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Dunning's Eclectic Paradigm: A Holistic, Yet Context Specific Framework for Analysing the Determinants of outward FDI. Evidence from International Greek Investments

Abstract

During the last two decades Greece has emerged as a key regional player and one of the largest investors in the Central and Eastern and South Eastern European Countries (CESEE) (Bastian, 2004, Demos, Filippaios, & Papanastassiou, 2004, Kekic, 2005). With the opening up of neighbouring markets in the early 1990s the Greek firms and entrepreneurs grabbed the opportunity to exploit their ownership advantages and expand abroad. Within this context, the primary aim of this study is to test the impact of ownership and location advantages in determining the internalisation decisions by Greek investors participating in the ASE, proving that Dunning's eclectic paradigm (OLI) is a holistic, yet context specific framework of analysing foreign direct investment (FDI) determinants. To set the OLI in a specific context we account for the different sectors and countries where Greek companies have internationalised, as well as for the time period when investments have been made. This paper's second major contribution is that by looking at both ownership advantages and institutional determinants it complements the previous works on institutional determinants of FDI. Our findings show that the expansion of Greek firms occurs primarily in similar countries with small market size, and open economies. Rule of law and high bureaucratic quality remain essential for the firm's decision whereas the existence of high corruption act as a deterrent. Finally, a significant finding is that of the existence of a learning curve in the Greek firms' international expansion.

Keywords: Eclectic paradigm, Greece, Central, Eastern and South-Eastern European countries, foreign direct investment

JEL Classification: F21, F23, M21, L25

Dunning's Eclectic Paradigm: A Holistic, Yet Context Specific Framework for Analysing the Determinants of outward FDI. Evidence from International Greek Investments

1. Introduction

During the last two decades Greece has emerged as a key regional player and one of the largest investors in the Central and Eastern and South Eastern European Countries (CESEE) (Bastian, 2004, Demos, Filippaios, & Papanastassiou, 2004, Kekic, 2005). With the opening up of neighbouring markets in the early 1990s the Greek firms and entrepreneurs grabbed the opportunity to exploit their ownership advantages and expand abroad. This expansion came through two channels. First, foreign subsidiaries of MNEs located in Greece upgraded their role to regional headquarters and were used by their mother companies as regional centres for the expansion to the Balkans and the Central and Eastern European countries. Firms like Delta, a partner of Danone; 3E, a Coca-Cola soft drinks subsidiary; Chipita, a PepsiCo food subsidiary and Intracom, a partner of Siemens, working in telecommunications, were amongst the pioneer investors. This strategic change appears to be verified by a prior study of Kyrkilis and Pantelidis (1994) arguing that 'it is possible for foreign subsidiaries to readjust their market strategies along time and in accordance with changing conditions'. The second channel of expansion captures purely domestic firms, family, private or public, that became multinationals by seizing the opportunity to expand abroad in order to exploit either their home-based advantages or their close cultural links especially with the CESEE.

Greece has thus changed from a peripheral European country to a regional centre, especially in its neighbouring South-Eastern European countries. Current developments in the region have changed the role of domestic subsidiaries (Manolopoulos, Papanastassiou, & Pearce, 2005). This process was enhanced by Greek policies aiming to transform the country into a key player for the region. The 'Greek-Balkan Reconstruction Plan', offering almost 500 million euros, is an indicative policy fulfilling that aim (Hellenic Centre for, 2005). Furthermore, this expansion has been facilitated by the upgrading of the Athens Stock Exchange (ASE) from a developing to a developed financial market, i.e. a reliable source for raising funds. Gradually, this phenomenon of Greek expansion abroad took another dimension. In the later stages of internationalisation of Greek firms we also observe investments into developing, but distant countries, such as India and China, which have recently become popular investment destinations or even into developed countries with which Greece has had historical, economic and cultural ties, such as the UK or the US. This highlights the building up of experience and knowledge by Greek entrepreneurs. This internationalisation process of Greek firms does not deviate from what the Uppsala School's internationalisation process (Johanson & Vahlne, 1977) would predict, as Greeks invested in the early stages in countries with

small 'psychic' distance (Bastian, 2004) and then by capitalising on their experience moved into other more distant countries. The ownership advantages of Greek firms supported by the location advantages of the host markets created unique capabilities and as a consequence enabled them to invest in other EU countries or even the US. It is the case that Greek MNEs can also derive substantial advantages from abroad (Dunning & Lundan, 1998).

Within this context, the aim of this study is to test the impact of ownership and location advantages in determining the internalisation decisions by Greek investors participating in the ASE using Dunning's Eclectic Paradigm (OLI) (1988, 2004, 2004, 1988, 1977, 2001, 2000). OLI is a holistic, yet context specific framework of analysing foreign direct investment (FDI) determinants and to set it in a specific context we account for the different sectors and countries where Greek companies have internationalised, as well as for the time period when investments have been made. In particular, we control for different types of ownership advantages in determining the firm's decision to expand abroad and we include in the locational advantages the importance of institutional factors in attracting foreign investors. In doing so, we build on a previous work by Filippaios and Stoian (2006). We apply though a completely different methodology, to accommodate for our intention to test the eclectic framework's context specific character and we work with a full sample of all investments by Greek firms abroad for the given period, i.e. from early to late nineties.

By investigating the ownership advantages of investors coming from one country only, this study fills in a 'niche' in the investigation of FDI determinants and emphasises Dunning's (1988, 1977) original assumption that ownership advantages can be highly embedded in the country of origin of the investing firm. By testing the significance of specific firm ownership advantages in determining a firm's decision to internationalise, this paper also complements studies that have considered country of origin factors rather than firm specific advantages in assessing FDI (Deichmann, 2001, Grosse & Trevino, 1996). Some generalisation of results is, nevertheless, possible. By choosing Greece, we are able to examine how a small, peripheral economy in the context of European Union (EU), increased its regional role through outward FDI, especially in its neighbouring countries (Stoian & Filippaios, 2005). The lessons learned may be applied to other small, peripheral economies within the EU context- such as Hungary. There are already signs that Hungary has already become a source of FDI flows into neighbouring countries (WIIW, 2005), mirroring, yet in an incipient phase, the Greek experience.

This paper's third major contribution is that by looking at both ownership advantages and institutional determinants it complements the previous works on institutional determinants of FDI (Bevan & Estrin, 2004, Bevan, Estrin, & Meyer, 2004, Brenton, Di Mauro, & Lücke, 1999, Brunetti, Kisunko, & Weder, 1997, Oxley, 1999, Pournarakis & Varsakelis, 2004, Wheeler &

Mody, 1992)¹. The emphasis on testing the significance of different ownership advantages for different institutional factors stems firstly from the need of particular countries to attract the ‘right type’ of investors with a potential positive impact on the economy and secondly, from the different challenges that institutional factors may pose in different countries.

The remainder of the paper is organised as follows. We first discuss the theoretical framework. In section 3 we present the operationalisation of variables and the model specification. The description of the data sample and the methodology follows in section 4. In section 5, we discuss the empirical analysis and the results. Finally, in section 6 we conclude and discuss the limitations of the present study suggesting avenues for further investigation.

2. The eclectic paradigm: A theoretical framework for investigation

Dunning’s eclectic paradigm (OLI) has been for long the most influential framework for empirical investigation of determinants of foreign direct investment, despite its several limitations some of which were accepted by Dunning (2001) himself.² Indeed, OLI has been extended to accommodate several criticisms (Cantwell & Narula, 2001, Dunning, 2001, Dunning, Pak, & Beldona, 2007, Estrella Tolentino, 2001) and this study joins this strand of research. Here we draw on Dunning’s (extended) OLI eclectic paradigm (1988, 2004, 2004, 1988, 1977, 2001, 2000), expanding it by incorporating institutional theory, as Dunning (2006) himself proposes, in the choice of the location advantages variables. These institutional determinants can be both firm as well as country specific (Dunning, 2006). In doing so, we also build on Guisinger (2001) and North (1990, 2005) and we complement previous empirical studies.³

The eclectic paradigm offers a holistic framework to investigate the significance of factors influencing both the initial expansion of multinational enterprises (MNEs) by foreign production and the subsequent growth of their activities (Dunning & Robson, 1987 :1, Estrella Tolentino, 2001 :191). The framework facilitates comparison between different theories by establishing the common ground between various approaches and by clarifying the specific questions theorists have posed, as well as the different levels of analysis (Cantwell & Narula, 2001). Because of its generality, OLI

¹ See also Carstensen, Kai & Farid Toubal. (2004). Foreign direct investment in Central and Eastern European countries: a dynamic panel analysis. *Journal of Comparative Economics*, 32(1): 3-22, Disdier, Anne-Celia & Thierry Mayer. (2004). How different is Eastern Europe? Structure and determinants of location choices by French firms in Eastern and Western Europe. *Journal of Comparative Economics*, 32(2): 280-96, Dunning, J.H. (2004). Institutional Reform, FDI and European Transition Economies. *University of Reading Business School Discussion Paper Series*, 14, Henisz, W. J. (2000). The institutional environment for multinational investment. *Journal of Law Economics & Organization*, 16(2): 334-64, Rodrik, D. & A. Subramanian. (2003). The Primacy of Institutions. *Finance and Development*, 40(2): 31-35, Tihanyi, L. & A. S. Roath. (2002). Technology transfer and institutional development in Central and Eastern Europe. *Journal of World Business*, 37(3): 188-98, Trevino, L. J. & F. G. Mixon. (2004). Strategic factors affecting foreign direct investment decisions by multi-national enterprises in Latin America. *Journal of World Business*, 39(3): 233-43..

² For a review of the six branches of theories that the OLI was a by-product of, see Estrella Tolentino (2001:192).

³ For a review see Dunning (1988b: 8).

has only limited power to explain specific kinds of foreign production or the behaviour of certain enterprises (Dunning, 1988 :1, Dunning, 2001 :176) unless someone applies the framework to a predefined specific context. Indeed, OLI is context specific, and in particular its configuration is likely to vary across firms, regions or countries, industries or value-added activities. Furthermore, its applicability is likely to depend on the motivations for FDI (Dunning, 2001 :176). To accommodate for this, we clearly specify our context and within this study we set the OLI within the context of Greek firms expanding abroad.

The basic assumption of the eclectic paradigm is that the returns to FDI, and hence FDI itself, can be explained by a set of three factors: the ownership advantages of firms ‘O’, indicating who is going to produce abroad ‘and for that matter, other forms of international activity’ (Dunning, 1993 :142) ; by locational factors ‘L’ ‘influencing the where to produce’ (Dunning, 1993 :143) and by the internalisation factor ‘I’ that ‘addresses the question of why firms engage in FDI rather than license foreign firms to use their proprietary assets’ (Dunning, 1993 :145). Using the above propositions one can explain the scope and geography of international value added activities. We briefly review those factors and several criticisms of the OLI below.

In order to be able to compete in a foreign location, a firm must possess certain ownership advantages—sometimes called ‘competitive’ or ‘monopolistic’ advantages - that can compensate for the additional costs associated with setting up and operating abroad. These are costs which are not faced by domestic producers (Dunning, 1988 :2). Some of these ownership advantages may also stem from the nationality of the firm (Dunning, 1988 :20) and hence we focus on Greek investors abroad.

The second condition of international production is that the company must be better off transferring its ownership advantage within the firm across borders, rather than selling it to a third party via licensing or franchising, for example. This second factor is the internalisation and has been defined by Dunning (1993) as a choice between investing abroad or licensing a firm to exploit O advantages possessed by the licensor. The internalisation of ownership advantages occurs when the international market is not the best modality for transacting intermediate goods or services. This can reflect a possible market failure (Dunning, 1988, Teece, 1986, Vernon, 1983). The greater the perceived costs of market failure, the more appealing it is for MNEs to internalise their ownership advantages. When there is no external market for the firm’s ownership advantages the distinction between ‘I’ and ‘O’ may be irrelevant. It is also correct to distinguish between the MNEs’ capability to internalise the market and their willingness to do so (Dunning, 1988 :3).

The third condition of the eclectic paradigm is concerned with the ‘where’ of production. MNEs will chose to produce abroad whenever it is in their best interests to combine intermediate products produced in their home country which are spatially transferable with at least some

immobile factors or intermediate products specific to the foreign country (Dunning, 1988 :4). Some of the location advantages include factors endowment and availability, geographical factors or public intervention in the allocation of resources as reflected by legislation towards the production and licensing of technology, patent system, tax and exchange rate policies which a multinational would like either to avoid or to exploit (Dunning, 1977 :11). Although in the eclectic paradigm the location advantages are treated independently from ownership advantages, the decision of where to expand internationally is not independent of ownership advantages or of the route by which these advantages will be used. In other words, there is a constant interplay⁴ between ‘O’, ‘L’ and ‘I’ (Cantwell & Narula, 2001, Dunning, 2001). In this study we assume that MNEs transfer their improved ownership advantages and their respective ability to deal with several institutional challenges in specific host countries in order to operate in those different host economies. We differentiate thus between two types of ownership advantages, those that are firm specific and can be used in different locations and those that the firms are building gradually interacting with their home institutional environment or with the institutional environment of the countries where they establish subsidiaries. We also assume that the interest of governments in attracting FDI stems, at least partially, from the potential improvements that certain ownership advantages can bring onto location advantages of a given country.⁵

The location advantages put forward by Dunning have been criticised as being a ‘shopping’ list (Dunning, 2001 :177). In defence to this, the chosen variables appear to be justified by economic or organisational theory (Dunning, 2001 :177). Furthermore, by having an all encompassing list, the framework is able to incorporate complementary approaches such as the institutional theory and so does this study, drawing on North (1990, 2005) and Guisinger (2001). This is consistent with the fact that although scholars concentrated initially on factor endowments, especially labour costs and productivity (Bevan, Estrin, & Meyer, 2004 :45), recently multinationals have increasingly focused on ‘created assets’ (Narula & Dunning, 2000) including knowledge-based assets, infrastructure and institutions of the host economy. According to Mudambi

⁴ Although considered by some as static, the strategic response of the firms, in changes to their external environment, can alter the OLI’s original configuration. This gives ground to the emergence of a dynamic version of OLI. The changes in the external environment can range from alterations in the location factors of a specific region to amendments in the competitors’ strategies. The three aspects of the eclectic paradigm interact in a continuous process through which firms upgrade their ownership advantages and countries enhance their competitive position in the global environment (Dunning, 2001, 178; Cantwell and Narula, 2001, 161).

⁵ Indeed, multinationals and FDI can foster the development of the local economy and domestic firms through three main channels. The first one is linked with the training of local personnel. MNEs improve the capabilities of the local labour force by using training programmes or new management techniques. The second channel occurs by building backward and forward linkages with domestic firms. Integrating domestic partners in the MNEs’ supply chain facilitates the diffusion of knowledge, therefore transforming local partners. The third channel is an indirect one and has to do with the co-operation of MNEs with local research institutions and universities. This co-operation will eventually lead to the improvement of the local knowledge base and capabilities.

and Navarra (2002 :636), institutions are important determinants of FDI because they ‘represent the major immobile factors in a globalised market ... Legal, political and administrative systems tend to be internationally immobile frameworks whose costs determine the international attractiveness of a location. Institutions affect the capacity of firms to interact and therefore affect the relative transaction and co-ordination cost of production and innovation’ (emphasis added). For potential investors, with institutional O specific advantages, the incentives and restrictions created by institutions ‘shift the playing field favouring some deals and opportunities while discouraging others. They force the investing firms to think strategically about how to avoid the limits imposed by domestic laws as well as how to reap the benefits that the law and particular circumstances are capable of providing’ (Spar, 2001).

Two extensions of OLI are suggested by Guisinger (2001 :264) in his ‘evolved eclectic paradigm’. First, he replaces the ‘I’ factor with ‘M’ for the mode of entry. This allows researchers to differentiate between factors affecting different modes of entry in different countries. While the present study does not distinguish between different entry modes by Greek investors abroad, this could be the subject of a follow up research. The second and major modification of OLI by Guisinger (2001 :265) is the adaptation of the firm’s operations to the international business environment building on institutional theory, hence the ‘A’ in the OLMA. According to Guisinger (2001 :266) ‘there must be a compelling distinction’ between foreign and domestic components of the environment. This present study focuses on how these differences lead to the decision of Greek investors to invest abroad rather than domestically. Furthermore, following on to North (1990, 2005), the environment can be subdivided into organisations or ‘interactors’ and institutions, also known as the ‘geovalent component’. The later element of the environment consists of institutional rules, regulations, cultures and exchange rates and other elements which are geographically bound and usually, but not always, follow national boundaries. They have the potential to affect the performance of the firms and they are to some extent quantifiable, permitting measures of how they vary over time and space (Guisinger, 2001 :266).⁶ Our study focuses on selected institutional factors from Guisinger’s taxonomy related in particular to political risk. This is because many previous studies on transition economies have identified risks as significant determinants of foreign direct investment (Bandelj, 2002, Bevan & Estrin, 2004, Bevan, Estrin, & Meyer, 2004, Disdier & Mayer, 2004, Pournarakis & Varsakelis, 2004). Another argument that can further strengthen our decision to include institutional variables into the firms’ decision to internationalise firstly and then

⁶ According to Guisinger (2001:267), a possible taxonomy of ‘geovalent components’ may include: econography (climate, proximity to major markets, physical size, infrastructure), culture (values, attitudes, beliefs), legal systems (common, civil, religious law), income profile (GNP per capita, growth of GNP, income inequality), political risk (government instability, corruption, bureaucratic instability, quality of government), tax systems (effective tax rate for multinational firms), exchange rates (exchange rate variability, exchange rate over-evaluation/ under-evaluation) and finally, government restrictions (tariffs quotas, investment controls).

internalise comes from the property rights theory. There are studies (Barbosa & Louri, 2002, Dimelis & Louri, 2002) showing that the different ownership structures adopted by MNEs, when doing FDI, demonstrate a way of protecting their property rights, their reputation or other intangible assets. These studies base their arguments on the property rights theory and link ownership structures with performance. The higher the control of the mother company over the subsidiary the more efficient it is to transfer higher level of technology and thus transform this subsidiary to a much more productive unit against its local competitors. This effect is further augmented once one takes into consideration the monitoring costs. The institutional environment, especially through bureaucratic quality, expropriation risk, corruption but at most the rule of law can force firms towards adopting an ownership or other non-equity structures.

3. Variable operationalisation and model formulation

In this paper, we test the joint significance of ownership and location advantage in determining the decision of internalisation by Greek investors participating in the ASE, proving that OLI is a holistic, yet context specific framework of analysing FDI determinants. To set the OLI in a specific context we account for the different sectors and countries where Greek companies have internationalised, as well as for the time period when investments have been made. We test whether there is a learning curve which makes later investors able to better manage riskier environments and hence better use their ownership advantage. We also test whether in time the significance of different ownership advantages changes, maybe as a result also of changes within the location advantages of the target countries.

Here we use three subsets of the several variables proposed by the eclectic framework, but at the same time the most representatives for multinational firms' motives (Dunning, 1993). The application of the OLI framework will allow us to discern differences in the internalisation decisions of firms engaging in investment activity. Although other forms of international expansion, such as trade, require the existence of 'L' and to some extent 'O' advantages it is clear that for a firm to get involved in FDI the combination of these advantages must lead to the maximisation of firm's profits compared to other alternative means of foreign market entry. Here we test the significance of ownership and location advantages for the MNEs' decision to invest abroad. The dependent variable is a dummy taking 1 for the existence of a foreign direct investment commitment and 0 for lack of foreign investment whilst the subsets of variables include firm specific variables, location-institutional variables, and finally, control variables capturing economic factors or the market's size.

Ownership advantages and the decision to internalise the market

The first set of independent variables captures the ownership advantages of the investing firms. Ownership advantages tend to compensate for the additional costs associated with setting up and operating abroad, costs which are not faced by domestic producers (Dunning, 1988 :2). We use total assets (logarithm) to account for 'Size', short term and long term debt over own capital as a measure of 'Leverage', profits over total sales to account for 'Profitability', research and development expenses over total sales to account for 'Research and development intensity', white collar salaries over total sales to account for 'Administration costs' and finally distribution costs over total sales to account for 'Distribution channels'. The data was collected from the annual reports of the companies listed at the Athens Exchange.

Size is an obvious 'transaction cost minimising 'O' advantage' (Dunning, 1993 :81) and tends to favour multinationality (Buckley & Pearce, 1979, Grubaugh, 1987, Horst, 1972, Juhl, 1979). Indeed, larger firms tend to service foreign markets through FDI rather than trade. However, according to Hoesch (1998) small, in employment terms, German firms tend to engage in FDI in the Central and Eastern European markets instead of entering developed European markets. It is likely that smaller firms lack the resources to invest in distant environments, hence preferring to internationalise in close proximity. We expect then that the larger the firms, the higher the probability of internalising the market.

R&D intensity also increases the probability of a firm expanding internationally. In high technology industries firms enter foreign markets to recover their costly R&D, prevent product obsolescence and gain market share (Tihanyi & Roath, 2002 :190). Through FDI, firms also tend to acquire new technologies (Shan & Song, 1997). We thus expect that a high R&D intensity will increase the probability of internalising the market.

Profitability also influences positively a firm's decision to invest, especially internationally. Profitable firms organise their activities more efficiently, but also create the resources necessary for the future expansion (Cantwell & Sanna-Randaccio, 1993). We thus expect that high profitability will increase the probability of internalising the market. On the contrary, the argument can operate in the opposite direction. More profitable firms would like to face less risk when investing abroad and thus might opt to invest in non-equity participation (Barbosa & Louri, 2002, Dimelis & Louri, 2002).

Multinationals usually are in a better position to raise capital, either domestically or internationally. This leads to financial assets advantages which reinforce multinationality (Dunning, 1993 :162). However, the investment decisions of MNEs may be restricted by creditors if the targeted country is perceived as too risky. Our sample primarily covers large Greek firms listed in

ASE. Although the absolute number of these firms is small, in comparison with the 3,500 Greek firms investing in the South East Europe (Bastian, 2004 :458), they account for almost 80% of the total volume of Greek FDI in the region (Bastian, 2004 :466, Kekic, 2005). These firms have different capabilities when raising capital and thus we expect that a higher level of leverage might have an ambiguous effect on FDI decision.

Finally, administration and distribution costs fall under the category of economies of common governance and scope. Both can influence the probability that firms internationalise. Using variables capturing the organisation of the multinational group, Caves (1996) provided support for the significance of the impact of firm related variables on investment decisions. The high administration costs (Penrose, 1956, and 1959) may suggest that the firm's expansion is directly linked with its managerial resources, conforming to the resource based view of the firm. Furthermore, the higher the quality of the distribution channels of a firm, the easier to invest directly, hence the higher the probability of engaging in FDI activity. This quality captures the existence of an advanced network of knowledge flows that adds to the firm's experience. The firm can then capitalise on that and enter international markets through FDI, without the use of a local partner. This argument again implies that the firm follows an internationalisation process as the one described by Uppsala School of Thought (Johanson & Vahlne, 1977).

Location-institutional advantages and the decision to internalise the market

The second set of factors within the OLI that this paper examines captures institutional aspects of the host environment. Poor institutions increase search, negotiation and enforcement costs, thus hindering the establishment of new business relationships and the initiation of new transactions (Antal- Mokos, 1998, Meyer, 2001). However, Pournarakis and Varsakelis (2004) find that institutions alone do not contribute substantially to explaining the cross-country variation of FDI-inflows. Instead, they argue that FDI decisions require simultaneous improvements in markets and institutions. Increasingly FDI is undertaken not to exploit existing resources but by increasing resources and capabilities through the interaction with diverse locations (Bevan, Estrin, & Meyer, 2004 :45). As a result, investors prefer locations where the institutional framework facilitates the development of their firm-specific advantages, thus creating new challenges for both multinationals and public policy (Rugman & Verbeke, 2001).

In our model we use institutional variables which reflect the level of corruption ('Corruption'), the degree of enforcement of the law ('RuleofLaw'), the reduction of the bureaucratic burden ('BureaucraticQuality'), the level of ethnic tensions within a country ('EthnicTensions') and the existence of expropriation risk ('ExpropriationRisk') as provided by

IRIS (2005). This data is in the form of indicators ranging from 1 to 6 with higher values representing less risk or better quality. Our variables capture many aspects of an aggregate country risk but at the same time allow for differences in the O, L and I advantages to arise. For example whilst for FDI decisions expropriation risk, or the possibility of expropriation, might be an important factor, for licensing or franchising the most important variable might be the application of rule of law. A combination of these variables can highlight the different aspects of investment motivations.

The literature on the relationship between FDI and corruption usually finds inconclusive evidence. Pournarakis and Varsakelis (2004) find that countries that have a more equitable system of rule of law, lower corruption levels and more freedom in economic activity attracted more FDI than countries that are characterised by significant deficiencies. Wei (2000) also found a negative relation with a sample dominated by OECD countries while Hines (1995) failed to find a negative correlation between corruption and total FDI. However, Wheeler and Mody (1992) found inconclusive evidence about corruption and US FDI. Here we expect that higher levels of corruption will decrease the probability of engaging in FDI activity.

Legal instability and bureaucratic and administrative barriers also deter investors (OECD, 1994). According to a World Bank survey (2005), the low 'confidence in the judiciary system' is identified as a major obstacle for business, especially in countries lagging behind in terms of political and economic reforms. We thus expect that high levels of rule of law will increase the probability of FDI.

The present analysis also builds on Adam and Filippaios (2006) who use the IRIS measure of the quality of the local bureaucracy and conclude that higher levels of bureaucratic quality enhance FDI, especially in non-OECD countries as compared to OECD countries. Their results demonstrate the significant impact of an advanced and established bureaucratic that ensures the continuity of the state, especially in developing or transitional economies. Here we expect that bureaucratic quality will increase the probability of doing FDI. Since 1990s, some of the CESEE have experienced not only political and legal instability, but also civil disorder and war as a result of ethnic tensions. If investors seek to minimise the risk, then they would avoid locations with high ethnic tensions. Here, we expect that ethnic tensions will decrease the probability investing in those markets.

Finally, according to Bevan and Estrin (2004) expropriation risk should be used as a risk related variable instead of the country sovereign risk which is more appropriate for portfolio investments. In a study of determinants of US FDI in developing and developed countries for 1989-1997, Adam and Filippaios (2006) found that lower levels of expropriation enhance FDI, especially

in non-OECD countries as compared to OECD countries. We incorporate in our model a similar variable and expect that a high expropriation risk will decrease the probability of undertaking FDI.

Control variables-market size variables

Finally, we use two control variables -‘Market Size’ and ‘Openness’- which set the OLI in the context of market or efficiency seeking investors. As part of location advantages, market size variables are consistent with Dunning’s (1993) typology of FDI motivations. The direct relationships between a country’s market size and FDI is the most widely tested hypothesis in previous studies of FDI determinants (Barrell & Pain, 1999, Barrell & Pain, 1997, Bevan & Estrin, 2004, Bevan, Estrin, & Meyer, 2004, Culem, 1988, Wheeler & Mody, 1992). Market seeking investors are attracted by high levels of GDP of the host country. Furthermore, larger host markets are more appealing to potential investors as economies of scale are more likely to be captured in local production (Amiti, 1998, Krugman, 1979). Hence, market size will increase the probability of investing directly into the country. Openness of the economy as defined by exports plus imports over the total country’s trade could be either substituting or complementing for FDI (Markusen, 1984, Torstensson, 1998). This variable describes the competitiveness position of country in terms of international trade and exposure. High level of competitiveness accompanied by price advantages can attract FDI aiming at wider markets than the host country itself. Hence, openness of the local economy will increase the probability of investing directly into that market. An overview of all variables is presented in Table 1, together with the relevant sources of information.

Insert Table 1 here

4. Sample and data description and methodology

Our full sample consists of one hundred and seventy seven (177) manufacturing firms enlisted in the ASE, both domestic companies and subsidiaries of MNEs. We use both these categories in order to capture the importance of Greece as a source of outwards investment but also the extent to which multinationals use Greece as a regional centre in Central and South Eastern Europe. We excluded from our sample firms active in banking and financial intermediation, as their motives for international expansion might be different than those for manufacturing firms. The firms included in this study are the most active ones in both domestic and international investment activity and represent a significant part of the Greek manufacturing industry. We investigated the firms’ investment activities for six years, i.e. 1994 to 1999 (inclusive). The investigation was based on the Official Daily Report of ASE which contains information on all enlisted firms’ actions and on the Annual Reports of the firms. The process of collecting the data and the relevant information was a

lengthy one as the daily hard copies of the official daily report had to be scanned for international investment announcements. This means that this study covers more than 1200 issues of the daily report. Although one of the criticisms of this study might be the time span of the investigation, this is representative of the process that a small open and peripheral economy as Greece went through in order to become a regional player primarily in South-Eastern Europe.

From our full sample, almost one fifth (33 out of 177) of the firms engaged in investment activities internationally. A total of seventy two (72) investment announcements took place over the period under examination. Some announcements were made in the same month and were treated as separate events. Also, the decision to invest in two or more countries at the same time was treated as different events. The host countries of those seventy two foreign direct investments cover twenty six developing, developed and transition economies. This study is part of a research project investigating the behaviour of Greek firms enlisted in ASE when investing abroad. Previous studies (Demos et al., 2004) examined the effect of an announcement on the firms' stock market valuation. It was evident that multinationality overall has a positive effect on the stock market valuation of the firm. This study complements the previous findings by investigating the underlying factors that drive Greek firms to expand abroad. In that respect, our main dependent variable is the firm's decision to engage in an international investment. In some cases a firm or firms do not undertake any kind of investment activity for the whole period under investigation but those firms are included in the sample as a benchmark. The dependent variable in this study is similar to the one used by Duran and Ubeda (2001) as it measures the intention to invest abroad in a specific time and not the actual investment. There is though a significant difference between the two studies. Whilst Duran and Ubeda (2001) in their study measure the intention to invest abroad using questionnaires distributed to potential international investors, in our case an announcement corresponds to a public declaration on behalf of the firm, published in the daily report of ASE. This gives to the announcement a binding characteristic towards the eventual implementation.

Table 2 presents the investment pattern of our firms' sample by host region⁷ and period. While some early destinations such as India, Switzerland and Syria have been abandoned, there is a clear trend of increased investment activity towards the late nineties. By then, many of the transition economies had implemented political, economic and institutional reforms and liberalised their trade. On the other hand, the Greek economy had experienced continuous and increasing economic growth (Eurostat, 2005). Geographical proximity and the existence of other social and economic links play an important role in our analysis. Two thirds of investments were made in Central, Southern and Eastern European transition economies with only 20% in developed countries

⁷ CESEEC includes Albania, Bulgaria, FYROM, Georgia Republic, Hungary, Moldova, Poland, Romania, Russia, Ukraine, Serbia and Montenegro. Europe includes Portugal, Belgium, France, Germany, Spain, United Kingdom, Switzerland. The Group 'Other' includes China, Egypt, India, Liberia, Nigeria, Syria.

and 12% in developing ones. In particular, Romania, Bulgaria and FYROM attract the majority of Greek FDI. This pattern is consistent with the total Greek outward FDI as Greece is becoming a regional player (WIIW, 2005). A Chi-square test was used to test whether a statistical significant relationship exists between the host region and the time period in which the investment takes place. Our result is not significant, indicating that the country of the investment is not statistically associated with the actual timing of the investment.

Insert Table 2 here

‘Food and drink’ and ‘Metals’, two traditional industrial sectors, account for almost half of the events in foreign and domestic investments. ‘Textiles’, ‘Flour Mills’ and ‘Packaging’ are also quite popular. Furthermore, not only traditional but also high-technology sectors such as ‘Chemicals’, ‘Informatics’ and ‘Pharmaceuticals and Cosmetics’ expand abroad. This can be a reflection of competitive advantages of both Greece and the respective host economies. Again a Chi-square test was implemented to test the existence of and statistical significant relationship between the sectoral participation of the mother company and the time of the investment but the test failed to support the hypothesis that the two characteristics are related.

Insert Table 3 here

Finally, we report in Table 4 the relationship between the host region and the sectoral participation of the mother company⁸. Low technology sectors invest primarily in CESEE and Europe whilst high technology sectors are primarily investing in USA. This relationship can be attributed to asset exploiting FDI behaviour in CESEE countries and asset augmenting FDI in developed countries as the USA. This behaviour is typical for MNEs coming from small open economies like Greece (UNCTAD, 2005). A Chi-square test was used to test the significance of this relationship and it verified that the sectoral participation is related, in a statistically significant way, with the location of the investments.

Insert Tables 4 and 5 here

Our preliminary findings require further investigation and we thus decided to examine the determinants of the firm’s decision to invest abroad. The dependent variable is a dichotomous

⁸ High technology sectors include ‘Chemicals’, ‘Informatics’, ‘Pharmaceuticals & Cosmetics’. Low technology sectors include ‘Construction Materials’, ‘Flour Mills’, ‘Food & Drink’, ‘Holding’, ‘Metals’, ‘Packaging’, ‘Textiles’ and ‘Various’.

discrete variable taking values 0 for firms and periods where there is no international investment activity and 1 for firms and periods where an international investment is observed. We use a Logit maximum likelihood estimation method, similar to the one proposed by Ladd (1966).⁹ We always report the Log-Likelihood, the Wald Chi-square and the Akaike information Criterion of the model as the most representative alternative ways to measure the explanatory power of the model. Because of the context specificity of the eclectic paradigm we estimated several models with different types of dummy capturing different sectoral groups of companies, developed and developing countries as well as progress in time allowing thus for time specific effects.

5. Empirical analysis and results

Table 5 presents the results of our estimations which test the significance of firms' ownership characteristics and institutional characteristics in determining investment decisions. A positive sign indicates that the variable under investigation increases the probability of engaging in international investment activity whilst a negative sign on the other hand means that the variable can be interpreted as an obstacle towards foreign expansion.

It is necessary to clarify that as the eclectic framework is context specific the individual factors in a model cannot be discussed in an isolated way but rather one has to discuss them within the specific context and taking into consideration the overall performance of the model. As we mentioned earlier we also include in our models firm and investment specific dummy variables to capture differences between high and low tech sectors, investments in specific geographical regions, i.e. developed countries and CESEE as well as timing of the investment, i.e. investments that took place in the early years of our sample or later on.

Among the ownership advantages, only one is consistently statistically significant, irrespectively of the model specification. Distribution channels are consistently significant and positive. They capture the firm's commitment to the host market through links with suppliers or buyers in the local economy. The existence of those channels can enhance the firm's knowledge of the local market and environment and this minimises the investment risk. The positive and statistically significant sign can also have a more in-depth interpretation consistent with an efficient seeking motivation. Greek firms internalise the distribution of products to allow them to reduce risk and efficiently service the markets which is their primary motivation.

Another variable that consistently appears positive and significant is the size of the firm. Consistent with the international business literature, this variable captures the availability of resources, human, financial or even technological and thus we expected a positive relationship with

⁹ For a detailed discussion on multinomial models see Maddala, G.S. (1997). *Limited-Dependent and Qualitative Variables in Econometrics*. Cambridge: Cambridge University Press.

the probability to invest internationally. The only case where size is not significant is model 7 but this is a special case that we will discuss later on.

The two opposite signs for the market size and the openness of the economy, negative and positive respectively, remain consistent across all our estimations and show that the primary motivation of Greek firms is not a market-seeking one but rather an efficiency-seeking. Greek investors are not attracted by the size of the market but from the country's openness to import and export goods. Although this result might contradict previous studies on the region (Brada, Kutan, & Yigit, 2006, Kekic, 2005) should be read with the specific context in mind. Large market size might also imply a significant competition pressure and Greek firms have the advantage when they operate in similar markets to the Greek one, i.e. small open economies.

On the other hand, institutional variables also influence significantly the firm's decision to expand internationally. Corruption affects negatively the decision to expand abroad. Higher levels of corruption do imply higher transaction costs when entering a new economy and thus reduce the probability of investment. The opposite effect is revealed for the variables that actually reduce transaction costs, i.e. rule of law and bureaucratic quality. A stable and well regulated legal environment, where the enforcement and monitoring of contracts happens in an efficient way, as well as the existence of a bureaucracy that facilitates the transition between different governments and secures the continuity of the state do increase the probability of investment. Finally, the two variables that capture the overall stability of the environment, as measured by the existence of ethnic tensions and the expropriation risk do have a positive effect on firm's decision to invest internationally. In a relevant study, Desbordes (2007) points out that investors' market seeking behaviour is not significantly influenced by risk. On the other hand, Greek investors do prefer safe environments with stable governments when investing abroad. It has to be mentioned though that Greek firms are relatively smaller than their European counterparts. In this case especially the institutional environment's characteristics can have a significant effect on their operations and decisions (Vachani, 2005).

Estimations one to four (1-4) demonstrate the need to examine the effects of the eclectic paradigm in a holistic empirical framework. The inclusion of the country dummy variables does not change the results, reinforcing our decision to include country specific variables that capture the economic and institutional environment. The addition of a sector R&D dummy in model 2 demonstrates that the R&D intensity is only important for high tech sectors. If you account for that then the R&D intensity becomes insignificant, keeping though its positive sign. For low tech firms, thus, even if they are heavily R&D intensive this does not make a difference in their decision making process to invest abroad. It is also apparent from models 3 and 4 that the R&D intensity does not discriminate between the developed economies and the CESEE.

Model 6 provides a holistic picture. It accounts for sectoral differences as well as host country differences. When accounting for differences in sectors, then the difference between CESEE coefficient and that of the developed countries is higher. A possible explanation, as the coefficients represent the probability to invest abroad, is that the high technologically oriented Greek firms demonstrate a propensity to invest in the CESEE where they can exploit their home-based generated advantages. This result is consistent with Filippaios and Stoian (2006). Greek firms can exploit their R&D related competitive advantages better in countries with less developed characteristics than the local Greek market or even in countries where the local competition does not significantly rely on R&D generated advantages.

Model 7 represents a special case in our investigation. It is well known in the International Business literature that the international expansion of firms goes through a learning curve (Johanson & Vahlne, 1977). Model 7 accounts for the timing of the different investments and indirectly captures some aspects of this learning curve. The positive sign of the time dummy can be interpreted as the closer we get to the present day, the more probable is to invest abroad. The inclusion of time dummy turns our variables capturing especially the firm's ownership advantages to become less significant and to not differentiate between different markets. This result mirrors the 'evolutionary theory' of the firm that adapts its behaviour through innovation and selection.¹⁰

In time, even small firms may decide to grow by internationalising in these markets. The risks are more manageable and the firms may have learned from other companies. One interesting aspect of our results though is the positive and statistically significant sign of the administrative costs. This captures what Edith Penrose (1956) discussed in *The Growth of the Firm*. Whereas a firm undergoes significant expansion, the managerial team and its capabilities should grow at the same time.

Coming to the external environment of the firm, as captured by the economic and institutional factors, there is also learning curve, at the end of which companies can deal with various environments: ethnic and expropriation risk lose their significance¹¹. Rule of law is also not significant possibly as a result of the already established links within the local economy. Finally, the sectoral participation of the firm does not play a significant role and the increased corruption appears to lose its significance. However, in time it appears that decisions to expand abroad are not necessarily made by profitable firms or indeed firms with high R&D intensity, leading to the conclusion that their impact on upgrading the location advantages of the target country may not be significantly positive.

¹⁰ For a recent review see Holzl, W. (2005). The evolutionary theory of the firm: routines, complexity and change. *Wirtschaftsuniv, Working Papers Series*(46). (2005).

¹¹ This effect can also maybe attributed to the diminishing risks as a result of reforms, especially in CESEE.

6. Conclusion and further research

Previous research has demonstrated that managers should investigate carefully the institutional environment of the country before deciding to internationalise (Trevino & Mixon, 2004 :241) while governments should improve the institutional framework of the country. A very recent and influential contribution belongs to Dunning (2004) who discusses extensively the role of institutional infrastructure in upgrading the pull factors determining the competitive advantages of countries and regions, examining the European transition economies. The main aim of the paper was to investigate Dunning's Eclectic paradigm using a holistic yet context specific empirical framework, that of Greek international investments.

Our model not only captures firm specific ownership advantages and locational economic advantages but also brings the institutional environment into the discussion. Our results show that factors such as profitability do not necessarily affect the decision to invest abroad, whilst the effect of the R&D intensity is related to the sector and the country. An important factor in increasing the propensity of investing abroad is the building of distribution channels in the host economy.

The expansion of Greek firms occurs primarily in similar countries with small market size, and open economies. Rule of law and high bureaucratic quality remain essential for the firm's decision whereas the existence of high corruption act as a deterrent. This does not conform with Filippaios and Stoian (2006) who found Greek investors more likely to invest in countries with high corruption as a result of cultural proximity. This difference may result from the different groupings of countries used in these studies and from the heterogeneity of the South-Eastern European group of countries in terms both of corruption and other institutional risks taken in consideration. It is likely that whilst Greek investors do not generally feel deterred by corruption, there is, however, a threshold beyond which corrupted environments act as a deterrent nevertheless.

A significant finding is that of the existence of a learning curve in the Greek firms' international expansion. In this case, where a learning curve exists, bureaucratic quality is important, as it proves to be resilient in time. The other location advantages, though, lose their appeal. Countries should ensure that they put in place an established mechanism for recruiting and training public servants, with autonomy from political pressure so that legislative and institutional stability is ensured across governments. Bureaucratic quality appears to be the most resilient location advantage that Greek investors need in order to invest abroad. Further trade liberalisation increases the openness of the economy and that appears to be essential, as Greek based MNEs tend to use the host countries as regional headquarters.

Several limitations must be noted for this study, leading to avenues of further investigation. First, the period of time can be expanded to include the years between 2000 and 2005 which have shown considerable progress in institutional reforms, particularly in the Balkans. This is a

challenging task as the collection of relevant information is time consuming and thus could be the basis of another series of papers. Second, other economic variables could be included to account for efficiency seeking motives by foreign investors. Researchers are really constrained by the availability of reliable data sources and this is the case for variables measuring the unit labour costs or the existence of properly organised trade unions. Third, interaction variables may be included to capture the interplay between ownership and location advantages within a dynamic OLI (Cantwell & Narula, 2001). This research can then be followed by studies of the outward investment patterns by emerging economies such as Hungary, India or China.

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Table 1. Variable Description

		Description	Source
Dependent variable	Foreign Direct Investment Decision	Dummy variable taking the value 1 when foreign investment occurs and 0 when it does not.	Author's design
Firm Variables	Size	Logarithm of Total Assets	Annual Reports of Firms enlisted in Athens Stock Exchange (1991 – 1999) and Authors' Calculations
	Leverage (Debt)	Short and Long Term Debt over Own Capital	As above
	Profitability	Profits over Total Sales	As above
	R&DIntensity	Research and Development Expenses over Total Sales	As above
	AdministrationCosts	White Collar Salaries over Total Sales	As above
	DistributionChannels	Distribution Costs over Total sales	As above
Location Economic Variables	MarketSize	Real GDP in constant dollars (expressed in international prices, base 1985.)	World Table (Mark 5.6)
	Openness	(Exports + Imports)/Nominal GDP	As above
Location Institutional Variables	Corruption	Lower scores indicate "high government officials are likely to demand special payments" and that "illegal payments are generally expected throughout lower levels of government" in the form of "bribes connected with import and export licenses, exchange controls, tax assessment, police protection, or loans." Values 0-6	IRIS-3 File of International Country Risk Guide (ICRG) Data
	RuleofLaw	This variable "reflects the degree to which the citizens of a country are willing to accept the established institutions to make and implement laws and adjudicate disputes." Higher scores indicate: "sound political institutions, a strong court system, and provisions for an orderly succession of power." Lower scores indicate: "a tradition of depending on physical force or illegal means to settle claims." Upon changes in government new leaders "may be less likely to accept the obligations of the previous regime." Values 0-6	As above
	BureaucraticQuality	High scores indicate "an established mechanism for recruitment and training," "autonomy from political pressure," and "strength and expertise to govern without drastic changes in policy or interruptions in government services" when governments change. Values 0-10	As above
	EthnicTensions	This variable "measures the degree of tension within a country attributable to racial, nationality, or language divisions. Lower ratings are given to countries where racial and nationality tensions are high because opposing groups are intolerant and unwilling to compromise. Higher ratings are given to countries where tensions are minimal, even though such differences may still exist." Values 0-10	As above
	ExpropriationRisk	This variables evaluates the risk "outright confiscation and forced nationalization" of property. Lower ratings "are given to countries where expropriation of private foreign investment is a likely event." Values 0-10	As above

Table 2. Foreign Investments by host region and time

Host Region/Time	1994	1995	1996	1997	1998	1999	Total
CESEE	5.6%	9.7%	8.3%	8.3%	20.8%	11.1%	63.9%
Europe	1.4%	1.4%	2.8%	1.4%	9.7%	1.4%	18.1%
USA	0.0%	0.0%	0.0%	1.4%	2.8%	1.4%	5.6%
Other	1.4%	1.4%	2.8%	1.4%	4.2%	1.4%	12.5%
Total	8.3%	12.5%	13.9%	12.5%	37.5%	15.3%	100.0%
Chi-Square							5.67

Table 3. Foreign Investments by sector of participation of mother company and time

Sector/Time	1994	1995	1996	1997	1998	1999	Total
Chemicals	0.0%	2.8%	1.4%	0.0%	1.4%	1.4%	6.9%
Construction Materials	0.0%	0.0%	0.0%	0.0%	2.8%	2.8%	5.6%
Flour Mills	0.0%	0.0%	0.0%	2.8%	4.2%	1.4%	8.3%
Food & Drink	2.8%	5.6%	6.9%	2.8%	9.7%	2.8%	30.6%
Holding	0.0%	0.0%	0.0%	0.0%	2.8%	0.0%	2.8%
Informatics	0.0%	0.0%	0.0%	0.0%	0.0%	1.4%	1.4%
Metals	4.2%	0.0%	1.4%	2.8%	4.2%	2.8%	15.3%
Packaging	0.0%	1.4%	0.0%	2.8%	2.8%	2.8%	9.7%
Pharmaceuticals & Cosmetics	1.4%	0.0%	2.8%	1.4%	1.4%	0.0%	6.9%
Textiles	0.0%	2.8%	1.4%	0.0%	4.2%	0.0%	8.3%
Various	0.0%	0.0%	0.0%	0.0%	4.2%	0.0%	4.2%
Total	8.3%	12.5%	13.9%	12.5%	37.5%	15.3%	100.0%
Chi-Square							51.71

Table 4. Foreign Investments by host region and sectoral participation of the mother company

Host region/Sector	Low Technology	High Technology	Total
CESEE	58.3%	5.6%	63.9%
Europe	16.7%	1.4%	18.1%
USA	1.4%	4.2%	5.6%
Other	8.3%	4.2%	12.5%
Total	84.7%	15.3%	100.0%
Chi-Square			15.40***

Table 5. Logit estimation with robust standard errors. Dependent Variable: Foreign Direct Investment equals 1.

	1	2	3	4	5	6	7
Variable							
Size	1.390*** (0.385)	1.247*** (0.373)	1.392*** (0.389)	1.394*** (0.360)	1.174*** (0.365)	1.098*** (0.395)	0.399 (0.271)
Leverage	-0.006 (0.131)	-0.037 (0.113)	-0.015 (0.123)	0.035 (0.155)	0.020 (0.109)	0.013 (0.104)	-0.158* (0.082)
Profitability	0.006 (0.008)	0.008 (0.007)	0.006 (0.008)	0.006 (0.009)	0.004 (0.009)	0.006 (0.008)	-0.256 (0.215)
R&DIntensity	15.071* (8.823)	3.723 (9.228)	17.076* (9.321)	2.205 (9.539)	1.252 (13.309)	-9.406 (20.274)	-15.234 (44.902)
AdministrationCosts	-0.245 (0.156)	-0.223 (0.159)	-0.251 (0.158)	-0.232* (0.125)	-0.184 (0.124)	-0.183 (0.125)	0.202*** (0.074)
DistributionChannels	6.803*** (1.115)	6.370*** (1.175)	7.022*** (1.172)	5.982*** (1.919)	7.408*** (2.621)	7.004*** (2.546)	16.521*** (2.163)
MarketSize	-0.678*** (0.232)	-0.644*** (0.237)	-0.695*** (0.246)	-0.672*** (0.243)	-0.800** (0.325)	-0.801** (0.312)	-4.071*** (0.493)
Openness	0.357*** (0.138)	0.364** (0.147)	0.369** (0.147)	0.339** (0.141)	0.439** (0.185)	0.455** (0.182)	0.853** (0.368)
Corruption	-7.164*** (2.779)	-7.104** (2.761)	-7.514** (3.146)	-6.275** (2.559)	-7.143* (3.980)	-7.172* (3.812)	-18.471 (11.576)
RuleofLaw	3.311* (1.769)	3.175* (1.782)	3.503* (1.884)	3.338* (1.863)	5.469* (3.064)	5.636* (3.047)	6.648 (9.589)
BureaucraticQuality	2.904** (1.396)	2.878** (1.295)	3.188* (1.712)	2.081** (0.991)	2.832* (1.549)	2.778** (1.379)	8.825*** (3.063)
EthnicTensions	2.494* (1.443)	2.521* (1.510)	2.612* (1.455)	2.355* (1.278)	3.812* (2.089)	3.838* (2.119)	-0.513 (7.406)
ExpropriationRisk	3.524* (1.878)	3.536* (1.987)	3.670* (2.022)	3.475* (1.913)	5.478* (3.099)	5.601* (3.065)	12.302 (15.589)
HighTechSEC		1.073 (0.870)				0.852 (0.748)	0.043 (1.402)
Developed			-0.614 (1.253)		-10.390*** (3.957)	-10.988*** (4.205)	-27.778 (49.799)
CEESEE				-1.858** (0.817)	-9.961** (4.174)	-10.545** (4.497)	-25.324 (47.489)
Time							0.142*** (0.054)
N	1275	1275	1275	1275	1275	1275	1275
Log-likelihood	-29.173	-28.662	-29.090	-27.496	-22.634	-22.429	-11.775
Wald Chi2	264.720	296.395	269.824	210.313	320.961	346.539	406.307
Akaike's Info	84.346	85.324	86.179	82.993	75.268	76.859	57.550

Standard errors in parenthesis

*** significant at 1%

** significant at 5%

* significant at 10%

