^d are as previously defined and U_i is an index of the degree of urbanization in governorate i. It represents the percentage of urban population over the three years 1964/65 to 1966/67 to total population over the same period. The results obtained were:

$$C_i = \underset{(1.331)}{3.179} + \underset{(0.1014)}{0.914}\, Y_i^d + \underset{(0.0424)}{0.0024}\, U_i \qquad R^2 = 0.990$$

which reveals a highly insignificant coefficient for the degree of urbanization, although the coefficient of disposable income is still satisfactory, and R^2 is quite high. The imprecision attaching to the estimate of the coefficient of U could be explained by the fact that this index is correlated to disposable income per head, the simple correlation coefficient between them being 0.767. The existence of multi-collinearity makes the estimates of the separate effects of Y^d and U on C meaningless. The high significance attaching to the coefficient of Y^d in this relation is due to the definitions of disposable income, consumption and savings which make consumption extremely large compared to savings.

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(4) See Table 5.1

The alternative procedure is to use a dummy variable which takes on the value one for urban governorates and the value 0 for non-urban governorates. The number 1 was attached to the observations corresponding to the governorates of Cairo, Alexandria, Port-Said, Suez, Ismailia and the borders (Red Sea, New Valley, Matruh & Sinai) where more than 50% of the population is urban. Zero was attached to all other governorates where less than 50% of the population lives in urban areas. The estimates obtained were:

$$C_i = 3.640 + 0.911\ Y_i^d - 0.618\ D_i \qquad R^2 = 0.966$$
$$\quad (2.533)\ (0.0530)\quad (1.612)$$

Where D_i is the value of the dummy variable in governorate i. This approach did not improve the estimate of the coefficient of the degree of urbanization.

Therefore, we may conclude that the data show no evidence that the consumption relation shifts due to the degree of urbanization. In other words, the available data do not support the hypothesis that the intercept term in the consumption function is affected by the degree of urbanization.

An alternative hypothesis to be tested is that the degree of urbanization affects the consumption relation through changing the marginal propensity to consume. The model adopted for this purpose is:

$$C_i = b + c\ Y_i^d + dX_i + \varepsilon_i \qquad (4)$$

where $X_i = D_i\ Y_i^d$; D_i being the dummy variable defined above.

This relation gave the following least squares estimates:

$$C_i = 3.958 + 0.895\ Y_i^d + 0.0160\ X_i \qquad R^2 = 0.999$$
$$\quad (0.548)\ (0.0120)\quad (0.0052)$$

The T-test applied to the individual coefficients shows that they are significant at the 99% confidence level.

These estimates show that the marginal propensity to consume in urban governorates, 0.911 is significantly higher than the marginal propensity to consume in rural governorates 0.895. This divergence could be explained by a stronger demonstration effect and more varied needs in urban areas as compared to rural areas.

We may therefore conclude that consumption per head is reasonably well defined as a linear function of per capita disposable income, that consumption appears to be higher in urban governorates than it is in rural governorates (and consequently saving is lower) due to a higher propensity to consume, and that autonomous consumption, i.e. the intercept term in the consumption function, does not seem to be affected by the degree of urbanization. Finally, Egypt's regional data provide no evidence of decreasing marginal propensity to consume as income increases.

(B) The Pattern of Income Distribution Among Governorates:

We shall try, in this section, to investigate the pattern of income distribution among governorates and the changes in this distribution that occurred between 1964/65 and 1967/68.

Ranking different governorates according to the level of personal income per head,(5) it appears that the higher personal income governorates are the big urban centres: Cairo, Alexandria, Suez, and Port-Said. They are followed by Asswan, which owes its privileged position to the construction of the High-Dam and tourism; then by Ismailia and Gharbia(6) which have a relatively high urban population (over 30%).

(5) For a complete ranking of the governorates according to the level of per capita personal income, see Table 5.2.

(6) Ismaillia owes its high per capita income to the activity of the Suez Canal; while Gharbia owes it mainly to the flourishing textile industries of Mehalla-El-Kubra.

Next come the governorates which are situated near Cairo, have a high proportion of their inhabitants employed there. Quliubia, Giza; the rural governorates come next and fianlly the governorates of the borders.(7)

Changes in this ranking over the period considered are minor. The only noticeable change is the big relative advance of the governorate of the Red Sea, where personal income per head increased from £E 35.2 in 1964/65 to £E 52.2 in 1966/67, i.e. increased by 48.3% compared with an average increase in personal income per head of 7%(8) over the same period.

The next question to examine was whether regional inequality in income distribution has changed during the period under consideration. For this purpose, we drew Lorenz curves for the years 1964/65, 1966/67, and 1967/68 relying on the "Second Report of the Ministry of Planning" which contains information about the relative distribution of population and of personal income among governorates.(9) Using these figures, Table 1 summarizes the results of our computation of cumulative frequency distribution of population and personal income over the period 1964/65-1967/68.(10)

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7. These governorates are mostly desert and their population is either nomad or else agglomerated in small urban centres.
8. Ministry of Planning, The Second Report, op.cit. Table 4, p.26. It is worth noting that this big increase in personal income per head seems to be inconsistent with the figures mentioned in Table 3, p.5 and Table 3, p.23 of 'The same Second Report, which show a constant percentage share of the governorate of the Red Sea in total population and in total personal income over this period. But this could be explained by the fact that total personal income in this area was so small that even its doubling would not affect much its proportion to total overall income.
9. Ministry of Planning, The Second Report , op.cit.,Table 3, p.5. and Table 5, p.23.
10. For the details of these computations, See: Tables 5.3, 5.4; and 5.5.

TABLE 1

Cumulative Frequency Distribution of Population and Personal Income, Over the period 1964/65 - 1967/68

Population (%)	Personal Income (%)		
	1964/65	1966/67	1967/68
Lowest 10%	7.3	7.3	6.8
" 20%	15.0	15.0	14.4
" 25%	18.9	18.8	18.3
" 30%	22.9	22.8	22.2
" 40%	31.0	30.8	30.3
" 50%	39.4	39.2	38.6
" 60%	47.9	47.8	47.2
" 70%	56.8	56.9	56.2
" 75%	61.5	61.5	60.9
" 80%	67.1	67.4	66.6
" 90%	83.1	83.5	83.3
" 100%	100.0	100.0	100.0

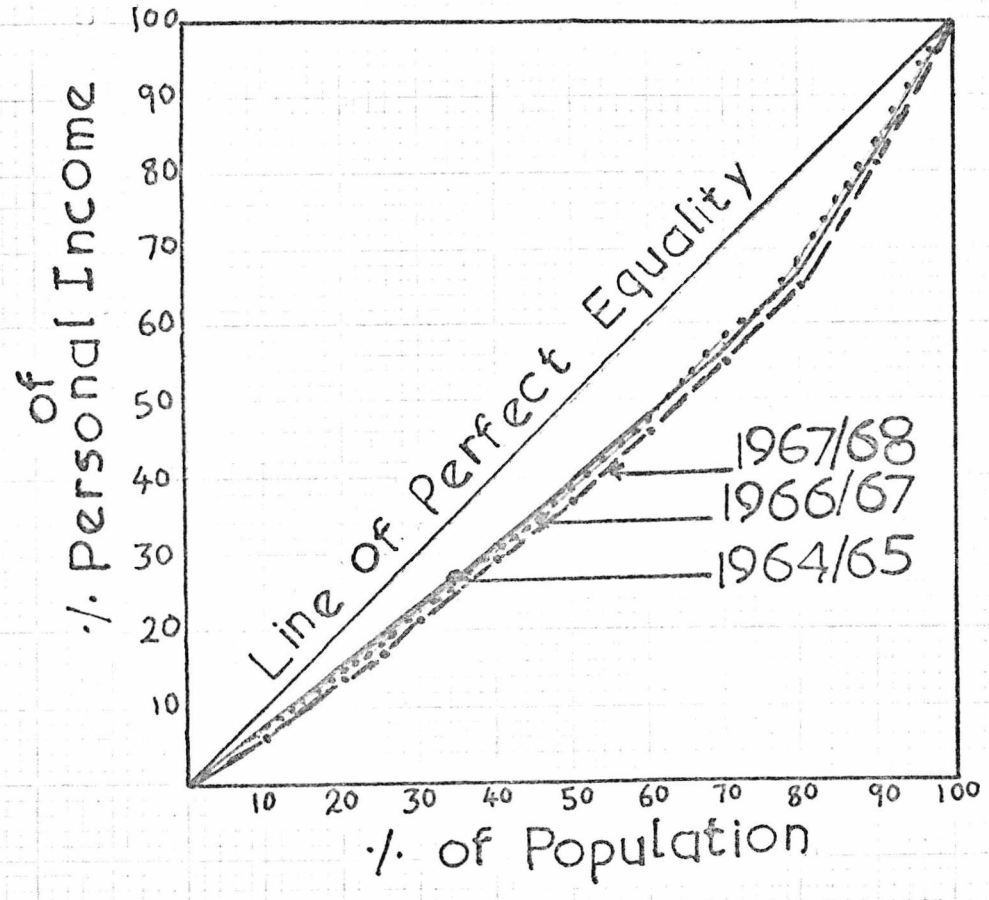
Source:

Computed from Tables 5.3, 5.4, and 5.5

Figure 1

Lorenz Comparison for Distribution of Income

(1964/65 - 1967/68)



The table shows that income distribution between different governorates has not changed much between the years 1964/65 and 1966/67, but in 1967/68 it became more unequal. Comparing 1967/68 with 1964/65, it appears that inequality increased in the lower income governorates but narrowed in the higher income governorates, namely, Alexandria and Cairo.

This can also be observed from an inspection of the Lorenz curves. Inspection of these curves shows that the curves for 1964/65 and 1966/67 are very close to each other. They coincide for the lower income regions but that for the earlier year lies above that for the later year for the middle income governorates. For the higher income areas the curves interesect. Comparing the lorenz curves for 1966/67 and 1967/68, it appears that the former lies above the latter, reflecting a tendency towards greater inequality of income distribution. The same applies to the curves for 1964/65 and 1967/68, with the difference that these curves intersect towards their right-hand end, reflecting greater equality of income distribution between the higher income regions.

However, these curves do not show whether income distribution between different governorates has tended to increase or to decrease. Concentration ratios were therefore calculated to determine the degree of inequality of income distribution. The formula used for this ratio is:(11)

$$I = 10^{-4} \sum_{r=2}^{12} (P_r - 1\ Y_r - P_r\ Yr - 1)$$

where I refers to the concentration ratio to be estimated;

P_r is the cumulative frequency of population;
Y_r is the cumulative frequency of personal income;
r refers to the percentile.

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(11) Ynetema, Dwight B., Measures of Inequality in the Personal Distribution of Wealth and Income, Journal of the American Statistical Association, Vol.28, December 1933, pp.423-33; and also see Chapter 1, Section 1.4 B.

This ratio varies within the range 0 to 1, according to the degree of inequality of distribution. It takes on the value zero in the case of perfect equality of distribution, and one when there is absolute inequality.

The estimated ratios for 1964/65, 1966/67, and 1967/68 were 0.158, 0.158, and 0.169 respectively. These values point to a relatively small degree of inequality of income distribution between different governorates. In addition, one may infer that there was no tendency for the degree of inequality of distribution to change between 1964/65 and 1966/67 and that, it has tended to increase in 1967/68, although the change is minor.

These findings are somewhat surprising and they conflict with the current observation of the concentration of economic activities in a few big urban centres, particularly Cairo and Alexandria. It is true that the pattern of urbanization in developing countries is such that there appear slums in the big cities where the way and standard of living are not different from those in rural underdeveloped areas, and this could partly justify the low estimated values of the concentration ratios, but we still think that these findings are very surprising, which leads us to question the reliability of the data used.

TABLE 5.1

Data Used for the Estimation of the Consumption Function

Governorates	Observation No.i	C_i (2)	Y_i^d (3)	C_i/Y_i^d (4)	U_i (5)	D_i (6)	X_i (7)
Urban Governorates:							
Cairo	1	80.7	85.4	0.944	100.0	1	85.4
Alexandria	2	76.7	81.0	0.947	100.0	1	81.0
Port-Said	3	70.6	72.6	0.971	100.0	1	72.6
Suez	4	75.5	76.4	0.985	100.0	1	76.4
Lower Egypt:							
Damietta	5	46.1	47.2	0.975	26.4	0	0.0
Dakahlia	6	43.7	44.6	0.980	20.6	0	0.0
Sharkia	7	45.6	46.4	0.983	18.3	0	0.0
Qualiubia	8	49.3	49.8	0.990	31.2	0	0.0
Kafr-El-Sheikh	9	41.6	42.3	0.983	18.8	0	0.0
Gharbia	10	47.6	48.3	0.980	31.6	0	0.0
Menufia	11	45.1	46.9	0.990	16.2	0	0.0
Behera	12	42.1	42.9	0.981	17.9	0	0.0
Ismailia	13	50.5	50.9	0.994	52.8	1	50.9
Upper Egypt:							
Giza	14	46.7	49.5	0.945	38.9	0	0.0
Beni-Suef	15	48.2	48.9	0.985	22.0	0	0.0
Fayum	16	45.6	46.2	0.988	21.4	0	0.0
Menia	17	47.0	47.5	0.985	19.8	0	0.0
Assiut	18	41.6	42.5	0.978	23.6	0	0.0
Sohag	19	41.5	42.0	0.989	20.2	0	0.0
Kena	20	43.2	43.6	0.991	18.9	0	0.0
Asswan	21	52.3	53.2	0.985	34.7	0	0.0
The Borders (1)	22	34.5	34.6	0.992	100.0	1	34.6

Notes: (1) The figures relating to this observation represent averages for the four governorates of the borders, namely: the Red Sea, the New Valley, Matruh and Sinai.
(2) Each number of this column C_i represents the average consumption per head in governorate i over the period 1964/65-1966/67 in current £E. This Column was computed using the information in Table 10 , p.68, of "The Second Report of the Ministry of Planning", op.cit.
(3) Each number of this column Y_I^d represents the average per capita disposable income in governorate i over the period 1964/65-1966/67 in current £E. These numbers were derived from Table 4 , p.39 of "The Second Report...", op.cit.
(4) Each number of this column is the ratio of the corresponding two numbers in the third and fourth columns.
(5) Each number of the column U_i represents the percentage of urban population to total population in governorate i over the period 1964/65-1966/67. The figures are based on the information in Table 1 , p.2, and Table 4 , p.7 of "The Second Report...", op.cit.
(6) D_i is a dummy variable which takes on the value 1 for the governorates where more than 50% of the population is considered as urban and the value 0 for all other governorates.
(7) X_i is a dummy variable which is equal to the product of the corresponding D_i by Y_i^d.

TABLE 5.2

Ranking of Governorates Ascending According To The level of Per Capita Personal Income in the Years 1964/65, 1966/67, 1967/68.

Rank	Governorates		
	1964/65	1966/67	1967/68
1	Sinai	Sinai	Sinai
2	Matruh	Matruh	Matruh
3	Red Sea	New Valley	New Valley
4	New Valley	Sohag	Sohag
5	Sohag	Kafr-El-Sheikh	Assuit
6	Kafr-El-Sheikh	Assiut	Kafr-El-Sheikh
7	Assiut	Behera	Kena
8	Kena	Kena	Behera
9	Behera	Dakahlia	Dakahlia
10	Dakahlia	Fayum	Red Sea
11	Fayum	Sharkia	Fayum
12	Sharkia	Menufia	Sharkia
13	Menufia	Menia	Menufia
14	Menia	Damietta	Menia
15	Damietta	Beni-Suef	Damietta
16	Beni-Suef	Red Sea	Beni-Suef
17	Gharbia	Gharbia	Gharbia
18	Giza	Giza	Giza
19	Qualiubia	Ismailia	Ismailia
20	Ismailia	Quliubia	Quliubia
21	Asswan	Asswan	Asswan
22	Port-Said	Port-Said	Port-Said
23	Suez	Suez	Suez
24	Alexandria	Alexandria	Alexandria
25	Cairo	Cairo	Cairo

Source:

Computed from: Ministry of Planning, Economic and Social Survey of the Governorates: Basic Features of Growth in the Governorates in the Period 1964/65-1967/68, Second Report, December 1969, Table 4, p.26 (in Arabic).

TABLE 5.3

Cumulative Frequency Distribution of
Population and Personal Income in 1964/65

Governorates	Cumulative Frequency %	
	Population	Personal Income
Sinai	0.5	0.3
Matruh	0.9	0.5
Red Sea	1.0	0.6
New Valley	1.2	0.7
Sohag	6.9	5.0
Kafr-El-Sheikh	10.6	7.8
Assiut	15.4	11.4
Kena	20.4	15.3
Behera	27.1	20.4
Dakahlia	34.6	26.5
Fayum	37.7	29.1
Sharkia	44.7	34.9
Menufia	49.6	39.1
Menia	55.4	44.0
Damietta	56.9	45.2
Beni Suef	60.0	47.9
Gharbia	66.4	53.5
Giza	71.8	58.5
Qaliubia	75.8	62.3
Ismailia	76.9	63.4
Asswan	78.6	65.1
Port-Said	79.5	66.4
Suez	80.4	67.7
Alexandria	86.3	77.0
Cairo	100.0	100.0

Source and Notes:

Computed from: Ministry of Planning, "Second Report", Table 3, p.5 and Table 3, p.23.

This table reveals inconsistencies in the data of the Second Report; to take an examples of such inconsistencies

TABLE 5.4

Cumulative Frequency Distribution of Population and Personal Income in 1966/67.

Governorates	Cumulative Frequency%	
	Population	Personal Income
Sinai	0.5	0.3
Matruh	0.9	0.6
New Valley	1.1	0.7
Sohag	6.7	4.8
Kafr-El-Sheikh	10.4	7.6
Assiut	15.1	11.1
Behera	21.6	16.2
Kena	26.5	20.0
Dakahlia	34.1	26.0
Fayum	37.2	28.5
Sharkia	44.2	34.3
Menufia	49.0	38.4
Menia	54.6	43.1
Damietta	56.0	44.3
Beni-Suef	59.1	47.0
Red Sea	59.2	47.1
Gharbia	65.5	52.7
Giza	71.0	57.8
Ismailia	72.2	58.9
Qaliubia	76.3	62.7
Asswan	78.0	64.5
Port-Said	78.9	65.8
Suez	79.8	67.1
Alexandria	85.8	76.6
Cairo	100.0	100.0

Source:

Computed From: Ministry of Planning, The Second Report, Table 3, p.5 and Table 3, p.23

personal income per head in the governorates of the borders is shown by Table 4, p.26 of the Second Report to be:

Sinai	£E 34.6
Matruh	£E 34.9
Red Sea	£E 35.2
New Valley	£E 36.6

The percentage shares of these governorates of population and personal income are given by Table 3, p.5 and Table 3, p.23 as:

Governorates	% Share	
	Population	Personal Income
Sinai	0.5	0.3
Matruh	0.4	0.2
Red Sea	0.1	0.1
New Valley	0.2	0.1

From these figures we would expect personal income per head to be the same in Matruh and the New Valley and to be lower in Sinai and lower still in the Red Sea. However, the Report does not confirm this.

TABLE 5.5

Cumulative Frequency Distribution of Population and Personal Income in 1967/68.

Governorates	Cumulative Frequency %	
	Population	Personal Income
Sinai	0.5	-
Matruh	0.9	0.2
New Valley	1.1	0.3
Sohag	6.6	4.3
Assiut	11.2	7.7
Kafr-El-Sheikh	14.9	10.5
Kena	19.7	14.2
Behera	26.3	19.3
Dakahlia	33.9	25.3
Red Sea	34.0	25.4
Fay um	37.1	27.9
Sharkia	44.1	33.6
Menufia	48.8	37.6
Menia	54.4	42.3
Damietta	55.8	43.5
Beni-Suef	58.8	46.1
Gharbia	65.1	51.7
Giza	70.7	56.9
Ismailia	71.9	58.0
Qaliubia	76.0	61.8
Asswan	77.8	63.6
Port-Said	78.7	64.9
Suez	79.6	66.2
Alexandria	85.6	75.9
Cairo	100.0	100.0

Source: Computed from: Ministry of Planning, "The Second Report", Table 3, p.5 and Table 3, p.23.

APPENDIX 6
Econometric Analysis
of the
STRUCTURAL MODEL EQUATIONS

On the basis of the discussion mentioned of chapter 7, the estimated functions are:

(I) Production Functions
(a) Agriculture sector

No. of Equation

(1)

$$\text{CORC: } V_t^c = \underset{(16.386)}{-8.322} + \underset{(11.261)}{47.283}(L)_t^c + \underset{(0.762)}{1.008}\left(\frac{K_{t-1}^a}{L_t}\right) + \underset{(4.4)}{3.436}(F)_t^c - \underset{(11.938)}{116.764}(D)^{v.c.}$$

$$R^2 = 0.948$$
$$d = 2.189$$

No.of Equation

(2)

$$\text{OLS: } V_t^f = \underset{(73.414)}{-76.534} + \underset{(9.701)}{28.804}(L)_t^f + \underset{(1.714)}{2.116}\left(\frac{K_{t-1}^a}{L_t}\right) + \underset{(2.062)}{4.148}(F)_t^f$$

$$R^2 = 0.955$$
$$d = 1.852$$

(Figures in brackets are the standard errors of the estimated coefficients)

Some discussion of the economic significance of the estimated parameters is necessary.

First, while the marginal return to a unit of land allocated to cotton was £E 47.283, its alternative allocation (i.e. to foodstuffs production) earned only £E 28.804. This result is in conformity with other available estimates of the relative average gross returns to cotton and food crops.(1)

This large discrepancy between net returns to land in its alternative allocations suggests that substantial income gains would be derived by shifting land from food stuffs to cotton production in which the country enjoys a comparative advantage. There have been conflicting arguments as to why policymakers refrained from taking such action.

It has been argued, along lines similar to those of the optimum tariff argument, that Egypt might profit from restricting the cotton area.(2) This is, of course, assuming that the foreign demand for Egyptian cotton is inelastic.

Although such reasoning might have occasionally underlay cotton policies in the past, the motive behind recent policies was clearly different. Cotton exports have been faced with rising competition from other producers of long-staple cotton. Improved textile technology and the surge in production of cheap synthetic fibres have reduced the country's ability to manipulate cotton prices in world markets. As a matter of fact, the most important factor underlying the government's cotton policy was one of a technical nature. This involved following the triennial crop-rotation system where cotton would be cultivated on any plot of land only once every three years which, in turn, means that the cotton area in any year cannot exceed one-third of the total cultivated

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(1) The average gross returns to land allocated to cotton and cereals during the period 1955-1959 was estimated, by B.Hansen and G.Marzouk, at £E 63 for the former and £E 29 for the latter. However, the rise in the share of rice (which is the most profitable of the cereal group) in cereals output and the increasing severity of the damage caused to the cotton crop by the cotton worm must have led to a rise in the value added productivity of cereals relative to cotton. See: Development and Economic Policy in the UAR (Egypt), op.cit., p.56, Table 3.4

(2) See: B.Hansen, Cotton Versus Grain on the Optimum Allocation of Agricultural Land, Institute of National Planning, Memo.No.275, Cairo, April 1963.

area. Past experience indicates clearly that such crop rotation is, ceteris paribus, most beneficial for land productivity, given the exhaustive effect of cotton production on land fertility. A recent study points out that "even in 1950/52 when there was no governmental restraint on cotton growing, and when cotton prices were abnormally high due in large part to the Korean War, cotton acreage hardly exceeded two million acres (total cultivated area was 6.3 million acres"(3).

Nevertheless, it must be pointed out that the share of cotton area in total cultivated area had dropped below the one-third limit imposed by the crop-rotation system. This could have been the outcome of the peasant's reaction to the government's cotton price policy, regardless of restrictions on cotton area.

Secondly, the size of the capital coefficients in irrigation and drainage and chemical fertilizers indicates their importance as policy instruments for promoting agricultural growth. The size of the fertilizer coefficient is surprising given the intensity of fertilizer application and the high levels of land productivity already realized.

Finally, it must be mentioned that the high correlation between the capital and fertilizer series created a problem of multicollinearity which affected the values of the estimated parameters for these variables and their variances.(4) If one of these two explanatory variables in either of the two equations is dropped, the retained variable assumes a higher value and a lower variance. However, it was not felt necessary to eliminate either of them on the ground that both had an important impact on agricultural output, and their inclusion would improve our

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(3) Marion Clawson, et al., The Agricultural Potential of the Middle East, American Elsevier Publishing Co., Inc., New York, 1971, p.70.

(4) This high correlation between the capital and fertilizer series is rather coincidental since there is no functional relationship between them.

forecasts. Also, both variables are expected to expand at relatively the same pace in the forecast period and, accordingly, the level of correlation between them will be maintained. That is, the covariance of their parameters is expected to remain fairly stable.(5)

(b) Industrial Sector

No.of equation

(3)

$$\text{CORC:} \quad V_t^i = 73.272 + 0.54\ (K_{t-1}^i) - Ex_t^i$$
$$(3.408) \quad (0.003)$$

$$R^2 = 0.99$$
$$d = 2.198$$

The capital coefficient indicates a net marginal capital/capacity output ratio of 2.2. This concurs well with an engineering estimate for manufacturing.(6)

It is worth mentioning that for the stability of the capital coefficient over the immediate period under study, several factors must be taken into account. One, substitution between capital and labour is not likely to exert any significant influence on the size of the capital coefficient. Two, changes in commodity composition will likely be in the direction of more capital-intensive sectors, such as the capital goods and the intermediate goods sector catering for them.(7) However, since this last change will probably be offset by a trend in the opposite direction - resulting from the coming to fruition of investments in electricity projects with a long gestation period - it would not be unjustifiable to assume that the estimated coefficient of capital will be stable in the near future.

(5) For a more discussion of this type of problem from an econometric viewpoint, See: Charles R.Frank, Jr., Statistics and Econometrics, Holt, Rinehart and Winston, Inc., New York, 1971, pp.294-298; Carl F.Christ, Econometric Models and Methods, John Willey and Sons, Inc., New York, 1966, pp.386-390; Also R.S.Pindyck, and D.L. Rubinfeld, Econometric Models and Economic Forecasts, McGraw-Hill Book Company, New York, 1976.

(6) and (7) see next page.

(c) Services Sector

No.of equation

(4)

CORC: $(V)_t^{soh} = -7.137 + 0.162\ (K)_{t-1}^{soh}$
(16.454) (0.011)

$R^2 = 0.99$
$d = 1.902$

No.of equation

(5)

CORC: $(V)_t^{os} = -51.765 + 0.61\ (K)_{t-1}^{os} + 157.447\ (N)_t^{os} - 98.751\ (D)^{vos}$
(95.088) (0.359) (114.618) (32.982)

$R^2 = 0.984$
$d = 1.789$

First, the capital coefficient for "social overhead" services pertains to a capital-output ratio of 6.1, which is below the engineering estimates for these sectors. However, this could be explained in terms of the declining marginal capital coefficient during the period under study, a phenomenon whose policy implication was explained earlier.

Secondly, the capital coefficient in the "other services" sector pertains to a capital-output ratio of 1.6, which is slightly higher than the engineering estimate.(8)

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(6) It must be pointed out that the engineering estimate is for actual and not capacity output. See: Ministry of Planning, Follow-up and Evaluation Report on the First Five Year Plan , op.cit.,p.96. It is quite possible that the much higher capital-output ratios in electricity and mining more than offset the low ratio for construction.

(7) To estimate the change in the capital coefficient due to such a factor through the use of the input-output table would require information about the change in commodity composition by sector.

(8) Perhaps due to the capital-intensive nature of defence expenditure whose share in total government expenditures increased over the period in question.

Thirdly, the labour coefficient is large in size and statistically more significant than for other services. Finally, it must be mentioned that while the weighted marginal capital-output ratio for all services over the period under study is over two, the investment accelerator coefficient is only 0.279, as may be seen from the following equation:

$$I_s^t = \underset{(7.87)}{99.684} + \underset{(0.20)}{0.279}\ (\Delta V_s)^t$$

where:

I_s = real total gross fixed investment in services.

V_s = total real services value added.

This would seem to indicate that if during the period in question trends in capital demand and supply in the services sector as a whole continue, it would lead to a substantial capital shallowing in that sector which, in turn, would lead to the creation of capacity bottlenecks.

(II) CONSUMPTION FUNCTIONS

(a) Household Consumption

No. of Equation

(6)

$$\text{OLS:}\quad C_t^f = \underset{(46.33)}{-210.312} + \underset{(1.81)}{3.949}\ (Y)_t^{P.P.c.} + \underset{(4.17)}{18.118}\ (POP)_t - \underset{(0.65)}{0.462}\ (tot)_t^i$$

$$R^2 = 0.965$$
$$d = 1.829$$

No.of Equation

(7)

$$\text{OLS:}\quad C_t^{i+s} = \underset{(67.63)}{-771.229} + \underset{(2.64)}{13.861}\ (Y)_t^{P.P.c.} + \underset{(6.08)}{19.281}\ (POP)_t + \underset{(0.96)}{2.176}\ (tot)_t^i$$

$$R^2 = 0.987$$
$$d = 1.453$$

The values and signs of the estimated parameters are in conformity with both a priori theory and cross-section statistical evidence:

(a) the (average) income elasticities of foodstuffs and non-food consumption are 0.48 and 1.05 respectively. On the one hand, they fulfill one's expectations on the basis of Engel's Law which asserts that household expenditures on food grow at a lower rate than income, and vice versa for non-foodstuffs expenditures. On the other, they agree with the estimates obtained from family budget studies for 1958 and 1964/1965.(9)

(b) the sign of the internal terms of trade coefficient is negative for foodstuffs, and positive for non-foodstuffs consumption. This shows that a rise in foodstuff prices relative to industrial goods prices would have a negative effect on the consumption of commodities other than foodstuffs.

(c) the average price elasticity of foodstuffs consumption is quite low (0.143), which is to be expected given both the country's low income per capita and the composition of foodstuffs consumption, which consists mainly of cereals.

Finally, it must be added that with regard to the income elasticity of demand for foodstuffs, family budget studies suggest a positive correlation between it and the general income level at low-income brackets. Specifically, it shows that for urban low-income brackets (below £E 200 per household), the income elasticity of demand for foodstuffs is only 0.49. As we move to higher income brackets (£E 200-600) the income elasticity increased to 0.71; then it declines steadily as we go up the income ladder.(10)

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(9) See: chapter 6
(10) Ibid.

(b) Government Consumption

No. of equation

(8)

CORC: $C_t^g = -49.473 + 0.223\ (GNP)_t$
$\qquad\qquad (43.48)\quad (0.02)$

$R^2 = 0.948$
$d = 1.651$

The following two functions (one for total household consumption, the other for total consumption of both household and government) are given primarily for purposes of comparison:

$$C_t^h = \underset{(55.36)}{39.538} + \underset{(0.04)}{0.784}\ (Y)_t^P$$

$R^2 = 0.984$
$d = 1.661$

$$C_t^t = 2.689 + 0.871\ (GNP)_t$$
$\qquad (18.06)\quad (0.01)$

$R^2 = 0.998$
$d = 1.902$

Thus, one can say that the income (GNP) elasticity of government consumption is 1.18; while that for household is 0.95; and the weighted average of the two is one. These figures point to the impact of the rapid growth in government consumption on the level of aggregate consumption and savings. As may be seen from the household and total consumption equations, while the marginal propensity to save out of private income is (1-0.78 = 0.22), private and government marginal propensity to save is only (1-0.87 = 0.13).

(C) Consumption of Industrial Goods

No. of equation

(9)

$$\text{I/O: } C_t^i = \frac{(1+\beta_t^i)}{(1+\alpha^i)_t}(V)_t^i + \frac{1}{(1+\alpha_t^i)}\left[M_t^i + T_t^{ii} + \Delta St_t^i\right] - I_t^i - E_t^i$$

$$= \alpha_1 ci(V)_t^i + \alpha_2 ci\,(M_t^i + T_t^{ii} + \Delta St_t^i) - I_t^i - E_t^i$$

The estimate of (α ci) for the period under study is fairly stable with only a slight delcine around a mean value of 1.25. This is understandable in the light of the fact that there had not been any major structural changes in the industrial sector over the period in question.

As stated earlier, $(\alpha_1 ci)_t = \frac{(1+\beta_t^i)}{(1+\alpha_t^i)}$, and accordingly its size varies with relative changes in α_{1t}^i (i.e. the ratio of intermediate sales of the products of sector i, to final demand for it, at any time period), and α_{2t}^i (i.e. the ratio of intermediate purchases by sector i, to value addedin that sector, at time t). In the course of industrial growth one would expect α_2^i to decline as a result of a gradual shift in the structure of industry from processing of raw materials (with its low value added) to more complex industrial processes. At the same time, one would expect α_1^i to rise as industrial sectors become more interdependent: that is, in the course of industrial growth industries with forward-linkage would increase their share in total industrial output relative to those with high backward linkage. Consequently, the trend of the coefficient (α_i ci) would be negative.

(d) Consumption of Services

No. of equation

(10)

$$\text{I/O: } C_t^s = \frac{(1 + \beta_t^s)}{(1 + \alpha_t^s)} (V)_t^s + \frac{1}{(1 + \alpha_t^s)} (T)_t^{is}$$

$$= \alpha_1 cs\ (V)_t^s + \alpha_2 cs\ (T)_t^{is}$$

Our estimate for (α cs) indicates a rise in its size from 0.9 at the beginning of the period under study to 0.95 at the end of 1960's. This can be explained by the rise in the share of intermediate purchases to total value added especially in government services.

(III) EXPORT FUNCTIONS

(a) Cotton Export

No. of equation

(11)

$$\text{I/O: } E_t^c = \frac{(1 + \beta_t^c)}{(1 + \alpha_t^c)} (V)_t^c + \frac{1}{(1 + \alpha_t^c)} (T_t^{ic} - \Delta ST_t^c)$$

$$= \alpha_1 ec\ (V)_t^c + \alpha_2 ec\ (T_t^{ic} - \Delta St_t^c)$$

Our estimate of the coefficient ($\alpha_1 ec$) for the period in question show that its value ranged from 1 to 0.79, indicating a steady temporal decline. This is understandable in the light of the fact that while both the numerator and denominator of the parameter increased steadily during the period under study, the ratio of intermediate purchases of raw cotton to exports increased at a substantially faster rate than the ratio of intermediate inputs to value added.

(b) Industrial Export

No.of equation

(12)

$$\text{OLS:} \quad E_t^i = \underset{(7.154)}{9.122} + \underset{(0.044)}{0.121}(V)_t^i + \underset{(1.026)}{1.099}\ (t) + \underset{(3.481)}{15.947}\ (D)^{ei}$$

No.of equation

(12)'

$$\text{OLS:} \quad E_t^i = \underset{(49.03)}{63.666} + \underset{(0.01)}{0.161}\ (V)_t^i - \underset{(0.40)}{0.664}\ \left(\frac{P^d/P^{U.S.}}{R}\right) + \underset{(3.40)}{11.634}\ (D)^{ei}$$

$$R^2 = 0.99$$

$$d = 1.934$$

As would be expected on a priori grounds, the sign of the price term is negative. As for the size of the output coefficient, it points to an average output elasticity of exports of 1.1.

(IV) IMPORT FUNCTIONS

(a) Foodstuffs Imports

No. of equation

(13)

$$\text{I/O:} \quad M_t^f = C_t^f + E_t^f - \frac{(1 + \beta_t^f)(V)_t^f}{(1 + \alpha_t^f)}$$

$$= C_t^f + E_t^f - \alpha_1 mf\ (V)_t^f$$

(b) Intermediate Goods Imports

No.of equation

(14)

$$\text{CORC:} \quad M_t^i = \underset{(10.85)}{-\ 24.054} + \underset{(0.02)}{0.390}\ (V)_t^i - \underset{(8.9)}{40.922}\ (D)_t^{mi}$$

$$R^2 = 0.971$$

$$d = 1.689$$

It is worth nothing that the coefficient of the industrial value added variable corresponds to an import elasticity of 1.2.

(c) Capital Goods Imports

No.of equation

(15)

$$\text{I/O:} \quad M_t^k = \frac{(1+\beta_t^k)}{(1+\alpha_t^k)} (I)^{t.g.f.} - \left(\frac{1}{1+\alpha_t^k}\right)(V)_t^i - (T)_t^{ik}$$

$$= \alpha_1 mk\,(I)^{t.g.f.} - \alpha_2 mk\,(V)_t^i - (T)_t^{ik}$$

The estimates of parameters ($\alpha_1 mk$) and ($\alpha_2 mk$) indicate a slight temporal rising trend over the period in question; ($\alpha_1 mk$) increased from 0.35 in the early 1950's to an average 0.45 in the 1960's as a result of the change in allocation of investment favouring industry with a high capital content. The size of ($\alpha_2 mk$) increased from 8% to 10% in the 1950's to 10% to 13% in the 1960's.

No. of equation

(15')

$$\text{OLS:} \quad M_t^k = \underset{(6.16)}{6.646} + \underset{(0.03)}{0.266}\,(I)_t^{t.g.f.} + \underset{(0.08)}{0.176}\,(BOP)_t$$

$$R^2 = 0.904$$

$$d = 1.758$$

It is worth noting that the investment coefficient corresponds to an average import elasticity of 1.1.

Finally, in our econometric estimation of the import functions of both intermediate and capital goods, we have included a price term in the form of commodity group terms of trade, adjusted for changes in the official price of foreign exchange. The results were negative:

generally the price coefficient did not have the right sign and was statistically insignificant. Although this might have been prompted by the poor quality of price indices, it partially reflects our above analysis.

(V) SAVING FUNCTIONS

(A) Government Savings

(i) Government net income

Equation No.

(16) CORC: $Y_t^g = -10.233 + 0.163\ (GNP)_t$
(17.76) (0.01)

$R^2 = 0.937$

$d = 1.916$

(ii) Government consumption (of goods and services)

(17) CORC: $C_t^g = -49.473 + 0.223\ (GNP)_t$
(43.48) (0.02)

$R^2 = 0.948$

$d = 1.651$

(B) Private Savings

(18) CORC: $S_t^p = -141.747 + 5.832\ \left(\frac{Y^p}{POP}\right)_t + 0.529\ (S)_t^i - 59.84_{(D)}^{sp}$
(107.09) (3.49) (0.36) (25.18)

$R^2 = 0.927$

$d = 1.277$

The size of the parameters of equations (16), (17), and (18) conforms well to the picture we have drawn earlier with regard to the growth and structure of savings, and the factors influencing it.(11) The extent

(11) The factors influencing the government's saving behaviour were the growth of military expenditures, and government employment on the expenditure side, and the inelasticity of tax structure on the receipts side, See: Chap.5.

of government dissaving could be deduced from that while the average G.N.P. elasticity of government consumption was 1.14, the corresponding figure for government income was only 0.97.

INDIRECT TAXES

Equation No.

(19) $$T_t^i = t_o + t_1 (GDP)_t + e_t$$
$$= \alpha_1 ti (GDP)_t$$

LABOUR (in Agriculture; Industry; Social Overhead Services; and Total Employed Labour)

(20) $$N_t^a = N_o^a + \lambda 1 (1 + n_1)^t \Delta L_t^a$$

(21) $$N_t^i = N_o^i + \lambda 2 (1 + n_2)^t \Delta K_t^i$$

(22) $$N_t^{SOh} = N_o^{soh} + \lambda 3 (1 + n_3)^t \Delta k_t^{soh}$$

(23) $$N_t^{te} = N_o + \lambda^n (1 + n)^t \Delta POP_t - U_e$$

where:-

n1, n2, and n3 represent average annual rate of growth of labour in agriculture, industry, and social overhead services respectively.

λ1, λ2, and λ3 represent average value productivities of labour in the above three sectors respectively.

Definitions, Identities and Equilibrium Conditions

Equation No.

(24) $N_t^{oS} = N_t^{te} - (N_t^a + N_t^i + N_t^{soh})$

(25) $L_t = L_{t-1} + \beta L\ (I)_{t-1}^{L.W.}$

(26) $L_t^c = \alpha L(L_t)$

(27) $L_t^f = (1 - \alpha L)\ L_t$

(28) $V_t^a = V_t^c + V_t^f$

(29) $V_t^s = V_t^{soh} + V_t^{oS}$

(30) $V_t^{ic} = Ex_t^i + V_t^i$

(31) $(GDP)_t = V_t^a + V_t^i + V_t^s$

(32) $(GNP)_t = (1 + \alpha t_i)\ GDP_t - B.F.P.$

(33) $Y_t^p = (GNP)_t - (Y)_t^g$

(34) $C_t = C_t^f + C_t^i + C_t^s$

(35) $C_t = C_t^f + C_t^{h(i+s)} + C_t^g$

(36) $S_t^g = Y_t^g - C_t^g$

(37) $S_t = S_t^g + S_t^p$

(38) $S_t = 1 - C_t$

(39) $E_t = E_t^c + E_t^i + E_t^f$

(40) $M_t = M_t^c + M_t^f + M_t^i + M_t^k$

(41) $I_t = I_t^a + I_t^{L.W.} + I_t^i + I_t^{Soh} + I_t^{os} + I_t^v$

(42) $I_t^{t.g.f.} = I_t - I_t^v$

(43) $G_t^s = I_t - S_t$

(44) $G_t^t = M_t - (E_t + BIT)$

(45) $Ex_t^i = f\left(\Delta \frac{E^i}{V^i}\right)_t \ ; \ f < o$

Model Reduced Form
(for selected aggregate variables)

(1) $(GNP)_t = V_t^a + V_t^i + V_t^s + T^i$

$= (-70.53) + (47.283)\ \alpha L + 28.804\ (1 - \alpha L)\ L_t$

$+ 3.124\left(\frac{K^a_{t-1}}{L}\right) + (3.436)\ F^c_t + (4.148) F^f_t + (0.54) K^i_{t-1}$

$+ (0.162) K^{Soh}_{t-1} + (0.61)\ K^{os}_{t-1} + (157.447) N^{os}_t - Ex^i$

$+ T^i - (116.764)\ D^{v.c.} - (98.751)\ D^{vos}$

(2) $C_t = C^f_t + C^i_t + C^s_t$

$= (-210.055) - (58.902)\ \alpha_1 cs + (73.272)\alpha_1 ci + (4.595)\ \alpha_2 ci$
$-73.272(\alpha_2 mK)(\alpha_2 ci) + 3.949\left(\frac{GNP_t}{POP_t}\right) - (3.949)\ \frac{Y^p_t}{POP_t}$

$+ 18.118\ (POP_t) - (0.462)\ tot^i + [0.162(\alpha_1 cs)]\ K^{soh}_{t-1}$

$+ [0.61(\alpha_1 cs)] K^{os}_{t-1} + [157.447(\alpha_1 cs)]\ N^{os}_t + [0.45(\alpha_1 ci)]$
$+ 0.176\ (\alpha_2 ci) + 0.45(\alpha_2 mK)(\alpha_2 ci) + 0.54(K^i_{t-1}) + [-(\alpha_1 ci)$
$- 0.390(\alpha_2 ci) - \alpha_2 mk)(\alpha_2 ci) + 0.121]\ Ex^i_t - [(\alpha_1 mk)(\alpha_2 ci) + 1]\ I^{t.g.f.}_t$

$+ (\alpha_2 ci) M^c + (\alpha_2 ci)(-T^{ik} + T^{ii} + \Delta ST^i) - (1.099)t$

$- [98.751(\alpha_1 cs)]\ D^{vos} - [40.922(\alpha_2 ci)]\ D^{mi} - (15.948) D^{ei}$

(3) $S_t = S^p_t + S^g_t$

$= -141.747 + (5.832)\ \frac{GNP}{POP} - (5.832)\ \frac{Y^P}{POP} + (0.529)\ S^i$
$+ S^g - 59.847\ (D^{SP})$

$$(4)\quad E_t = E^c + E^i + E^f$$

$$= \left[-0.257 - 8.332\,(\alpha_1 ec)\right] + \left[47.283(\alpha_1 ec)(\alpha L)\right] L_t$$

$$+ \left[1.008(\alpha_1 ec)\right] \frac{K^a_{t-1}}{L} + \left[3.436(\alpha_1 ec)\right] F^c_t + \left[\alpha_2 ec\right]\left[T^{ic} - \Delta ST^c\right]$$

$$+ (0.054)K^i_{t-1} + (1.099)t + E^f - (116.764)D^{v.c.} + (15.947)\,D^{ei}$$

$$(5)\quad M = M^c + M^f + M^i + M^K$$

$$= \left[-205.717 - 73.272(\alpha_2 mk) + 76.534(\alpha_1 mf)\right] + \left[(\alpha_2 mk) - 0.391\right] Ex^i_t$$

$$- (40.922)\,D^{mi}_t - T^{ik}_t + M^c_t + (18.118)POP_t - (0.462)\,tot^i$$

$$+ E^f_t - \left[28.804(\alpha_1 mf)(1 - \alpha L)\right] L_t - \left[4.148\,(\alpha_1 mf)\right] F^f_t$$

$$+ \left[0.176 - 0.45\,(\alpha_2 mk)\right] K^i_{t-1} + (\alpha_1 mk)\, I^{t.g.f.} + 3.949\,\frac{GNP}{POP}$$

$$- (3.949)\,\frac{Y^g}{POP} - \left[2.116\,(\alpha_1 mf)\right] \frac{K^a_{t-1}}{L}$$

APPENDIX 7

Econometric Analysis of the Determinants of Rice Supply in Egypt.

The basic objective here is to investigate the major determinants of rice supply in the Egyptian agriculture. As a minor objective, the elasticity of supply will be estimated in order to measure the response of rice producers to changing the farm prices of rice.

I. Materials and Methods:-

(A) The Model:

In the context of supply analysis, which is of interest in the present research, two equations may be expressed as follows:

$$Q_t^s = f(P_t) \qquad (1)$$

$$P_t = h(Q^s) \qquad (2)$$

where:

Q_t^s = quantity supplied at time t ; and

P_t = market price at time t.

This means that the quantity supplied at time (t) is some function of price at time (t), and simultanteously the price at time (t) is some function of the quantity supplied at time (t).

Here, we have two equations in two unknowns and a simultaneous solution is necessary. However, if the value of either Q_t^s or P_t is determined outside the system represented by equations 1 and 2, then one of the equations can be eliminated and we will be left with a single equation model. For example, if P_t were determined outside the system

then equation 2 would no longer be relevant because market price at time (t) would no longer be a function of the quantity supplied at time (t). This would reduce the system to only equation 1.

The relevance of this argument to the analysis here derives from the fact that prices of rice in Egypt, at both farm and retail market level are established by the Government. This means that market price is determined outside the system expressed by equations 1 and 2 (i.e. price is exogenous to the system), and therefore the system reduces to a single equation model expressing quantity supplied at time (t) as some function of market price at time (t).

It must be noticed that the above argument does not imply that the government agency ignores the anticipated supply at time(t)when establishing P_t;or tha the price-quantity relation which existed at time (t) is not considered when determining the price for time (t+1). However, it does imply that P_t is exogenous to the system (1) and (2) and that the use of a single equation model is estimating the supply relationship for rice in Egypt is justified.

The model to be used here is

$$Q_t^s = F\ (P_t \quad , \quad X_{ti}) \qquad (i=1,2,\ldots,n.) \qquad (3)$$

where Q_t^s and P_t are defined as above;

X_{ti} relates to other variables which affect Q_t^s that will be considered in this analysis. These variables include:

(1) The price of the resources used in production of rice which will be reflected in costs of production per feddan (C_f). Shifts in (C_f) cause a change in the location of the supply curve but do not change the nature of the curve.(1)

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(1) See: Ahmad M.El-Feel, Rules and Techniques of Agricultural Marketing, Dar-El-Matboat El-Gededa, Alexandria, 1970. (In Arabic)

(2) Prices of competing farm enterprises which include in this case the price of cotton (P_c), and the price of corn (P_n). A shift in the prices of competing products affects also the location of the supply curve for rice but does not change the nature of the curve.

However, prices for the period (t-1)were used instead of the prices in period (t) because the farmer usually makes his production decisions for the period (t) on the basis of the prices prevailing in the period (t-1) which he assumes will continue at the same level in period (t).(2)

The full model is:

$$Q_t^s = F\left[P_{t-1} , C_f , \left(\frac{Pr}{Pc}\right)_{t-1} , \left(\frac{Pr}{Pn}\right)_{t-1} \right] \qquad (4)$$

where:

Q_t^s is as defined before;

P_{t-1} refers to the farm price in period (t-1);

C_f refers to rice costs of production per feddan;

$\left(\frac{P_r}{P_c}\right)_{t-1}$ refers to the price ratio between rice and cotton in period (t-1)(3)

$\left(\frac{P_r}{P_n}\right)_{t-1}$ refers to the price ratio between rice and corn in period (t-1)

However, agricultural production (especially in developing countries) is affected to a great extent by biological and weather conditions, the availability of enough irrigation water, etc. This implies that the relation between production and farm prices in some years may turn out to be negative because of changes in these biological and physiological conditions. Thus better results can be obtained when the crop acreage (A_t) is used as the dependent variable in model (4).(4)

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(2) E.O.Heady, Economics of Agricultural Production and Resource Use, Prentice-Hall, New York, 1962.

(3) G.M.Kuznets, "Statistics Pertaining to the Acreage of Sugar Beets in California 1922-1942", Calif.Agric.Exp.Sta.Bulletin, Berkeley, California 1943

(4) B.Singh, "Rice Economic Analysis", Ministry of Agriculture, Cairo, 1959.

Thus, the model that will finally be considered is:

$$A_t = F\left[P_{t-1} \ , \ C_f \ , \left(\frac{Pr}{Pc}\right)_{t-1} , \left(\frac{Pr}{Pn}\right)_{t-1} \right] \qquad (5)$$

(B) The Estimation Procedure:

The single equation statistical model shown in (4) and (5) will be estimated by multiple regression analysis using the method of ordinary least squares.(5)

The dependent variable used in the present analysis is the acreage of rice in the period 1952/53 - 70/71. The source used is the periodical publication: "Agricultural Economics" prepared by the Department of Agricultural Economics, in the Ministry of Agriculture, Egypt, 1972.

For the independent or explanatory variables, data are taken from the same source in addition to the "Economic Bulletins" prepared by the Economic Research Department in the National Bank of Egypt and Central Bank of Egypt, 1971.

II. Results and Discussions:-

(A) The Basic Equations:

In this section estimates are obtained by expressing all variables in both natural numbers and in logs to the base 10. The price and cost data are also used in both monetary and real terms. This yields the following equations:

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(5) See: Robert S.Pindyck and Daniel L. Rubinfeld, Econometric Models and Economic Forecasts, McGraw-Hill Book Company, New York, 1976, Chapter 3, p.54.

$$Y_{\text{natural numbers}} = a + b_1 X_1 + b_2 X_2 + b_3 X_3 + b_4 X_4 \quad (6)$$

$$Y_{\text{natural numbers}} = a + b_1 X_1^r + b_2 X_2^r + b_3 X_3 + b_4 X_4 \quad (7)$$

$$Y \text{ logs to base } 10 = aX_1^{b1} X_2^{b2} X_3^{b3} X^{b4}_4 \quad (8)$$

$$Y \text{ logs to base } 10 = a (X_1^r)^{b1} (X_2^r)^{b2} (X)^{b3}_3 (X)^{b4}_4 \quad (9)$$

where:

Y represents the national acreage of rice in a certain year;

X_1 represents the average farm price of rice in a certain year;

X_1^r the index number of farm price of rice in a certain year (1952/53 = 100);

X_2 costs of farm production per feddan of rice;

X_2^r the index number of farm cost of production per feddan (1952/53 = 100);

X_3 relative price of rice to cotton in year(t -1);

X_4 relative price of rice to corn in year (t -1).

(All variables in equations 6 and 7 are expressed in natural numbers; whereas equations 8 and 9 are expressed in logarithmsto the base 10.

(B) Multicollinearity:

Table 7.1 shows the correlation matrix of the explanatory variables. An examination of this table shows that there tends to be a high degree of multicollinearity in the data. The lowest simple correlation coefficient between the explanatory variables is greater than 0.50, and the highest is greater than 0.90. In the framework of the t-test, this high degree of multicollinearity will make the standard errors of the estimated coefficients too high, resulting too frequently in the acceptance of the hypothesis that the estimated coefficients do not differ significantly from zero. Thus, a rather piecemeal approach will be used. Each explanatory variable will be used in a separate regression with the dependent variable, by expressing all the variables in both natural numbers and in logs to the base 10.

Tables 7.2 and 7.3 show the results of using the above procedure. Comparison of the two tables shows that the results of the linear forms (when all variables are expressed in natural numbers) are so inferior relative to those obtained from the log linear forms. Therefore, the following discussion will mainly relate to the results in Table 7.3

(C) Discussion of the Results:

First, the price coefficient is significantly different from zero, which is favourable to the hypothesis that farm price in period (t-1) affects significantly rice acreage in period (t). Better results were obtained when farm prices were expressed in monetary terms rather than in index terms (with farm prices in 1952/53=100). The sign of the price variable is positive which is favourable to the hypothesis. The t - test reveals that this is a very strong variable, in that the estimated coefficient is more than 5 times larger than its standard error.

The overall fit of the equation is generally quite high, as shown by the coefficient of determination which has the value 0.623. This, also, imples that the farm price variable in period (t-1) explains 62.3% of the variations in the acreage of rice in period (t).

The elasticity of supply with respect to farm price in year (t-1), amounts to 1.174, which implies that 10% change in the farm price of rice in year (t-1), will lead to a change in the acreage of rice in the same direction in year (t) by 11.74%. (This result is significant at 99% level).

The cost per feddan variable has a different sign to that expected. The sign of the cost variable turns out to be positive, which is unfavourable to the hypothesis that the lower the cost of production per acre in period (t-1) the larger will be the acreage in period (t). This result may be due to the large expansion in rice acreage after the 1962/63 season when sufficient irrigation water (one of the strongest determining factors of rice production) became available from the High Dam. In the same period, production costs per feddan increased from about £E 30 to about £E 50 and the acreage of rice increased from 830,000 feddans to about 1.2 million feddans (See: Table 7.4). Further, the cost of irrigation water is not included in the costs of production per feddan, and since huge amounts of water are consumed this means that published costs understate the actual costs of rice production.

The relative price variable for rice and cotton is favourable to the hypothesis that rice acreage increases when the relative price for rice and cotton increases. The coefficient is 2.7 times larger than its standard error, indicating a significant relationship at the 99% level. The results also indicate that the relative price for rice and cotton explains about 30% of the variation in the rice acreage in the

period under study. It is also worth noting that the elasticity of supply with respect to the relative price for rice and cotton amounts to 1.05, which implies that 10% increase in the relative price for rice to cotton in period (t-1) leads to a 10.5% increase in rice acreage in period (t).

The coefficient of the relative price of rice to corn is not significantly different from zero, which is unfavourable to the hypothesis that corn competes with rice for land resources on the farm. However, the sign of this variable is positive which is in line with expectations. The coefficient of determination indicates that this very weak variable explains only 2% of the variation in rice acreage in Egypt.

Finally, the effect of the High Dam on rice acreage was tested by introducing a dummy variable into the analysis. The dummy variable was assumed to take the value 1 for the period 1962/63-1970/71 and zero for all earlier years. The estimated equation is then

$$Y_L = 2.998 + 0.0000X \qquad F\text{-ratio} = 35.304$$
$$(-3.045)\quad (5.942) \qquad R^2 = 0.675$$

The overall fit of the equation is generally quite high as shown by the coefficient of determination which amounts to 0.675. This also, implies that the cost of irrigation water (from the High Dam) variable in period (t-1) explains 67.5% of the variations in the acreage of rice in period (t).

Table 7.1

The Correlation Matrix of the Explanatory Variables

	X_1	X_2	X_3	X_4	Y
X_1	1.000				
X_2	0.923	1.000			
X_3	0.927	0.926	1.000		
X_4	0.532	0.511	0.626	1.000	
Y	0.841	0.778	0.686	0.252	1.000

Table 7.2

Regression Results with All the Variables Expressed in Natural Number

Model No.	Results Obtained[1]	F-ratio	$B^{\wedge}$[2]	R^2
1	$Y_{\text{natural number}} = -32.933 + 42.683\ X_1$ (-0.287) (6.413)	41.133	0.841	0.708
2	$Y_n = -30.955 + 6.389\ X_1^r$ (-0.222) (6.395)	40.870	0.840	0.706
3	$Y_n = 9.672 + 23.355\ X_2$ (-1.681) (5.101)	26.018	0.778	0.605
4	$Y_n = 9.253 + 7.298\ X_2^r$ (-1.712) (5.174)	26.247	0.779	0.612
5	$Y_n = -126.012 + 762.843\ X_3$ (-2.289) (3.882)	15.069	0.685	0.470
6	$Y_n = 427.382 + 67.389\ X_4$ (-0.123) (1.075)	1.895	0.317	0.064
7	$Y_n = 591.700 + 414.722\ X$ (-3.252) (6.484)	42.047		0.712

Notes: (1) Figures between parenthesis refer to the t-ratios.

(2) $b^{\wedge}$ represent standard partial regression coefficient.

Table 7.3

Regression Results with All the Variables Expressed in Logarithms

Model No.	Results Obtained[1]	F-ratio	$\hat{b}$ [2]	R^2
1	Y = 1.380 + 1.174 X_1 logarithms to the base 10 (0.230) (5.305)	28.144	0.790	0.623
2	Y_L = 0.420 + 1.169 X_1^r (0.153) (5.284)	27.885	0.788	0.622
3	Y_L = 1.395 + 0.979 X_2 (2.212) (3.757)	14.117	0.674	0.454
4	Y_L = 0.889 + 0.984 X_2^r (2.235) (3.818)	14.581	0.675	0.462
5	Y_L = 2.798 + 1.051 X_3 (2.687) (2.694)	7.257	0.547	0.299
6	Y_L = 2.711 + 0.225 X_4 (0.216) (0.472)	0.223	0.166	0.015
7	Y_L = 2.998 + 0.0000 X (-3.045) (5.942)	35.304		0.675

Notes: (1) Figures between parenthesis refer to the t-ratios

(2) $\hat{b}$ = standard partial regression coefficient.

Table 7.4

Rice Acreage and Its Determinants in the Period 1952/53-1970/71

Years	Acreage thousand feddans	Farm Price in year(t-1)		Cost of Production per feddan in year (t-1)		Relative Price of Rice To:	
		Money Terms Pounds (X_1)	Index (1952/53=100) (X_1^r)	Money Terms Pounds (X_2)	Index (1952/53=100) (X_2^r)	Cotton (X_3)	Corn (X_4)
1952/53	373.6	15.00	100	31.64	100	1.12	6.12
/54	422.6	15.00	100	31.20	100	1.20	5.43
/55	609.6	15.00	100	25.62	82	1.08	6.61
/56	599.7	16.50	110	26.24	84	1.04	4.53
/57	690.3	16.96	113	26.00	83	0.89	4.12
/58	730.9	17.00	113	26.29	84	1.03	5.68
/59	518.3	16.96	113	26.51	85	1.12	5.52
/60	729.2	16.97	113	27.12	87	1.02	5.58
/61	705.8	17.00	114	27.53	88	1.07	4.62
/62	537.0	17.00	113	27.43	88	1.20	4.76
/63	830.1	17.00	113	29.83	96	1.12	5.21
/64	959.5	17.00	113	30.59	98	1.12	4.40
/65	962.1	17.00	113	30.93	99	1.01	4.35
/66	848.1	18.09	121	35.06	112	1.12	4.78
/67	844.0	20.12	134	41.96	134	1.25	4.41
/68	1074.7	25.33	169	45.74	147	1.49	4.96
/69	1204.4	28.46	190	46.51	149	1.63	7.03
/70	1191.5	29.84	199	48.52	156	1.65	6.46
1970/71	1144.3	29.29	195	48.63	156	1.61	7.16

Source: Ministry of Agriculture, Agriculture Economics Bulletin, 1952-1972, Cairo, Egypt.

APPENDIX 8

A Comparison of the Actual and Estimated Values of the Model's Endogenous Variables, (£E million)

8.1 Production

Year	Value-added in Cotton Sector = V^C		Value-added in Foodstuff sector = V^F		Value added in agriculture sector = V^a	
	Actual	Regression projection	Actual	Regression Projection	Actual	Regression Projection
1952/53	111		224	226.6	335	
53/54	79	77.7	245	250.9	324	328.6
54/55	86	90.9	242	263.2	328	354.1
55/56	82	82.9	257	254.5	339	337.4
56/57	80	77.4	269	262.2	349	339.6
57/58	100	106.4	266	267.3	366	373.7
58/59	112	116.0	275	265.4	387	381.4
59/60	114	107.3	291	288.4	405	395.7
60/61	116	110.3	287	287.4	403	397.7
61/62	73	75.1	300	287.6	373	362.7
62/63	113	109.6	313	318.6	426	427.6
63/64	107	107.1	346	330.2	453	437.3
64/65	118	115.5	359	356.7	477	472.1
65/66	130	135.2	352	356.0	482	491.2
66/67	116	115.4	351	362.2	467	477.6
67/68	121		367		488	
68/69	134		359		493	
69/70	150		374		524	

8.1 Production (Continued)

Year	Value added in Social overhead services V^{soh}		Value added in other services V^{os}		Value added in Services Sector V^{os}		Value added in Industrial Sector V^{i}	
	Actual	Regression Projection	Actual	Regression Progression	Actual	Regression Projection	Actual	Regression Projection
1952/53	113		330		443		200	
53/54	119	117	351	333	470	450	209	210
55	128	122	358	353	486	475	219	218
56	136	134	360	364	496	498	232	231
57	134	143	346	345	480	488	249	247
58	139	145	365	370	504	515	274	275
59	149	153	373	373	522	526	295	295
60	172	165	395	417	567	582	313	313
61	183	183	436	434	619	617	342	342
62	200	198	438	448	638	646	400	399
63	212	218	467	470	679	688	432	434
64	230	230	503	501	733	731	484	483
65	245	245	540	535	785	780	500	499
66	267	258	580	559	847	817	514	515
67	276	280	574	584	850	864	511	513
68	230		638		868		492	
69	240		664		904		557	
1969/70	252		713		965		600	

8.2 National Income

	Gross National Product GNP		Net Government Income Y^g			Private Income Y^p	
	Actual	Regression Projection	Actual	Regression Projection	Model Projection	Actual	Model Projection
1952/53	1086		128			958	
53/54	1085	1069	173	173	169.4	912	896
54/55	1115	1129	151	179	179.4	964	978
55/56	1151	1150	205	187	183.0	946	945
56/57	1158	1154	173	183	183.6	985	981
57/58	1227	1247	186	198	199.3	1041	1061
58/59	1289	1286	239	209	205.8	1050	1047
59/60	1376	1382	238	218	221.9	1138	1144
60/61	1445	1439	243	232	231.5	1202	1196
61/62	1498	1494	228	242	240.8	1270	1266
62/63	1685	1698	269	276	275.0	1416	1429
63/64	1851	1833	283	303	297.7	1568	1550
64/65	2030	2020	331	335	329.1	1699	1689
65/66	2125	2103	344	349	343.1	1781	1759
66/67	2122	2149	366	348	350.8	1756	1783
67/68	2169		441			1728	
68/69	2271		549			1722	
69/70	2462		650			1812	

8.3 Consumption

	Foodstuffs C^F			Household Consumption of Industrial goods & Services $C^{h(i+s)}$			Government Consumption of goods and Services C^g		
	Actual	Regression projection	Model projection	Actual	Regression Projection	Model projection	Actual	Regression Projection	Model Projection
1952/53				–	–	–	–	–	–
53/54	316	311	308	455	449	448	176	188	188.9
54/55	302	326	327	474	477	495	196	191	202.3
55/56	322	328	328	423	456	469	237	206	207
56/57	331	343	242	412	471	481	249	223	208
57/58	341	358	360	509	515	536	234	243	228.6
58/59	377	363	364	531	513	527	229	242	237.3
59/60	402	385	386	570	555	572	228	253	258.7
60/61	384	401	399	599	601	612	253	259	271.4
61/62	432	417	415	659	640	652	245	275	283.7
62/63	449	446	458	722	699	724	318	307	329.2
63/64	475	474	472	750	775	785	394	359	359.3
64/65	490	496	495	865	852	863	402	417	401.
65/66	511	510	506	902	916	918	430	423	419.5
66/67	510	510	512	927	928	951	421	426	429.8
67/68	620			940			503		
68/69	628			961			627		
69/70	731			990			732		

8.3 Consumption (Cont'd)

	Consumption of Industrial goods C^i		Consumption of Services C^s		Total consumption $C^t = \underline{\overline{C}}^f + C^{h(i+s)} + C^{\underline{g}}\overline{\underline{}}$		$C^t = (C^f + C^i + C^s)$	
	Input/ Output projection	Model projection	I/O projection	Model projection	Actual	Model projection	Actual	Model Projection
1952/53	–	–	–	–	–	–	–	–
53/54	217	221	423	405	947	932	947	934
54/55	231	229	437	428	972	1018	972	984
55/56	223	220	446	448	982	1034	982	996
56/57	245	245	432	439	992	1072	1012	1026
57/58	265	273	454	464	1084	1130	1084	1097
58/59	286	288	470	473	1137	1120	1137	1125
59/60	333	323	510	524	1200	1186	1200	1233
60/61	324	316	557	555	1236	1264	1236	1270
61/62	388	388	574	581	1336	1312	1336	1384
62/63	412	416	611	619	1489	1500	1489	1493
63/64	431	431	682	680	1619	1651	1619	1583
64/65	469	472	738	733	1757	1760	1757	1700
65/66	561	560	796	768	1843	1854	1843	1834
66/67	507	510	799	812	1858	1884	1858	1834
67/68					2063		2063	
68/69					2216		2216	
69/70					2453		2453	

8.4 Savings

	Private Savings (Household & business) $=S^p$			Government budget (current) $=S^g$ savings		$S^t=(S^p+S^g)$	$S^t=(GNP-C^{f+i+s})$	
	Actual	Regression Projection	Model Projection	Actual	Model Projection	Actual	Model Projection	Projection
1952/53	165			-6		159		
53/54	147	158	153.9	-3	-19.5	144	134	135
54/55	192	172.5	176	-45	-22.9	147	153	145
55/56	195	170	169.4	-32	-24	163	145	154
56/57	222	181.4	180.3	-76	-24.4	146	156	128
57/58	196	178.4	183.7	-48	-29.3	148	155	150
58/59	139	174.9	174.3	+10	-31.5	149	142	161
59/60	166	208.1	209.3	+10	-36.8	176	172	149
60/61	219	236.3	234.5	-10	-39.9	209	195	169
61/62	172	192.6	191.3	-17	-42.9	155	148	110
62/63	245	280.4	282.7	-49	-54.2	196	229	205
63/64	343	331.2	327.7	-111	-61.6	232	266	250
64/65	359	338.2	335.9	-71	-71.9	288	264	320
65/66	363	357.5	352.5	-86	-76.4	277	277	269
66/67	345	353.1	358.3	-55	-79	290	279	315
67/68	282			-62		220		
68/69	271			-78		193		
1969/70	341			-82		259		

8.5 Imports

	Consumer goods M^c	Intermediate Goods M^i			Capital Goods M^k		Foodstuffs M^f		Total M^t		
	Actual	Actual	Regression Projection	Model Projection	Actual	Model Projection	Actual	Model Projection	Actual	Equation Projection	Model Projection
1952/53	55	58			42		47		202		
53/54	36	53	58	58	36	37	27	12	152	158	143
54/55	30	62	62	61	44	44	21	21	157	157	156
55/56	24	67	67	66	51	51	22	34	164	164	175
56/57	12	68	73	73	45	45	32	53	157	162	183
57/58	19	72	83	83	48	48	42	60	181	192	210
58/59	25	88	91	91	56	56	47	50	216	219	222
59/60	10	114	98	98	56	56	46	32	226	210	196
60/61	5	125	110	110	62	63	37	51	229	215	229
61/62	8	130	132	132	69	69	61	59	268	270	268
62/63	13	144	145	146	76	75	64	65	297	298	299
63/64	15	163	165	165	84	85	67	84	329	333	349
64/65	7	162	171	171	74	73	70	77	313	321	328
65/66	9	181	177	177	100	100	74	75	364	360	361
66/67	12	136	135	136	68	68	82	70	298	297	286
67/68	10	113			67		78		268		
68/69	9	100			46		45		200		
69/70	7	145			50		45		250		

8.6 EXPORTS

	Raw Cotton E^c			Industrial Goods E^i			Food stuffs E^f	Total E^t		
	Actual	I/O Projection	Model projection	Actual	Regression Projection	Model Projection	Actual	Actual	Equation Projection	Model Projection
1952/53	133			14			11	158		
53/54	115	112	110	20	18	19	7	142	137	136
54/55	87	97	102	23	21	21	11	121	129	134
55/56	103	100	101	23	23	23	15	141	138	139
56/57	83	82	80	22	27	26	17	122	126	123
57/58	90	93	99	26	31	31	21	137	145	141
58/59	116	118	121	33	34	34	19	168	171	174
59/60	135	135	128	41	38	38	17	193	190	183
60/61	117	120	116	44	42	42	25	186	187	183
61/62	94	93	94	50	50	50	14	159	157	158
62/63	101	102	99	55	55	55	28	184	185	182
63/64	109	111	112	76	79	78	32	217	212	222
64/65	120	122	120	83	82	82	27	230	231	229
65/66	125	117	120	81	84	84	23	229	224	227
66/67	110	119	119	89	85	85	28	227	232	232
67/68	109			84			26	219		
68/69	99			108			44	251		
69/70	127			100			32	259		

APPENDIX 9
STATISTICAL APPENDIX

(I) Introduction on Egypt's Statistics:

During the 1950's and 1960's, the range and quantity of material published by the Department of Statistics and Census (DSC), its successor the Central Agency of Public Mobilization and Statistics (CAPMS) and various other government agencies and ministries, had considerably increased. Research on Egypt's economy now suffers from the multiplicity of sources and data.

Various agencies, e.g. CAPMS, the Ministry of Planning, or Ministry of Industry - supply data which are difficult to compare. More serious difficulties arise from the frequent changes in the concepts, coverage, and format of such important sources as the national accounts, population censuses, trade statistics, and censuses of industrial production. These changes are never fully explained and attempts at revising earlier data for consistency with new definitions are seldom made by official agencies.

A major problem in attempting to construct consistent time-series, is that the data for the 1960's are fundamentaly different from the data for 1950's. This arises from the administrative shake-ups and institutional changes which took place over these two decades. The situation may be depicted as follows. The "Department of Statistics and Census" was traditionally the main agency for statistics. It had a long history, was gaining experience, and the quality of its work improved all the time. It was concerned with consistency; the 1960 Population Census, for instance, contains tables adjusting earlier data for comparability. In the 1950's, the establishment of a "National Planning Committee" had interesting consequences for the gathering

and processing of statistics. The "Department of Statistics and Census" continued to function, even though the "National Planning Committee" produced a considerable amount of data on the economy. A very able team of economists and statisticians was involved in the gathering and processing of statistical material in preparation of the First Five-Year Comprehensive Plan (1960-1965). They benefited from the advice of foreign experts of great academic standing including Jan Tinbergen and Bent Hansen among many others.

During the 1960's, the situation changed. The "Department of Statistics and Census" was replaced by the "Central Agency of Public Mobilization and Statistics" while the "National Planning Committee" became the "Ministry of Planning". The "Central Agency of Public Mobilization and Statistics" merged the military administration of mobilization and the civilian department of statistics under the same authority. This change had many repercussions. Statistics have become something like military secrets and access to them has become very difficult. The "Central Agency of Public Mobilization and Statistics", however, has shown great dynamism and initiative. The number of statistical publications, the amount of data collected, and the range of aspects covered have increased considerably. But, the "Central Agency of Public Mobilization and Statistics" has changed the concepts, classifications and format of most of the publications of its predecessor's the "Department of Statistics and Census". As the "Central Agency of Public Mobilization and Statistics" is newly established, it is gaining experience at the price of frequent changes in methods of collection and presentation of the data. Finally, the "Central Agency of Public Mobilization and Statistics" claims a monopoly on statistics and prohibits other institutions from publishing figures different from its own. Ministries have retained a certain

independence but other institutions - such as the Research Departments of the National Bank, Central Bank, and the Fédération Egyptienne des Industries - have had to restrict their activities.

The task of appraising the quality and reliability of statistical data has become much more difficult than before. It is always possible to interview officials and to form a judgement from their verbal comments, but the secrecy that surrounds the most anodyne activities of the "Central Agency of Public Mobilization and Statistics" and the rapid turnover of personnel often defeat attempts to trace the relevant official able to answer specific queries.

The Ministry of Planning which succeeded the National Planning Committee in the early 1960's has not maintained the previous high professional standards. The original team of the National Planning Committee was dispersed by the brain drain; many probably lost heart when they realized that planning would not, after all, have the leading role in the management of the economy that they had expected it to have. Thus, the nature of the data has changed between the 1950's and the 1960's, and many a time-series suffers from gaps and discontinuities.

II. The Data Used in the Present Study:

The data used in the present study have been collected from scattered sources. Major operations were performed on the assembled data (1) to check their accuracy through the use of other available evidence; (2) to homogenize them conceptually; (3) to splice different series together; and (4) to derive the desired deflated series for whatever period examined.

It is worth noting that the data used, on the whole, are more accurate in showing general trends than in measuring year to year

fluctuations. The extent of measurement errors in the set of data used varies cross-sectionally and over time. For example, on the whole, foreign trade data statistics are more accurate than national income accounts, especially for the period before 1959/60; and the price indices are probably the least reliable both on conceptual and precision grounds.

It is also worth mentioning that the different series were spliced at 1959/60 for three reasons. First, that year was a "normal" year in the sense that it was not dominated by an exceptional event such as war, crop failure or depression. Secondly, it can be regarded as a demarcation year in Egypt's recent economic history as it was the base year of the country's First Five-Year Plan (1960-1965), and was followed by important institutional changes that altered the character of the economy. Thirdly, the quality and availability of data on the Egyptian economy, especially those prepared for the Plan, had reached a satisfactory level by 1960.

Below then follows a brief account of the data used and the main operations that were performed on them. This represents a supplement to the references and sources cited in the main body of the study.

(1) Sectoral Outputs

For the Period 1952-1962:

(1) U.A.R.Department of Statistics and Census, "Ten Years of Revolution": Statistical Atlas, Cairo, July, 1962.

(2) D.C.Mead, "Growth and Structural Change in the Egyptian Economy", Richard D.Irwin, Inc., Homewood, Illinois, 1967.

For the Period 1959/60-1969/70:

(1) Ministry of Planning, "Follow-Up and Evaluation of Economic Growth in the UAR,1965/66", Cairo, Sep.1967 (in Arabic)

(2) " "Follow-Up and Evaluation of Economic Growth in the UAR, 1966/67", Cairo, August,1968 (in Arabic)

(3) " "Follow-Up and Evaluation of Economic Growth in the UAR, 1967/68", Cairo,1969 (in Arabic)

(4) " "Follow-Up and Evaluation of Economic Growth in the UAR, 1968/9",Cairo, 1970 (in Arabic)

(5) " "Follow-up and Evaluation of Economic Growth in the UAR 1969/70", Cairo,May 1971 (in Arabic).

(6) " "Follow-Up and Evaluation Report on the First Five-Year Plan (1960/61-64/65)",Part I Cairo, February, 1966.

The two series were spliced at 1959/60. The Ministry of Planning has taken over the National Planning Committee's previous work and therefore the spliced series are homogeneous.

For a detailed evaluation of the National Planning Committee's estimates, see:

B.Hansen, "The Growth of National Income in the UAR (Egypt) 1939-1962", Institure of National Planning, memo no.343,Cairo,June 1963.

For an evaluation of the Ministry of Planning's estimates, see:

B. Hansen, "Planning & Economic Growth in the UAR 1960-65", in P.J.Vatikiotis (ed.), Egypt Since the Revolution, Frederick A.Praeger, Publishers, New York, 1968.

More detailed information on sectoral outputs (both net and gross at current and constant prices) are from:

(1) Ministry of Planning, "Realized Production and Income Targets in Agriculture, Animal Wealth and Fishing, by Sector in the First Five Year Plan", Cairo, March, 1966 (in Arabic).

(2) " "Realized Production and Income Targets in Mining, Manufacturing, and Electricity, by Sector in the First Five Year Plan, 1960/61-64/65", Cairo, March, 1966 (in Arabic)

For the agricultural sector, a major additional source has been the agricultural census published by:

Central Agency for Public Mobilization & Statistics, Estimation of National Income in the Agricultural Sector for 1963 and 1964, Ref.No.66/400, Cairo, August, 1966 (in Arabic).

(2) National Income by Type of Expenditure

Aggregate series of household consumption, government consumption, investment and the balance of payments on current account are mainly from:

(1) S.A.El-Bawab, "Indicators of Economic Development in the UAR since the Beginning of the Revolution until the End of the First Five Year Plan (1952/53-64/65)", Cairo, Ministry of Planning, February, 1967, Mimeographed (in Arabic).

(2) Ministry of Planning, "Follow-Up and Evaluation of Economic Growth in the UAR, 1966/67; 1967/68; 1968/69; and 1969/70", op.cit.

(3) B.Hansen, "The National Outlay of the UAR (Egypt) 1937-39 and 1945-1962/63", Institute of National Planning, memo no.377, Cairo, December 1963.

The above series, which are at current prices, were deflated using an implicit national income price deflator.

Disaggregated investment series for the period 1952-62 and 1959-69 respectively from:

(1) UAR, Department of Statistics & Census, "Ten Years of Revolution", op.cit.

(2) Ministry of Planning, "Follow-up and Evaluation of Economic Growth in the UAR, for the period 1965/66-1969/70", op.cit.

The above two series, which are both homogeneous and reliable, were spliced at the year 1959/60.

In constructing the sectoral capital stock series for the growth model, use was made of sectoral investment series dating back to the 1930's. These were produced from:

Fouad Sherif, "General Trends in the Growth of the Egyptian Economy in the Last Quarter Century", National Planning Committee, memo no.121, Cairo, January 1959, p.10 (in Arabic).

The above investment series were deflated using the official wholesale price index for the period 1930-1952. Moreover the industrial implicit price deflator was used to define the investment series obtained from:

U.A.R., Department of Statistics and Census, "Ten Years of Revolution", and Ministry of Planning, Follow-up and Evaluation of Economic Growth in the United Arab Republic of Egypt".

Disaggregated consumption series were derived as follows: Consumption of foodstuffs was estimated as foodstuffs production plus the balance of food trade. The series obtained accorded well with the Ministry of Planning's estimate of foodstuffs consumption for the 1960's as given in:

M.L.El-Sayed, "The Effect of Increased Consumption on the Economic

and Social Development Plan", Ministry of Planning, Cairo, January 1966 (in Arabic).

Consumption of industrial goods and services was estimated through the use of input-output, supply-demand balance equations for these two sectors as explained in the chapter on changes in the consumption pattern. A check on the accuracy of the commodity consumption series was undertaken by comparing their sum to the official estimate of aggregate consumption (of both household and government). This test proved the reliability of the consumption by commodity series.

(3) Labour Force and Employment

There are three main sources of data used in this study on labour force and employment:

(i) Census of Industrial Production (CIP);

(ii) Population Census (PC); and

(iii) Follow-up Reports of the Plan (FURP).

CIP:

A Census of Industrial Production was taken in the years 1944, 1947, 1950, 1952, 1954, 1956, and then annually until 1962. A new annual series started with the year 1963/64; and the latest available CIP covers 1966/67. After the census of industrial production in 1950, the coverage was restricted to establishments engaging ten persons or more. The only exception is the 1967 census in which a survey of small establishments (1-9 persons) was undertaken and the results published in 1971 in great detail. Government factories were never included.

Census of Industrial Production tends to underestimate employment at the lower end of the >10 size group. The Census of Establishment (CE)* tends to be more successful in this respect. There are a number of reasons

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* This Census was taken at three-year intervals from 1942 to 1960 and then in 1964 and 1967. Prior to 1960 the results of the Census were not published save in very summary form in the "Annuaire Statistique".

for this. CE concerns itself with establishments of all sizes, it is less likely to miss out those in which employment fluctuates around the "ten persons" dividing line. Furthermore, small firms may fail to respond to elaborate questionnaires required for CIP, and many may produce inconsistent statements that are discarded. The Census of Establishments does not involve sending out questionnaires; the enumeration is made on the spot. This method has certain advantages. It enables better coverage of the activities undertaken in temporary premises such as the manufacturing of tiles and other cement products on building sites. More generally, CE enumerators will spot establishments in which non-registered firms or artisans operate. The CIP questionnaires are unlikely to reach these places.

However, CIP may be more accurate for larger firms. This again results from differences in procedure. The CIP questionnaires provide opportunities for cross-checks. Errors and inconsistencies are likely to be followed by queries when large firms are concerned. The Statistical Office is more likely to sue large firms rather than small ones for failure to respond. CE questionnaires do not provide similar opportunities for control.

PC:

Population Census were taken at 10 year intervals between 1897 and 1947, and then in 1960. The coverage in a PC is likely to be more comprehensive than in other sources. Labour force data by economic sectors may not be very reliable because PCs are based on household returns. The distribution of the labour force by branches of economic activity is done by the Statistical Office, given the respondent's statements on occupation and place of work. Errors are likely to occur when the place of work or the nature of the occupation is difficult to identify.

However, PC provides a better idea than CE of the magnitude of manufacturing employment. Government workers, jobbing and itinerant artisans such as village carpenters, workers engaged in household industries, or small establishments which may escape the CE enumerator are all included.

FURP:

Follow-up Reports of the Plan includes an assessment of economic performance and the fulfilment of planning targets. From these various reports it has been possible to construct a continuous series of annual data from 1959/60 to 1969/70. The circulation of these reports is restricted although they contain little critical material and nothing but official data which could be gathered, though at great expense of time and energy, elsewhere.

(4) Saving

The series of aggregate savings are from:

(i) S.A.El-Bawab, "Indicators of Economic Development in the United Arab Republic of Egypt since the Beginning of the Revolution until the End of the First-Five Year Plan", op.cit.

(ii) Ministry of Planning, "Follow-up and Evolution of Economic Growth in the U.A.R., 1966/67; 1968/69; 1969/70", op.cit.

Government saving is derived as government expenditure (consumption) minus government net income. The series for government net income were derived from raw data provided by:

(i) National Bank of Egypt , "The Economy of the U.A.R. during the 1950's", Cairo, 1963. (in Arabic)

(ii) B.Hansen, "Savings in the U.A.R.(Egypt), 1938/39 and 1945/46-1962/63", Institute of National Planning,Memo No.551, March 1965.

(iii) D.Mead, "Growth and Structural Change in the Egyptian Economy",op.cit.

(iv) R.Mabro, "The Egyptian Economy, 1952-1972", Clarendon Press, Oxford, 1974.

Private saving was estimated as aggregate saving minus government budget saving. The estimated current price saving series were deflated using the national income implicit price deflator.

(5) Foreign Trade

Foreign trade series were constructed using data from:

(i) National Bank of Egypt, "Economic Bulletin", several issues.

(ii) Ministry of Planning, "Exports during the Period 1959/60-1965/66 at current and constant Prices", Mimeographed, Cairo (in Arabic).

(iii) Ministry of Planning, "Imports during the Period 1959/60-65/66 at current and constant Prices", Cairo (in Arabic).

(iv) Ministry of Planning, "Follow-up and Evaluation of Economic Growth in the UAR, 1966/67; 1967/68; 1969/70", op.cit.

However, while commodity trade series at aggregated and disaggregated levels are available at both current and constant prices, comparable series for the 1950's could be derived only at current prices. These series, therefore, were deflated using appropriate price indices derived from disaggregated indices given in:

Central Agency for Public Mobilization and Statistics, "Index Numbers for Foreign Trade", Cairo, several years (in Arabic).

(6) Input-Output Table

The input-output table selected is that of the Ministry of Planning for 1963/64 at 1959/60 prices; see:

Ministry of Planning, "Construction of an Input-Output Table for 1963/64 at Constant 1959/60 production cost", Memo No.704, Cairo, June 1966 (in Arabic).

The table was aggregated to an ISIC 2-digit level of aggregation in order to correspond to the sectoral production series used in our analysis.

Another Input-Output Table selected is that of the Central Agency for Public Mobilization and Statistics for 1966/67 at current market prices; see: Central Agency for Public Mobilization and Statistics , 1966/67 Input-Output Table", Cairo, April,1973 (in Arabic).

The table was used to analyse the cost structure, the dependence on imports of intermediates, and the degree of backward integration of Egyptian industry.

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(A) Egyptian Official Publications

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