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**Barriers to enterprise development in the Caribbean**

Stephen Drinkwater (corresponding author)

Business School

University of Roehampton, London

[Stephen.Drinkwater@roehampton.ac.uk](mailto:Stephen.Drinkwater@roehampton.ac.uk)

Jonathan Lashley

Sir Arthur Lewis Institute of Social and Economic Studies (SALISES)

The University of the West Indies, Cave Hill Campus, Barbados

[jlashley@caribsurf.com](mailto:jlashley@caribsurf.com)

Catherine Robinson

Kent Business School

University of Kent, Medway

[C.Robinson-501@kent.ac.uk](mailto:C.Robinson-501@kent.ac.uk)

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## **Abstract**

Caribbean<sup>1</sup> economies have suffered from stagnant growth since the 1990s. This can be a feature of small developing economies and is a major concern for policy-makers. In this paper, we examine establishment-level data to gain a better understanding of the factors that constrain the growth of businesses in the region. In addition to documenting broad differences in obstacles to business within and across the region, we particularly focus on the main obstacles affecting small and medium-sized firms. The econometric analysis highlights three main barriers at a regional level: an inadequately educated workforce; access to finance; and crime, theft and disorder. However, there are variations at the country level and the analysis indicates clusters of countries that experience obstacles to similar degrees. The paper concludes with recommendations for alleviating the constraints to enterprise development and in stimulating economic growth.

**Keywords:** enterprise development; SMEs; Caribbean; business environment; barriers to growth; ordered probit regressions.

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<sup>1</sup> Caribbean refers here to the following independent English-speaking countries (country abbreviations): The Bahamas (BAH); Barbados (BAR); Belize (BEL); Guyana (GUY); Jamaica (JAM); Trinidad and Tobago (TNT); and six member countries of the Organisation of Eastern Caribbean States (OECS): Antigua and Barbuda (ANT); Dominica (DOM); Grenada (GRN); St. Kitts and Nevis (SKN); St. Lucia (SLU); St. Vincent and the Grenadines (SVG).

## **Introduction**

The economic stagnation of the Caribbean has long been a concern for policy-makers (Ruprah, Melgarejo, and Sierra 2014, Girvan 2010, Mandle 2010). While economy size is often identified as a binding constraint, other small economies have experienced higher growth rates than the Caribbean. A variety of reasons have been put forward to explain the Caribbean's growth sclerosis (Ruprah, Melgarejo, and Sierra 2014). These include lower productivity and competitiveness, weak institutions, a weak private sector, adverse macroeconomic conditions, greater exposure to natural disasters, close linkages with other stagnant economies and greater vulnerability to economic shocks. In this paper, we focus on barriers to the development of the private sectors in the Caribbean, which are likely to be key drivers of future growth in the region and relate to many of the factors that have been mentioned above.

Despite the historical prominence and dominance of large firms in terms of economic growth (Prais 1976), the past few decades have seen a rise in the importance placed on smaller enterprises, as traditional growth models have given way to more industrial, endogenous and evolutionary growth models (Wennekers and Thurik 1999). The global shift to a belief that '*small is beautiful*' (Dunning 1995, 470) has been attributed to an erosion of scale-friendly production advantages due to modernisations of production methods, technological advances, more demanding consumers and the growth of services. However, this is not a process that is characteristic of the development of Caribbean enterprises. In the Caribbean, small enterprises represent the majority of economic activity, which is not due to a shift related to modernisation or technological advancement, but a stasis, where historically

enterprises were small, and continue to be small (Ruprah, Melgarejo, and Sierra 2014, Caribbean Development Bank 2016).

Notwithstanding the Caribbean experience, small and medium sized-enterprises (SMEs) are regarded as important in emerging economies. It has been estimated that they contribute around a third of GDP and around 45% of employment<sup>2</sup> (World Bank 2016). Regardless of the stage of development of a nation, SMEs are viewed as instrumental in job creation, accounting for 99% of business units in European economies<sup>3</sup> and around 85% of new jobs in the EU in the last five years<sup>4</sup>. In reality, the role of SMEs in the job-creating process appears to be more nuanced than macro-level data reveal; young SMEs make a significant contribution to job creation, but older SMEs often have a negative effect (Criscuolo, Gal, and Menon 2014). In the Caribbean, research has indicated that the average enterprise is smaller and older<sup>5</sup> than in other small economies (Ruprah, Melgarejo, and Sierra 2014),

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<sup>2</sup> Caribbean Development Bank (2016) provides broad estimates of SMEs' (including micro enterprises) contribution to Caribbean economies of approximately 50% of employment and between 60% and 70% of GDP. Specific figures from Barbados Small Business Association (2016) estimated that in Barbados SMEs accounted for 60.7% of private sector employment and 47.6% of total employment in 2015. Contribution to GDP for non-agricultural SMEs was estimated at 64.1%, while SMEs accounted for 96.3% of enterprises in the country.

<sup>3</sup> <http://ec.europa.eu/growth/smes/>

<sup>4</sup> These figures however relate to definitions of small and medium enterprises that are much larger than those used in the Caribbean (less than 250 employees in the EU and less than 100 in the Caribbean) and hence any comparison should be treated with caution.

<sup>5</sup> Ruprah, Melgarejo, and Sierra (2014, 30) indicate that '*...almost three-quarters of Caribbean firms are small [less than 20 permanent full-time employees] compared to only two-thirds of ROSE [rest of small economies]*'.

suggesting that SMEs in the Caribbean region have had a more limited role in job creation.

Globally, SMEs are thought to drive growth because they are seen as forward-looking, flexible and innovative, and collectively employ a large proportion of the workforce (Thurik and Wennekers 2004, Stel, Carree, and Thurik 2005, Dunning 1995). This is particularly the case in economies that are in transition, where new ideas and new ways of doing things are instrumental in causing technical change through the Schumpeterian notion of ‘creative destruction’ (Hébert and Link 1989). In such a context, resources are reallocated from failing, unproductive firms to new, more productive firms with better ways of doing business. However, business start-ups and other small enterprises can only reach their full potential in supportive, nurturing environments.

In this paper, we analyse the barriers to enterprise development across the Caribbean using the most recent microdata for the region. This information is taken from the Compete Caribbean’s Productivity Technology Innovation in the Caribbean programme (PROTEqIN) survey, which contains over 1800 firms. Our findings indicate that the most significant barriers are an inadequately educated workforce, limited access to finance, and high levels of crime, theft and disorder. These barriers are found to be pervasive, with minor differences observed in their severity in relation to size, sector, age or the gender structure of ownership. The main area where significant differences are seen is at the country level, where clusters of countries are observed to share similar profiles with respect to the barriers.

The paper is structured as follows. The literature on barriers to enterprise development is briefly reviewed in the next section. A background to the Caribbean economies as small island developing states (SIDS) is then presented, followed by an

overview of the data and methods that have been applied. The empirical findings from the econometric analysis are then discussed. The paper concludes with a discussion of the main results and their policy implications.

### **Barriers to enterprise development**

Enterprise development is governed by factors at several levels, from the prevailing global ideology to the nature and character of the individual entrepreneur. Vargas (2015) argues that while a range of factors affect enterprise development, only the binding constraints matter. These, he argues, are likely to differ according to the size of the firm. The definition of a SME may vary over time and country conditions but are traditionally defined in terms of employment numbers and turnover levels. An accepted European definition is that SMEs are firms that employ less than 250 employees (Loecher 2000) but in South Africa they are defined as those firms with under 200 employees. In China, firms with under 500 employees are considered to be SMEs (Zheng, O'Neill, and Morrison 2009). Vargas (2015) identifies small firms as those between 5 and 19 employees in Bolivia, medium-sized firms as those with between 20 and 99 employees, and large firms as those with 100 or more employees. We utilise Vargas' (2015) definition in our analysis, which is in line with the World Bank's Enterprise Surveys.

Many studies on the characteristics of SMEs and determinants of growth have been conducted at the country level (Lee and Cowling 2015, Krasniqi 2007) and identify a number of well-established themes. However, very few studies have conducted cross-country comparisons. This is primarily due to the challenges of constructing comparable data across geographic boundaries. Bartelsman, Haltiwanger, and Scarpetta (2009) and Calvino, Criscuolo, and Menon (2015) are

notable exceptions, conducting cross country comparisons of enterprise level data for OECD countries, looking at a range of factors such as firm level characteristics, hazard rates of survival and business demographics. Calvino, Criscuolo, and Menon (2015) report strong country differences, suggesting ‘a lack of a one-size fits-all pattern’ (p.13). Characteristics of the SME offer some indication of the behaviour of firms but these can also be misleading. The relationship between firm growth, age and size in particular has been the subject of a large number of empirical analyses (cf. Coad 2009). Gibrat’s law, firm growth being independent of firm size, is relevant because barriers to growth are thought to vary over the size distribution of firms (Vargas 2015). Research by Storey (1994) and Schiffer and Weder (2001) reinforces the idea that barriers to growth fall disproportionately on smaller firms.

Bewley, Forth, and Robinson (2010) identify three broad areas that affect the success or failure of businesses more generally: inputs, internal factors and external factors. Inputs may be defined as factors of production such as financial capital, physical capital and an appropriately skilled labour force. If the quality of these factors is poor or barriers to acquisition high, this can hinder the productive capability of an organisation. Internal factors relate to the behaviour of the firms themselves – that is, for example, the extent to which innovation is undertaken, the market the firm operates in, their management practices, their age and size, and any changes to ownership or engagement in international markets. External factors can influence the prospects for growth, including in the extent to which firms engage in alliances and networks, the product market structure and the regulatory environment firms face, including both product and labour market regulations.

Vargas (2015) identifies four pervasive constraints to business growth, regardless of firm size: (1) corruption, (2) crime, theft and disorder, (3) informality



and (4) political instability. These relate to the external factors the firms face. For larger and medium-sized firms, constraints relate more to inputs in that electricity and transportation appear to represent significant obstacles. While for small firms, a different input, access to finance, tends to hinder growth. Olawale and Garwe (2010) use a Principal Component analytical approach to condense factors that affect growth in South African SMEs into 5 components. They label these as financial factors, market factors, economic factors, management factors and infrastructure factors. In an alternative classification of barriers connected to a developing country context, Fumo and Jabbour (2011) find that funding and competition were the barriers to which most firms referred in their sample of firms in Mozambique. Corruption, price fluctuations and a lack of clients were also identified as common barriers. Given these general classifications of barriers, the following subsections highlight the literature on specific barriers at the country and enterprise levels.

### **Country-level factors**

The institutional environment will have a significant influence on a firm's success in terms of survival and growth since this will depend upon an appropriate infrastructure being in place. The institutional environment is multifaceted, including the functioning of capital markets, access to energy, labour markets, education provision, levels of corruption and bureaucracy. Underdeveloped capital markets and poor educational development will hinder access to the resources required. Hay and Kamshad (1994) discuss growth inhibiting factors, focussing specifically on inputs to the firm. They identify access to qualified labour, the inadequate availability of finance and other forms of capital – such as venture capital – as well as delays in obtaining new capital as challenges to growth.

Krasniqi (2007) argues that the business environment is multi-dimensional. Firms in nations with higher levels of corruption, crime, theft and disorder, and political instability face additional challenges to business growth. In the case of South Africa, Omer et al. (2015) propose that an effective way of dealing with this barrier is to enter the international market via exporting. In this way, firms circumvent the corruption of domestic markets and are less affected by domestic barriers to growth.

As well as institutional integrity, firms are also likely to be affected by the regulatory environment. This is in part dependent on the internal capabilities of a firm - how well equipped they are to navigate the business licensing and tax systems - but partly external, insofar as these are appropriately developed in the country in which the business is operating. There are also structural factors such as electricity, telecommunications and transport, as well as appropriately skilled labour, all of which can affect a firms' ability to produce and trade effectively.

Energy is a fundamental input into any production process and is often a highly regulated sector but one that fundamentally affects economic growth (Ayres et al. 2013). As such, access to this market may challenge a firm's growth potential. Access may be affected by excessive regulation (now in the form of climate change policy) or disruption of, or poor access to, energy supplies. Firms may also be sensitive to volatile prices. Labour or skills constraints are often viewed in terms of lack of appropriately trained individuals and are thus seen as an infrastructure issue. To a large extent the skills shortage literature refers to knowledge barriers to innovation, rather than growth (Love and Roper 2015, Hessels and Parker 2013).

### **Enterprise level factors**

SMEs face ongoing challenges to their growth and development. Some factors appear to be pervasive, impacting on firms regardless of their country, others are more region

or environment specific. Entrepreneurs have themselves identified external factors, citing the intensity of competition as the biggest issue they face (Hay and Kamshad 1994). The competitive environment may not be, in and of itself, a market failure, rather this might be regarded as a manifestation of the lack of support for SMEs, felt most keenly at the start-up phase. However, Fumo and Jabbour (2011) point out that where there is a highly developed informal market, firms may face unfair competition.

SMEs appear to face challenges of access to finance across most countries. This is sometimes presented in terms of market failure, but firms with less of a proven track record of trading or firms with little collateral will struggle to access finance and will certainly pay a less favourable rate of interest compared to those that appear to be less risky firms. However, it is hard to establish how far is this a binding constraint on firm growth without the counterfactual. Experimental research undertaken by De Mel, McKenzie, and Woodruff (2008) explores the importance of finance to microenterprises in Sri Lanka through the random allocation of grants to firms and observing their subsequent performance, relative to those firms who did not receive support. They find that those receiving funds experience greater growth, of the order of around 5% return on additional capital per month, indicating that poorer access to finance does slow down the growth of SMEs. However, Banerjee, Karlan, and Zinman (2015) conclude that access to microcredit has modestly positive, but not transformative, effects based on six random evaluations across a range of research settings. Thus, there is no clear consensus on the strength of the financial constraint faced by SMEs in developing countries despite the widely held perception by enterprises that it is an important detrimental influence.

The nature of access to finance as a constraint is often interpreted differently, or measured quite generally. Beck et al. (2006) explore the various dimensions of finance as a source of growth constraint using the World Business Environment Survey. High interest rates and access to long term loans are found to be the dominant financial factors that challenge SMEs, while the corruption of bank officials is least important (Beck et al, 2006).

The Economist (2016) highlights the failures of banks to lend to entrepreneurs in Africa because of better, less risky opportunities for their finance; 'The easy profits from lending to the State also make banks lazy. Many do not bother to learn how to measure and manage the risks of lending to businesses when they can simply hold *government paper*' (p.48). Indeed, the competitiveness of the banking sector is instrumental in determining the opportunities available to all firms. Beck, Demirgüç-Kunt, and Maksimovic (2004) explore the role of the competitiveness of the banking sector and its effect on access to finance barriers faced by SME and large firms. They report that a more open and diverse banking sector can dampen the effect of financial obstacles, whereas government intervention and public ownership exacerbates such obstacles.

In reality, firms will face all these country and industry level challenges (and others) simultaneously and the firm's ability to deal with these will in part be determined by its internal capabilities. Empirical studies of the barriers to enterprise growth from less developed countries have identified a variety of constraints that can affect an enterprise, which are to some extent influenced by the characteristics of its CEO or senior workforce directly. Thus, factors such as gender, education, ethnicity and alternative opportunities have been identified as influencing the success of accessing finance (an internal capability rather than institutionally determined).

In terms of empirical evidence, Coad and Tamvada (2012) analyse a cross section of Indian firms between 2002 and 2003. They test for determinants of firm growth, analysing young and old as well as fast and slow growing SMEs. Female ownership is found to negatively affect growth, as is rural location and coal as a power source. In contrast, a non-conventional power source is a positive influence on firm growth, as is LPG. One of the most significant findings is that exporting has a strong and positive effect on firm growth in India. They also explore the barriers to growth declared by Indian firms experiencing a decline in output or employment. Using standard probit specifications for 8 of their key barriers identified<sup>6</sup>, they find that younger firms experience barriers of working capital and power shortages, whereas older firms experience barriers of a lack of demand and raw materials, market, labour and equipment problems. Small firms, by contrast, experience barriers of the lack of demand and equipment problems. Larger firms experience labour and market problems. Female-led SMEs experience barriers of raw materials and market problems. Exporters are more likely to experience equipment problems.

From the above discussion, it can be seen that SMEs represent a broad range of firms. They are pervasive across all sectors of the economy and as a consequence, it is difficult to generalise about their behaviour, in aggregate. When we consider the ‘dynamic SME’ there is an underlying assumption that small is broadly synonymous with young. However, in most countries there is a significant body of SMEs that are established with few growth ambitions. These firms are less likely to experience barriers in the same way as dynamic, growth-enhancing SMEs, simply because they are not actively pursuing growth. Indeed, a common theme of the high growth firm

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<sup>6</sup> Lack of demand, working capital, raw materials, power shortage, labour problems, market problems, equipment problems and management problems.

literature is that the majority of small firms do not grow rapidly, and those that do experience high growth, experience it in discrete episodes, rather than continuously (Mason, Robinson, and Bondibene 2014).

### **Profile of Caribbean economies and enterprises**

The twelve countries that comprise the English-speaking Caribbean are all categorised as SIDS, which are characterised by:

‘...small size, remoteness, narrow resource and export base, and exposure to global environmental challenges and external economic shocks’. (United Nations 2012, 34)

Population and GDP estimates for the Caribbean highlight the ‘smallness’ of the region. With an estimated population of 6.5 million in 2014, ranging from 54,900 in St. Kitts and Nevis to 2.7 million in Jamaica, and a total regional GDP in 2014 of US\$66.1 billion (current prices), the Caribbean in comparative terms is about 10% of the population and 2% of the GDP of the United Kingdom<sup>7</sup> (World Bank 2016). GDP per capita was on average US\$11,021 (current prices) in 2014, compared to the UK average of around US\$46,278 (World Bank 2016).

Table 1 highlights the dependence of the region on imports, which are valued at 54% of GDP, while exports represent only 40%. The region also has limited natural resources, with average rents from natural resources accounting for only 5% of GDP. Only Guyana (21.3%), Trinidad and Tobago (17.3%) and to a lesser degree Belize (6.3%) have any significant level of natural resource rents. With a limited natural resources and merchandise export base, the region is heavily reliant on tourism for

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<sup>7</sup> The comparison to the UK in the discussion is to set the context of the region against the colonial power from which it gained independence.

foreign exchange (Clayton, Karagiannis, and Bailey 2015). As also shown in Table 1, with the exception of Trinidad and Tobago and Guyana, international tourism receipts are significant; tourism accounts for between 33% of total exports in Belize and 64% in The Bahamas, averaging 42% for the region as a whole.

< INSERT TABLE 1 AROUND HERE >

The Caribbean is also vulnerable to global economic conditions, suffering considerably after the global financial crisis of 2008, from which it is yet to fully recover (Caribbean Development Bank 2017, 2016). Prior to the crisis, Caribbean economies experienced an average GDP growth rate of 3.5% between 2000 and 2006. The average growth rate was -3.0% in 2009, recovering to 1.4% in 2015. Growth is not expected to reach pre-crisis levels before 2021 (International Monetary Fund 2016). The growth effects of the crisis have however not been constant across the region, with the most severe declines at the peak of the crisis in 2009 seen in Antigua and Barbuda and Grenada.

With regards to Caribbean enterprises themselves, they are a product of a historical transition process from a plantation economy, through industrialization and independence starting in the 1960s, to the current period that is characterised by an increasingly globalized economy (Stewart 1994, Potter et al. 2004). Understanding the contemporary Caribbean enterprise requires an appreciation of Caribbean history, the role of the Caribbean as the ‘periphery’ required for capitalism to exist and grow (Stewart 1994), as well as the role played by race and ethnicity. The majority of the literature related to race, ethnicity and business in the Caribbean seeks to address the legacy of slavery and colonialism on the black/white distribution of businesses (Boxill 2003, Ryan 1994, Stewart 1994, Ryan and Barclay 1992, Nicholson and Lashley 2016). However, the different race/ethnicity profile of Guyana and Trinidad and

Tobago, where there is greater representation of East Indians, has led to an additional focus on this group in these countries (Ramsaran 1994, Danns and Mentore 1994). While the power dynamics operating between these three demographic groups (whites, blacks and East Indians) have dominated research in the area of race and ethnicity in the Caribbean, there are also extensive discussions regarding the roles of the Chinese, Syrian-Lebanese and Portuguese who migrated to the region (Ryan and Stewart 1994, Nicholson and Lashley 2016, Levy 2010). The overriding theme to emerge from these research streams is one of the dominance of the former white plantocracy and the mercantile class over the majority former slaves, leading to an underrepresentation of blacks in business in the region through a number of mechanisms including: suppression by the state and the traditional white business class as well as social psychological reasons (Boxill 2003).

At a broad level, Higman and Monteith (2010, 6) provide a contextual summary to assist in understanding Caribbean business history:

*'Imperial government made the rules encouraging and controlling enterprise...particularly through slavery, denying the full participation of the majority of the people in capitalist development. In this way, the business history of the West Indies can be understood as the internal history of capitalism and the taproot of imperialism.'*

At an aggregate level, the region transitioned from dependence on monoculture agriculture to a reliance on services, mostly tourism and international financial services following the period of independence (Potter et al. 2004). This was also a time of threats to the viability of its primary agricultural products (sugar and bananas), including the loss of preferential treatment by the European Union in the 1990s. While agriculture accounted for on average 19% of value added in 1980, in



2013 it only accounted for 7%, ranging from 0.6% in oil-rich Trinidad and Tobago to 19% in Guyana. The main shift in sectoral contributions is seen with services, where the average contribution was 58% in 1980, increasing to 70% in 2013 (World Bank, 2016).

In seeking to address structural shifts and the related consequences of unemployment and poverty in the mid-1990s, regional governments implemented a number of business support programmes to provide finance, technical assistance and training to micro and small enterprises; prior to this, the primary concentration was on the attraction of foreign investment (Potter et al. 2004, Caribbean Development Bank 2016). Despite these interventions, there was a failure to address deeper educational and socio-cultural issues, with limited impact on *'the practice of productive entrepreneurship'* (Lashley 2012, 84) and as a result, the current Caribbean enterprise is smaller and older than enterprises in other small economies (Ruprah, Melgarejo, and Sierra 2014). We now go on to identify the specific constraints at the micro-level which considered to hamper enterprise development and subsequently macroeconomic growth and development.

### **Data and methodology**

Specific microdata on enterprises in the Caribbean has been limited until recently. Attempts by the World Bank in 2010/2011 to conduct Enterprise Surveys in Latin America and the Caribbean (LACES) and the Compete Caribbean Productivity Technology Innovation in the Caribbean programme (PROTEqIN) in 2014 have sought to address this by producing surveys of non-agricultural enterprise in the

region<sup>8</sup>. As with many cross-sectional, cross-country studies, it is recognised that there are limitations including that surveys may not be fully representative of the entire range of enterprises. For example in the case of the PROTEqIN data, only information on formal enterprises that employ 5 or more people is provided. A further limitation is the implicit assumption that actual barriers equate to declared or perceived barriers. Utilising the World Bank Enterprise Survey (Wang 2016) explores the barriers to growth for developing countries, specifically discussing some of the potential problems with using such data. Wang (2016) concludes that such surveys offer valuable insights across countries that are consistent with theory. Moreover, these surveys provide an important perspective for the current context because if the region is to address its growth problems, these are the types of enterprises that will drive such change. This section briefly highlights the main characteristics of Caribbean enterprises in the region and the barriers they face, based on the PROTEqIN data.<sup>9</sup>

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<sup>8</sup> For details on the methodology adopted for LACES, which informed the approach undertaken with the PROTEqIN, see:

<http://www.enterprisesurveys.org/~media/GIAWB/EnterpriseSurveys/Documents/Topic-Analysis/Mapping-Enterprises-LAC-Note.pdf> [Accessed 6th June 2016]

<sup>9</sup> The data that have been collected in the survey relates to establishments but we are able to identify whether the establishment belongs to a larger entity since all responding establishments were asked the question “is your establishment part of a larger firm?”. This information reveals that 83% of establishments in the sample are not part of a larger firm, implying that in the majority of cases the establishment is also the enterprise. This is particularly true for SMEs since only 10% of small establishments are part of larger firms, compared with 18% of medium and 32% of large establishments.

The PROTEqIN survey of the Caribbean collected data on 1,846 enterprises<sup>10</sup>, nearly half of which were micro or small (48%) with 86.3% employing less than 100 people (see Table 2). The median number of employees for the full sample was 21, with a range from 11 in St. Vincent and the Grenadines to 31 in The Bahamas. Variations in the industrial composition of the PROTEqIN data across the Caribbean countries are shown in Table A1 in the Appendix.

< INSERT TABLE 2 AROUND HERE >

The information that will be examined in the remainder of the paper mainly relates to the questions on obstacles to business. The top three most serious constraints to enterprise development, as reported by the responding enterprises across all countries, are shown in Table 3. The most important obstacles are an inadequately educated workforce, access to finance, and crime, theft and disorder. However, the intensity of these barriers is likely to vary by country and size-band, as well as across other business characteristics. Therefore, we use a multivariate econometric framework in order to further investigate these differences.

< INSERT TABLE 3 AROUND HERE >

Table 4 contains details of the severity of the top 10 obstacles to the current operation of the establishment that were indicated in the previous table. The table suggests that the importance of the obstacles does vary across establishments. In particular, more than 10% of establishments across the Caribbean report that an inadequately educated workforce, access to finance, crime, theft and disorder,

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<sup>10</sup> The PROTEqIN survey originally included Suriname. However, in keeping with the definition of the Caribbean used here, which focusses on independent English-speaking Caribbean countries with a common colonial heritage, Suriname is excluded from our analysis.

practices of competitors in the informal sector, electricity, and the macroeconomic environment represented very severe constraints to the current operation of their establishments. In contrast, only 5% of establishments indicated that tax rates were a very severe obstacle. In terms of barriers that represented no obstacle to businesses, the percentage ranged from around 30% for the cost of finance to 12% for an inadequately educated workforce.

It should be noted that finance is often cited as one of the main constraints to businesses, particularly SMEs. However, closer inspection of our data suggests that access rather than cost is the main driver. This result may be indicative of three issues affecting the Caribbean. Firstly, that the cost of finance is low in the region, secondly because of a lack of access, there is a lack of experience of the actual costs associated with finance and therefore this not being cited as a barrier. Thirdly, it may be that entrepreneurs are willing to pay the costs as long as they can access finance. The view that the cost of finance is as low in the region as it can be is not considered here. This is due to the high interest rates and interest rate spreads in the region which Moore and Craigwell (2002) suggest is not indicative of a competitive market. In addition, given the complexity of issues relating to the financing of businesses, it may difficult to fully capture or disentangle the nature of financial constraints in survey data.

< INSERT TABLE 4 AROUND HERE >

This information is presented in a different way for countries across the Caribbean in Table A2 in the Appendix, by reporting the mean level of severity for each of the 10 obstacles. The means are calculated by assigning a value of 0 when no obstacle is reported, 1 for a minor obstacle, 2 for a moderate obstacle, 3 for a major obstacle and 4 for a very severe obstacle. The most important obstacle on this basis is

an inadequately educated workforce, followed by access to finance, and crime, theft and disorder. The least important obstacles in terms of their means are the cost of finance, corruption, and customs and trade regulations. The table also reveals a high degree of variation across Caribbean countries in terms of the importance of these barriers. Obstacles to businesses appear to be most severe in Guyana where the highest mean values for access to finance, crime, the cost of finance, electricity, the macroeconomic environment and corruption are observed. Jamaican establishments have the highest mean values for tax rates and the practices of competitors in the informal sector. The highest means for an inadequately educated workforce and customs and trade regulations are found in St. Lucia and Belize respectively. Moreover, although it is the most important barrier for the Caribbean as a whole, an inadequately educated workforce only has the highest mean value in St Lucia and The Bahamas. Relatively low means are found for obstacles in some countries, including for corruption, crime and the cost of finance in Barbados, and tax rates and corruption in St Kitts and Nevis.

The empirical methods that we utilise in the next section relate to the application of econometric models to the PROTEqIN data. In particular, we follow the approach used by Vargas (2015), who estimates a series of ordered probit regression models on dependent variables indicating the severity of the constraints posed by the main obstacles to businesses. Ordered choice models are appropriate when the dependent variable is categorical but ordered in nature (Greene 2012). Either probit or logit models could be estimated, and these typically produce very similar results. Ordered probit models, which use the normal distribution for the error term, have been estimated in this paper, as in Vargas (2015). As indicated previously, the dependent variable takes a value of 0 if the relevant barrier poses no obstacle to

the responding establishment, a value of 1 if it is considered to be a minor obstacle, 2 if it is a moderate obstacle, 3 if it is a major obstacle and 4 if it is a very severe obstacle.

Each of the models that are estimated capture a range of potential influences. Dummy variables have been included to control for industrial variations (relative to a base category of the food sector), legal structure (relative to a sole proprietorship), location of main market (base category is local), employment size-band (reference category is small), gender balance of ownership (relative to all owners/shareholders are men) and a single binary variable to indicate whether the establishment is part of a larger firm. Eleven country dummy variables have been included in the models and it is these that we focus on to observe country-level variations. These are measured relative to Jamaica, which is the largest economy in the region, as indicated in Table 1. Finally, a scale variable indicating the age of the establishment has also been added to each model.<sup>11</sup>

### **Econometric analysis**

Estimates from the ordered probit models are presented for the 10 obstacles in Table 5. The most striking feature of the tables is that the estimates associated with the country dummies indicate that there are some noticeable differences across nations to the relevance of specific barriers to business. In particular, our results indicate several significant differences - relative to the base category of Jamaica - in each of the models, indicating important differences in the severity of barriers felt by businesses after controlling for other influences. In contrast, establishment characteristics play

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<sup>11</sup> The age variable has been divided by 100 when entered in the regressions in order to aid the reporting of the estimated coefficients.

far less of a role in explaining the differences in the obstacles that are reported within the region. Controls for size of establishment (by including dummies for medium and large establishments, relative to small establishments), industrial sector, legal status, whether part of a larger firm, age, location of main market and gender balance of ownership are mostly insignificant, with no clear pattern to the effect of these explanatory variables. This is consistent with the findings of Bartelsman, Haltiwanger, and Scarpetta (2009) who found that cross-country comparisons of firm level demographic factors were dominated by country-specific effects.

That said, we note a few trends that are weakly discernible and worthy of comment. Establishments in wholesale and retail sector identify the macro environment and practices of competitors in the informal sector as more severe constraints and the continuity of electricity supply is identified as a more severe constraint for sole proprietorships. For gender, significant differences are seen in relation to fully female-owned enterprises indicating competitors' practices in the informal sector and corruption being significantly higher than in fully male-owned firms. However, there do not appear to be clear gender differences with regards to the barriers to enterprise. In addition, customs and trade regulations appear to be a significant constraint for medium-sized enterprises, a group of firms that are considered more likely to export<sup>12</sup>. Establishments that are part of a larger firm are also significantly more likely to report an inadequately educated workforce and the

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<sup>12</sup> Statistical tests based on the raw data indicate that there are several other significant differences between small and medium sized establishments at the 10% level. In particular, significant differences are also found at the 10% level using two-sided t-tests for the following barriers: cost of finance, tax rates and macroeconomic environment. The only significant difference at the 10% level between small and large establishments is found for access to finance, although it should be noted that there are far fewer large establishments in the sample, as indicated in Table 2.

cost of finance as business constraints. The latter effect may be viewed as somewhat surprising given that independent firms may be expected to pay more for their finance. This result may therefore reflect, at least in part, the difficulties in capturing and disentangling finance constraints in survey data that have been previously noted.

Exploring the country variations in the barriers further, it can be seen that establishments in Jamaica are significantly more likely to report that the practices of competitors in the informal sector are a greater constraint than in all other Caribbean countries. This is also true for tax rates (with the exception of Belize). Jamaican establishments view crime, theft and disorder as a more severe constraint than comparable businesses in all other countries, apart from Guyana and Belize. The severity of electricity as an obstacle to business is also significantly lower in 8 of the 11 countries compared to Jamaica. In contrast, the coefficients attached to the country dummies in the customs and trade regulations model are positive and significant at the 5% level or better for 9 of the countries. This is also the case for 6 and 5 of the countries in the models for macroeconomic environment and an inadequately educated workforce respectively.

A number of clusters can be identified from our results, in terms of the importance of particular barriers to enterprise. The first cluster comprises of Jamaica, Belize and Guyana. Here, crime, tax rates, electricity and corruption are reported as more severe constraints to establishments. Establishments in Barbados report a similar level of constraint for electricity and crime, however, tax rates and corruption are perceived as far less important barriers in this country. A second cluster includes Grenada, St Lucia, The Bahamas and Trinidad and Tobago. In particular, the same signs are observed for these countries in each of the models, with the exception of the cost of finance in St. Lucia. These effects also tend to be highly significant, except for



the cost of finance in St Lucia, The Bahamas and Grenada, the macroeconomic environment in St Lucia and the Bahamas, and corruption in Grenada and Trinidad and Tobago.

< INSERT TABLE 5 AROUND HERE >

Although the indicators for the size of the establishment are not generally significant in the models, it is important to determine whether the differences that have been identified across all establishments in the sample are also present for small and medium-sized categories. Evidence presented and discussed by Vargas (2015) suggests that constraints may have a differential impact across the size distribution of firms, and such effects may be masked by the aggregate ordered probit approach that combines establishments of all sizes. Therefore separate estimates are reported for small and medium sized establishments in Tables 6 and 7.

< INSERT TABLE 6 AROUND HERE >

Given the dominant role played by the country effects in our earlier regressions, only country estimates are reported in these tables. Overall, the estimates for the country dummies are similar for small and medium-sized enterprises, in terms of their sign, magnitude and significance levels, indicating little difference in terms of the size of establishments across countries in the sample and how they view constraints. However, there are some effects that are worth noting. Smaller Jamaican establishments appear to view access to finance and tax rates as more of a constraint in relative terms compared to medium-sized establishments in that country. While in comparison to many other Caribbean nations, medium-sized Jamaican establishments do not perceive an inadequately educated workforce to be a severe constraint.

< INSERT TABLE 7 AROUND HERE >

One also needs to be mindful of the smaller number of observations in the models that are estimated separately for small and medium-sized enterprises, which limits significant levels to a greater degree than in the models containing all size categories. This implies that although the clusters that were previously identified still appear to be present for small and medium-sized enterprises, the relationships are weaker from the perspective of statistical significance, most likely because of smaller sample sizes rather than a particularly weaker relationship.

### **Discussion and policy implications**

The econometric analysis reveals that there are only limited differences with regards to the severity of barriers based on establishment characteristics, and that the main issues appear to be systemic and related to an inadequately educated workforce, access to finance and crime, theft and disorder. Given that the constraints are regional, so will be the solutions. At a specific country level however, the following should be noted: for the three main constraints at the regional level, the quality of the labour force was a more severe constraint in St. Lucia, Belize, The Bahamas and Trinidad and Tobago; and access to finance and crime, theft and disorder were more severe in Jamaica, Guyana and Belize.

Our empirical findings at the regional level suggest some general policy implications for the region. With regards to appropriate skills, despite the recognised importance of education and training, and the adoption of a regional approach to its provision, the mismatch between the needs of the private sector and the output of educational institutions seen in the 1970s still persist (Commonwealth Youth Programme 1976, Downes 2006, Pantin 2005, Parra-Torrado 2014). Lashley et al. (2015) place the issue of addressing this at the core of regional strategy to enhance

employability. The recommendations include: the implementation of training in key generic skills related to seeking and participating in employment, specifically related to work ethic, punctuality, customer relations and decision-making. Secondly, the integration of Technical and Vocational Education and Training (TVET) into the secondary school curriculum to ensure graduates have marketable skills even if they do not participate in post-secondary education. Finally, the implementation of a dual-track approach to TVET, as utilised in several European countries, where institutional instruction and on-the-job training is used to *'ensure a dynamic transfer of skills needed in industry to the skills of graduates'* (p.103). In order for such interventions to be successful, they need to be inclusive and part of wider regional strategy that includes the main education and training organisations.

While the provision of higher quality education can be considered as a social good, the demand for higher level skills at the enterprise level also needs to increase. In particular, in the absence of enterprise growth which may create a greater demand for skilled labour, future graduates may lack appropriate employment opportunities, resulting in either unemployment or further brain drain due to emigration.

With regards to attracting and keeping an educated workforce, Mishra (2007) notes there is a need to address both the 'pull' and 'push' factors causing emigration. While noting that a border tax on emigrants may be unfeasible, she suggests that one approach can be the reorientation of education, as we note above, through providing skills demanded in the region, to expand the pool of opportunities available for highly educated persons. This is however a long term endeavour, as the gestation period for such interventions to reach the point where domestic opportunities negate the higher wages available abroad are perhaps a generation away.

If skill development strategies can be implemented successfully, and greater supply met with greater demand, an anticipated spillover would be the reduction of crime and disorder. However, these interventions in the education system will need to be introduced in tandem with social development policies to have a comprehensive impact. The United Nations Development Programme (2012) recommends systemic assessments of job training and employment creation programmes across the region as one approach to enhancing their efficiency and subsequently enhancing social crime prevention. Other recommended measures include in-school and out-of-school programmes to promote 'pro-social behaviour', the establishment of gang surveillance systems to promote greater understanding of the phenomena and developing research capacity to assist in the development of evidence-based policy formulation.

As with the provision of higher quality education, interventions to reduce crime have wider social benefits, in addition to their potentially positive effects on enterprises, through the reduction of losses from crime and expenditures on crime prevention. Moreover, the macroeconomic effects from increasing attractiveness to foreign investment and specifically the effect on tourism could also be substantial (Bailey 2010, Stone 2006). However, increased efforts to reduce crime could negatively impact on enterprises, if government expenditure is redirected from enterprise development to the criminal justice system or taxation is increased to support crime reduction. This is why, as recommended by Stone (2006) in relation to South Africa, policy-makers and those in the judicial system need to appreciate the link between crime and the real economy, and vice versa. This is an important lesson for the Caribbean since, with limited public resources, the region can ill afford to fight crime without specific attention to the actual mechanisms through which it affects

enterprises, and the aggregate economy. However, unlike regional efforts on education, the heterogeneity of the causes, character and effects of crime makes a common approach rather difficult (Bailey 2010, 338).

While dealing with the issues of education and crime can be addressed to a large degree by domestic and regional governments, and related agents, addressing the issues related to access to finance are more external, given that access is controlled by foreign-owned, mostly Canadian, commercial banks in the region<sup>13</sup>. Lack of access to finance, and related to information provided in other sections of the PROTEqIN survey<sup>14</sup>, is mostly due to providers' desire to reduce their risk of loan losses by the implementation of high levels of due diligence (bureaucracy) and loan conditions (loan size, interest rates, maturity periods). Efforts to reduce these obstacles would assist in providing greater access to finance in the region.

However, the foreign dominance of Caribbean commercial banks is a concern. Bonaccorsi di Patti and Gobbi (2001) note that smaller firms benefit to a greater degree from smaller locally-owned banks, as they are considered more suited to providing the type of relationship-based lending which is important for small enterprises. Some of the more concerning aspects of commercial banking sector in the Caribbean is that not only do these foreign banks have a dominant position, but

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<sup>13</sup> Ogawa et al. (2013) indicate that foreign commercial banks account for approximately 60% of banking assets in the region.

<sup>14</sup> The most prominent reasons for loan refusal were: incompleteness of loan application (26%); problems with credit history (25%); unacceptable collateral or cosignatories (17%); and insufficient profitability (13%). For reasons for not applying for a loan, apart from not needing a loan (37%), the other prominent responses were: unattainable collateral requirements (15%); unfavourable interest rates (11%); belief that loan would not be approved (10%); complicated application procedure (9%); and insufficient loan size/loan maturity (9%).

evidence suggests they are exploiting this position. Moore and Craigwell (2002) suggest that the behaviour of the commercial banks in the Caribbean region with respect to interest rate spreads are not what would be expected in a competitive market. Similarly, Grenade (2007) notes, in the case of the OECS, that the larger spreads are seen from foreign banks over locally-owned banks, despite both forms operating under the same competitive and macroeconomic environment, and foreign banks being expected to have greater operating efficiencies.

Addressing market failures in the provision of finance for enterprise development in the Caribbean can take several approaches, ranging from moral suasion of private commercial banks to direct intervention in the provision of finance through bank nationalisation or, as according to James (2007), refocusing and strengthening of development banks<sup>15</sup>. Levy-Yeyati, Micco, and Panizza (2004) ask whether these market failures are best addressed with subsidies and regulations or through direct ownership. To answer this question will however require further research, which is beyond the scope of the current paper, for as they state: *'As both financial development and institutional quality are closely related with economic growth, it is very difficult to make a statement on the role of public banks without disentangling the causal relationship between these variables and state ownership of banks'* (p.25). What is clear is that some form of intervention is needed, perhaps driven from the regional level, CARICOM or the Caribbean Development Bank (CDB), given inherent domestic political and efficiency issues that are characteristic of government-operated financial institutions (Levy-Yeyati, Micco, and Panizza 2004, La Porta, Lopez-de-Silanes, and Shleifer 2002).

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<sup>15</sup> James (2007) notes that as currently constructed, development banks in the region *'are inadequately market oriented and are expensive to operate as government owned entities'* (p.55).

Another issue that needs addressing to enhance access to finance in the region is greater information on borrowers, as this would enhance the availability, quality and efficiency of finance (Clarke 1997, Holden and Howell 2009). Based on a sample of firms in transition economies in Europe, Brown, Jappelli, and Pagano (2009) find that *'information sharing is associated with improved availability and lower cost of credit to firms'* (p. 151). CGAP (2009) notes that credit bureaus, through the reduction of information asymmetries, allows for lower screening costs and greater access to finance. CGAP (2009) demonstrates a positive relationship between countries' levels of credit information and number of loans to individuals; such a relationship would be expected to exist for businesses. However, with the exception of Jamaica<sup>16</sup>, there are no frameworks in place for the establishment and operation of credit bureaus in the region. The establishment of credit bureaus, and collateral registries, would assist in the reduction of collateral requirements, interest rates, due diligence requirements, and more appropriate loans<sup>17</sup>, factors which Nicholson and Lashley (2016) identify as the main issues deterring 39% of firms in the PROTEqIN database from applying for loans.

However, the introduction of systems to alleviate the problem of asymmetric information is based on the assumption that this will result in greater access to finance, as lenders would have greater information on borrowers. It is likely that this may exacerbate the problem of access to credit if applicants are less creditworthy than

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<sup>16</sup> Jamaica made advances in establishing a legal and regulatory framework for private credit bureaus in 2014, and saw the actual establishment of credit bureaus in 2015. See <http://www.doingbusiness.org/data/exploreeconomies/~media/giawb/doing%20business/documents/pr/files/country/JAM.pdf?ver=3> [Accessed 2<sup>nd</sup> September 2016]

<sup>17</sup> The PROTEqIN data indicates that smaller loans than required, along with shorter maturity periods, are the main reasons for not applying for credit from commercial banks.

initially determined by previous due diligence efforts. If this is indeed the case then governments will need to take remedial action in relation to the implementation of financial products/institutions to support small and medium enterprises (SMEs) as they did in the late 1990s/early 2000s for microenterprises.

## **Conclusions**

The aim of this paper has been to consider SMEs in the Caribbean region and investigate the extent to which barriers to enterprise development are common across the region, as well as being affected by enterprise level characteristics (such as age and sector). Existing evidence suggests a number of clear relationships between firm characteristics and barriers to growth and that these might be different according to the size of organisations. Our analysis reveals that the Caribbean is subject to a number of growth-inhibiting factors (Hay and Kamshad 1994, Krasniqi 2007), where the most serious obstacles to enterprise development are an inadequately educated workforce, access to finance, and crime, theft and disorder. These obstacles were amongst the top three obstacles identified for 39.5%, 33.4% and 31.1% of the sample respectively.

We then focused on 10 separate barriers - including these three main constraints - in our econometric analysis. This revealed a large degree of heterogeneity within the region, as seen by the significance of the country dummies for many of the constraints. We find that establishment characteristics play a relatively minor role in determining the perceived severity of the barriers, suggesting that country-level factors are the primary reason for variations in enterprise development in the region. Establishment characteristics such as industrial sector, legal status, being part of a



larger firm, size, age, main market and the gender balance of ownership are generally insignificant in determining variations in the severity of obstacles.

The analysis was extended to consider each barrier separately for small and medium-sized enterprises to discern any variations in the severity of constraints by size. The results suggest that the previous results for all firms were generally maintained in terms of the direction, magnitude and significance level of the estimates, indicating that the views on constraints to enterprise development are mostly consistent across these size categories. However, some differences are observed in relation to size, as discussed in the results section.

While the analysis has revealed some commonality at the country-level (and in the identification of clusters), what is particularly interesting, and reinforcing with respect to the Caribbean having systemic issues in constraining enterprise growth, is the limited significant differences seen in relation to enterprise characteristics. Of particular interest are the issues of age and size, where previous research has suggested that the severity of barriers should differ (Coad and Tamvada 2012), with younger firms experiencing more issues with finance and energy, and larger firms suffering more from macroeconomic conditions and labour market issues. Indeed, along with the quality of the labour force and crime, access to finance is cross-cutting as a significant barrier to enterprise development across the region. Focusing on these issues not only has a direct effect on the social good, higher quality education and increased safety and security, but also indirectly with the ability of enterprises, through their growth and development, to provide higher quality employment opportunities, increased output and subsequently economic growth at the national and regional level. Our results support the view that enterprise development in the Caribbean cannot be conveniently addressed solely through economic policy

development, but that wider societal issues have a marked effect on these businesses' potential for growth.

To address the most severe constraints faced by businesses in the region, we provide some policy recommendations in relation to greater integration of the needs of industry within the education system to address the inadequacy of skills in the labour market. These should be developed in tandem with social policies and the promotion of 'pro-social behaviour' to address crime. Additionally, with regards to access to finance, greater research is required to understand the causal relationships between financial and institutional quality, economic growth, and level of state ownership in the region, in order to determine the form of interventions that are required. The options range from moral suasion of the mostly foreign-owned commercial banking sector, to subsidies, greater regulatory oversight, nationalisation or the refocussing and restructuring of development banks. Other recommended approaches relate to the need for greater information on borrowers to enhance the availability, quality and efficiency of finance. The reduction in information asymmetries would be enhanced by the establishment of credit bureaus and collateral registries to enhance access to finance by reducing cost and procedural obstacles and therefore promote business growth. Such measures should help to address the stagnant growth the Caribbean has been experiencing in recent decades through the development of a stronger private sector.

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**Table 1. Caribbean macroeconomic, trade and natural resources statistics (2014 unless otherwise stated)**

	<b>Population (000s)</b>	<b>GDP (current US\$ millions)</b>	<b>GDP per Capita (current US\$)</b>	<b>Inflation (consumer prices, annual %)</b>	<b>Imports of Goods and Services (%GDP)</b>	<b>Exports of Goods and Services (%GDP)</b>	<b>Total Natural Resource Rents (%GDP)</b>	<b>International Tourism Receipts (% of total exports) (2013)</b>
<b>ANT</b>	90.9	1,221.0	13,432	1.09	59.4	45.3	-	56.5
<b>BAH</b>	383.0	8,510.5	22,217	1.50	60.9	43.9	0.1	63.6
<b>BAR</b>	283.4	4,354.5	15,366	1.89	48.3	36.5	0.6	42.8
<b>BEL</b>	351.7	1,717.9	4,884	1.20	66.3**	60.9**	6.3**	33.2**
<b>DOM</b>	72.3	524.6	7,252	0.80	47.6	34.1	0.2	60.1
<b>GRN</b>	106.4	911.8	8,574	-0.95	43.5	26.1	-	57.2
<b>GUY</b>	763.9	3,077.1	4,028	0.92	80.8	51.1	21.3	5.0
<b>JAM</b>	2,720.6	13,927.1	5,119	8.29	53.4	31.2	1.7	48.8
<b>SKN</b>	54.9	864.8	15,739	0.25	47.3	38.5	-	34.3
<b>SLU</b>	183.6	1,404.4	7,648	3.52	50.3	44.7	0.1	57.6
<b>SVG</b>	109.4	729.7	6,673	0.19	56.5	25.1	0.1	47.4
<b>TNT</b>	1,354.5	28,874.1	21,317	5.68	31.5	44.4	17.3	3.1*
<b>Average (unweighted)</b>	539.6	5509.8	11021	2.03	53.8	40.2	5.3	42.5

Source: World Bank (2016) unless otherwise stated.

\* Data for 2011.

\*\*Data for 2013



**Table 2. Distribution of establishments by employee size category and country (%)**

	<b>Micro and Small (less than 20 employees)</b>	<b>Medium (20 to 99 employees)</b>	<b>Large (100 or more employees)</b>	<b>Median Employees</b>	<b>Number of observations</b>
<b>JAM</b>	36.8	44.6	18.6	28.0	242
<b>ANT</b>	56.5	39.7	3.8	15.0	131
<b>BAR</b>	35.8	37.4	26.8	30.0	123
<b>DOM</b>	60.5	34.1	5.6	14.0	126
<b>GRN</b>	58.9	31.8	9.3	14.0	129
<b>GUY</b>	60.0	25.0	15.0	11.5	120
<b>SKN</b>	44.0	48.8	7.2	23.0	125
<b>SLU</b>	45.3	48.4	6.3	22.0	128
<b>SVG</b>	70.7	24.8	4.5	11.0	133
<b>BEL</b>	54.9	39.3	5.7	17.5	122
<b>BAH</b>	36.3	44.1	19.7	31.0	127
<b>TNT</b>	40.9	34.4	24.7	26.0	340
<b>Total</b>	<b>48.4</b>	<b>37.8</b>	<b>14.0</b>	<b>21.0</b>	<b>1846</b>

**Table 3. Top 3 most serious obstacles to the establishment's operations (%)**

	<b>Most serious</b>	<b>Second most serious</b>	<b>Third most serious</b>	<b>Top Three Proportion</b>
<b>Inadequately educated workforce</b>	25.9	6.8	6.8	39.5
<b>Access to finance</b>	15.8	11.3	6.3	33.4
<b>Crime, theft and disorder</b>	9.3	14.4	7.6	31.3
<b>Tax Rates</b>	7.3	7.9	6.8	22.0
<b>Cost of finance</b>	6.4	8.6	8.2	23.2
<b>Practices of competitors in the informal sector</b>	6.3	7.9	9.8	24.0
<b>Electricity</b>	5.7	4.0	8.5	18.2
<b>Customs and Trade Regulations</b>	5.7	7.9	6.2	19.8
<b>Macroeconomic environment</b>	5.0	6.6	4.5	16.1
<b>Corruption</b>	3.6	7.4	5.5	16.5
<b>Political environment</b>	2.5	2.0	3.7	8.2
<b>Transportation</b>	2.0	1.4	6.9	10.3
<b>Tax administration</b>	1.7	6.9	5.7	14.3
<b>Access to land for expansion / relocation</b>	1.1	1.6	4.8	7.5
<b>Telecommunications</b>	1.0	1.1	4.5	6.6
<b>Business Licensing and Permits</b>	0.4	1.2	1.6	3.2
<b>Labour Regulations</b>	0.1	3.1	2.5	5.7
<b>Total</b>	100.0	100.0	100.0	

Note: Top Three Proportion indicates the proportion of establishments in the sample indicating that a particular obstacle was among the top three obstacles.

**Table 4. Severity of each obstacle to the current operation of the establishment (%)**

	<b>No obstacle</b>	<b>Minor</b>	<b>Moderate</b>	<b>Major</b>	<b>Very severe</b>
<b>Inadequately educated workforce</b>	12.4	28.9	29.6	17.8	11.3
<b>Access to finance</b>	20.6	22.6	28.7	17.8	10.4
<b>Crime, theft and disorder</b>	14.3	33.3	28.2	13.9	10.4
<b>Tax Rates</b>	23.5	26.5	28.0	17.1	5.0
<b>Cost of finance</b>	29.8	26.2	25.5	10.7	7.8
<b>Practices of competitors in the informal sector</b>	20.3	30.2	27.1	11.5	10.9
<b>Electricity</b>	22.1	30.6	19.3	16.9	11.2
<b>Customs and Trade Regulations</b>	18.9	34.6	30.4	10.2	5.9
<b>Macroeconomic environment</b>	23.3	24.9	27.8	13.3	10.7
<b>Corruption</b>	23.0	34.5	23.0	11.9	7.5

**Table 5. Ordered probit estimates for the severity of each obstacle to the current operation of the establishment**

	Workforce Education	Access to finance	Crime	Tax Rates	Cost of finance	Competitor Practices	Electricity	Regulations	Macro Env.	Corruption
ANT	0.19	-0.60***	-0.63***	-0.89***	0.20	-0.92***	-0.51***	0.54***	0.16	-0.51***
BAR	0.16	-0.30**	-1.26***	-0.65***	-0.45***	-0.89***	-0.10	0.31**	-0.04	-0.72***
DOM	0.00	-0.10	-1.01***	-0.66***	0.17	-0.97***	-0.46***	0.09	0.53***	-0.11
GRN	0.23**	-0.33***	-0.30**	-0.65***	0.10	-0.57***	-0.61***	0.71***	0.27**	-0.19
GUY	0.22	0.10	0.07	-0.33**	0.67***	-0.45***	0.23	0.66***	0.70***	0.65***
SKN	-0.02	-0.12	-0.43***	-0.99***	0.17	-0.97***	-0.42***	0.13	0.60***	-0.55***
SLU	0.80**	-0.36***	-0.91***	-0.66***	-0.01	-0.65***	-0.56***	0.66***	0.14	-0.40***
SVG	0.21*	-0.07	-0.47***	-0.59***	-0.13	-0.73***	-0.64***	0.53***	0.63***	-0.42***
BEL	0.45***	-0.01	0.06	-0.10	0.33***	-0.42***	0.06	1.19***	0.00	0.42**
BAH	0.53***	-0.56***	-0.92***	-0.50***	0.17	-0.45***	-0.52***	0.48***	0.00	-0.52***
TNT	0.33***	-0.14	-0.22**	-0.41***	0.21**	-0.61***	-0.68***	0.43***	0.44**	-0.02
Medium Estab.	-0.07	-0.01	0.04	0.04	-0.10	-0.09	-0.08	0.15***	-0.04	-0.02
Large Estab.	0.06	-0.02	-0.10	0.11	-0.09	0.00	0.12	0.11	-0.03	-0.03
Other Manuf.	0.07	0.10	0.11	0.03	0.12	0.07	-0.01	0.01	0.07	0.02
Construction	0.10	0.13	0.20	-0.06	0.05	0.18	0.14	-0.08	-0.09	-0.21
Wholesale/Retail	0.01	0.07	0.17*	0.16*	0.08	0.25**	-0.03	0.03	0.20**	-0.04
Hotels & Rests	-0.02	0.09	0.08	0.07	0.15	0.14	-0.01	0.00	0.17	0.05
Transport	0.05	0.05	0.18	0.25*	0.10	0.15	-0.04	0.23*	0.08	0.17
Other Services	-0.13	0.08	-0.04	0.13	0.15	0.02	0.07	-0.06	0.02	-0.04
Shareholding company	-0.16**	-0.05	-0.04	-0.07	0.08	-0.04	-0.11	0.04	0.08	-0.02
Partnership	-0.08	0.07	0.21**	-0.08	0.16*	-0.16*	-0.19**	-0.03	0.05	0.13
Limited partnership	-0.07	-0.01	-0.03	-0.14	0.06	-0.06	-0.18*	0.04	-0.05	0.02
Part of Larger Firm	0.15**	-0.08	0.06	0.11	0.18**	0.02	0.13*	0.07	-0.04	0.04
Age/100	0.07	-0.26*	-0.10	-0.20*	0.05	0.33**	0.00	-0.03	0.00	0.07
National	0.03	-0.01	-0.03	0.08	0.06	0.05	0.00	0.03	0.06	-0.08
International	-0.09	-0.07	-0.12	-0.02	-0.08	-0.21**	0.05	-0.04	0.04	-0.37***
Predom. Men Owners	0.09	-0.15*	-0.03	0.07	0.02	-0.03	-0.02	0.02	0.03	-0.01
Equal Owners	0.08	0.02	-0.05	-0.03	0.07	-0.08	0.00	-0.03	0.05	0.12
Predom. Women Owners	0.18	-0.02	0.10	0.05	0.01	-0.09	0.07	0.02	-0.15	0.19
All Women Owners	-0.07	0.03	-0.18**	0.11	0.13	0.17**	-0.01	0.05	0.01	0.18**
Wald Chi- Squared	100.96***	89.37***	260.75***	148.60***	97.74***	165.99***	157.84***	157.85***	129.44***	218.36***
N	1785	1785	1785	1785	1785	1782	1785	1785	1785	1785

Notes: Reference categories are Jamaica, Food, Sole Proprietorship, Not Part of Larger Firm, Small Establishment, Main Market is Local and Owners and Shareholders are All Men. \*\*\* indicates significance at the 1% level (using a two-tailed test for individual explanatory variables), \*\* at the 5% level and \* at the 10% level. Significance levels have been calculated using heteroscedastic consistent standard errors.

**Table 6. Ordered probit estimates of country effects for the severity of each obstacle for small establishments**

	Workforce Education	Access to finance	Crime	Tax Rates	Cost of finance	Competitor Practices	Electricity	Regulations	Macro Env.	Corruption
<b>ANT</b>	0.02	-0.80***	-0.74***	-1.13***	0.07	-0.96***	-0.61***	0.72***	0.28*	-0.79***
<b>BAR</b>	0.16	-0.42**	-1.36***	-0.71***	-0.90***	-0.89***	-0.02	0.27	0.11	-0.99***
<b>DOM</b>	-0.01	-0.50**	-1.24***	-0.70***	0.12	-0.98***	-0.66***	0.11	0.70***	-0.35*
<b>GRN</b>	0.18	-0.64***	-0.61***	-0.62***	0.03	-0.46**	-0.77***	0.71***	0.60***	-0.39**
<b>GUY</b>	-0.12	-0.16	-0.19	-0.59***	0.34*	-0.40*	0.08	0.33	0.73***	0.35*
<b>SKN</b>	-0.04	-0.59***	-0.61***	-1.00***	0.13	-0.95***	-0.53***	0.13	1.04***	-0.91***
<b>SLU</b>	0.83***	-0.75***	-1.10***	-0.76***	-0.14	-0.81***	-0.68***	0.82***	0.55***	-0.57***
<b>SVG</b>	-0.03	-0.45**	-0.76***	-0.72***	-0.37**	-0.65***	-0.68***	0.66***	0.91***	-0.74***
<b>BEL</b>	0.25	-0.33**	-0.04	-0.20	0.07	-0.53**	-0.14	1.23***	0.13	0.12
<b>BAH</b>	0.68***	-0.99***	-1.15***	-0.52**	-0.04	-0.45**	-0.63***	0.40*	0.16	-0.91***
<b>TNT</b>	0.15	-0.53***	-0.46***	-0.61***	-0.03	-0.51***	-0.91***	0.51***	0.67***	-0.29*
<b>Wald Chi-Squared</b>	67.16***	56.43***	140.51***	90.38***	54.85***	85.02***	107.42***	101.23***	108.05***	128.09***
<b>N</b>	868	868	868	868	868	867	868	868	868	868

Notes: Reference country is Jamaica. Controls also included for industrial sector, legal status, whether part of larger firm, location of main market and gender composition of ownership. \*\*\* indicates significance at the 1% level (using a two-tailed test for individual explanatory variables), \*\* at the 5% level and \* at the 10% level. Significance levels have been calculated using heteroscedastic consistent standard errors.

**Table 7. Ordered probit estimates of country effects for the severity of each obstacle for medium sized establishments**

	Workforce Education	Access to finance	Crime	Tax Rates	Cost of finance	Competitor Practices	Electricity	Regulations	Macro Env.	Corruption
<b>ANT</b>	0.43**	-0.49**	-0.80***	-0.65***	0.15	-0.77***	-0.41**	0.16	0.17	-0.47**
<b>BAR</b>	0.33*	-0.41**	-1.39***	-0.63***	-0.34*	-0.83***	-0.51**	0.14	-0.11	-0.65***
<b>DOM</b>	-0.03	0.05	-1.07***	-0.72***	0.07	-1.04***	-0.09	0.03	0.50**	0.01
<b>GRN</b>	0.22	-0.08	-0.31	-0.77***	0.09	-0.57**	-0.32	0.56**	0.11	-0.25
<b>GUY</b>	0.69***	0.33	0.28	-0.09	1.11***	-0.47**	0.41	1.08***	0.79***	1.00***
<b>SKN</b>	0.05	0.24	-0.44**	-0.97***	0.20	-0.82***	-0.25	0.04	0.46**	-0.47**
<b>SLU</b>	0.89***	-0.17	-0.91***	-0.54***	0.07	-0.44**	-0.40**	0.50***	-0.08	-0.46**
<b>SVG</b>	0.66***	0.22	-0.25	-0.45**	0.12	-0.70***	-0.53**	0.19	0.55**	-0.22
<b>BEL</b>	0.72***	0.21	-0.12	0.01	0.45***	-0.25	0.24	1.11***	-0.04	0.58***
<b>BAH</b>	0.59***	-0.24	-1.02***	-0.59***	0.28	-0.34	-0.35*	0.37**	-0.25	-0.42**
<b>TNT</b>	0.50***	0.13	-0.29	-0.17	0.35**	-0.67***	-0.37**	0.39**	0.31**	0.01
<b>Wald Chi-Squared</b>	72.67***	50.90***	142.42***	78.62***	70.13***	79.84***	42.58**	83.83***	76.70***	119.48***
<b>N</b>	676	676	676	676	676	675	676	676	676	676

Notes: Reference country is Jamaica. Controls also included for industrial sector, legal status, whether part of larger firm, location of main market and gender composition of ownership. \*\*\* indicates significance at the 1% level (using a two-tailed test for individual explanatory variables), \*\* at the 5% level and \* at the 10% level. Significance levels have been calculated using heteroscedastic consistent standard errors.

## APPENDIX

**Table A1. Distribution of enterprises by sector and country (%)**

	Manufact.	Wholesale and Retail	Construction	Servicing of Motor Vehicles	Hotels and Restaurants	Transport	Information Technology
<b>JAM</b>	39.3	34.3	2.9	8.7	7.4	5.4	2.1
<b>ANT</b>	19.8	29.8	6.9	5.3	26.7	9.9	1.5
<b>BAR</b>	43.9	13.0	4.9	0.8	26.0	6.5	4.9
<b>DOM</b>	17.5	21.4	7.9		31.0	18.3	4.0
<b>GRN</b>	16.3	30.2	12.4	8.5	26.4	5.4	0.8
<b>GUY</b>	35.8	41.7	2.5	3.3	8.3	2.5	5.8
<b>SKN</b>	22.4	29.6	12.8	3.2	21.6	9.6	0.8
<b>SLU</b>	44.5	25.0	1.6		25.0	3.9	
<b>SVG</b>	31.6	30.8	6.0	6.0	12.8	11.3	1.5
<b>BEL</b>	46.7	16.4	2.5	2.5	25.4	6.6	
<b>BAH</b>	26.0	18.9	18.1	2.4	23.6	7.9	3.1
<b>TNT</b>	34.1	39.1	7.6	4.1	7.6	6.2	1.2
<b>Total</b>	<b>32.2</b>	<b>29.3</b>	<b>7.0</b>	<b>4.1</b>	<b>17.9</b>	<b>7.5</b>	<b>2.0</b>
<b>Median Employees</b>	<b>23.0</b>	<b>17.0</b>	<b>29.0</b>	<b>17.0</b>	<b>21.0</b>	<b>20.0</b>	<b>13.0</b>

**Table A2. Mean value of the severity of each obstacle to the current operation of the establishment by country**

	Workforce Education	Access to finance	Crime	Tax Rates	Cost of finance	Competitors Practices	Electricity	Regulations	Macro environment	Corruption
<b>JAM</b>	1.62	2.00	2.21	2.05	1.24	2.36	2.08	1.10	1.24	1.71
<b>ANT</b>	1.74	1.27	1.53	1.13	1.47	1.25	1.47	1.56	1.47	1.06
<b>BAR</b>	1.79	1.60	0.92	1.34	0.85	1.26	2.01	1.41	1.21	0.94
<b>DOM</b>	1.53	1.87	1.13	1.37	1.44	1.15	1.54	1.12	1.94	1.49
<b>GRN</b>	1.84	1.57	1.88	1.43	1.43	1.71	1.40	1.75	1.63	1.49
<b>GUY</b>	1.87	2.10	2.33	1.72	2.13	1.80	2.43	1.78	2.18	2.41
<b>SKN</b>	1.52	1.83	1.74	1.00	1.48	1.16	1.55	1.19	2.01	1.00
<b>SLU</b>	2.46	1.59	1.25	1.36	1.22	1.54	1.38	1.68	1.48	1.21
<b>SVG</b>	1.84	1.86	1.66	1.49	1.19	1.45	1.37	1.53	2.05	1.17
<b>BEL</b>	2.10	1.96	2.29	1.88	1.60	1.76	2.14	2.25	1.29	2.18
<b>BAH</b>	2.20	1.29	1.19	1.52	1.44	1.77	1.47	1.51	1.24	1.02
<b>TNT</b>	1.97	1.78	1.91	1.60	1.47	1.63	1.26	1.48	1.84	1.57
<b>Total</b>	<b>1.87</b>	<b>1.75</b>	<b>1.73</b>	<b>1.54</b>	<b>1.40</b>	<b>1.63</b>	<b>1.64</b>	<b>1.50</b>	<b>1.63</b>	<b>1.46</b>

Note: Mean relates to the average value of each obstacle, where no obstacle has a value of 0, minor obstacle a value of 1, moderate obstacle a value of 2, major obstacle a value of 3 and a very severe obstacle a value of 4.