



Are Oil and Gas Smothering the Private Sector in Trinidad and Tobago?

Jeetendra Khadan

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Contents

Foreword.....	v
Acknowledgments	vii
Chapter 1: Challenges to the Private Sector in Trinidad and Tobago.....	1
Chapter 2: Macroeconomic Environment.....	3
Chapter 3: Profile and Performance of Firms	11
Chapter 4: Perceived Obstacles Affecting the Performance of Firms.....	27
Chapter 5: Human Capital	31
Chapter 6: Access to Finance	51
Chapter 7: Crime and Security	65
Chapter 8: Foreign Trade, Infrastructure, Competition, and Innovation	79
Chapter 9: Is Government Good for Business?.....	101
Chapter 10: Bringing It Together: Prioritizing Constraints and Identifying Policy Options.....	113
Chapter 11: Conclusions and the Way Forward	123
Annexes	131
References	145



Foreword

Facing what looks like a prolonged period of economic contraction due to a sharp decline in energy fortunes, Trinidad and Tobago is increasingly looking towards the private sector to play a greater role in stimulating economic recovery and transformation. This narrative is not new and is consistent with the country's continuous pursuit of diversifying its hydrocarbon-dependent economy.

A recent example of this is echoed in the national budget statement for 2017:

Diversification... requires that the private sector changes its mindset, from commerce to industry, from focus on the domestic market to seeking to explore global markets, from consuming foreign exchange to earning foreign exchange, from avoiding risks in new ventures and technologies to taking on new risks and facing new competitive pressures to conquer new fields.

Such expectations should be grounded in reality and context. Unfortunately, there are no empirical studies on the country's private sector that can provide relevant guidance. Therefore, this report is the first contribution to empirically answering questions related to the performance and challenges facing the private sector in Trinidad and Tobago.

Given the sense of urgency expounded for the private sector's enhanced role in supporting economic growth, creating employment, and improving the economic welfare of the nation's citizenry, we find that there is much work to be done. Firm-level performance indicators suggest that the majority of firms are either stagnant or declining. In addition, total factor productivity measured at the firm level is relatively lower in Trinidad and Tobago when compared with other countries in the Caribbean, labour productivity has been declining since the great recession, and private investment is significantly lower than the average for other small commodity-exporting countries.

Hence, a concerted policy effort is required to transform Trinidad and Tobago's private sector into an engine of sustainable growth.

This study examines factors relating to the profile of firms, macroeconomic conditions, the business climate, and laments of businesspersons as possible constraints to performance. The findings reveal that an unfavorable macroeconomic environment and business climate affects all firms in the private sector. With respect to the former, the main issue relates to an overvalued exchange rate—a negative externality of being hydrocarbon-dependent. An unfavorable business climate reflects government policies, regulations, and public services that hinder rather than promote a dynamic, export-oriented and innovative private sector. Moreover, the profile of private sector firms—an important determinant of performance—is unfavourable in terms of age, size, legal form, and trade orientation. Estimates from this study suggests limited access to financing, and labour and crime constraints are the three main microeconomic factors that weigh negatively on the sales growth of firms.

Positioning Trinidad and Tobago on a sustainable growth path requires a vibrant private sector. Despite the formidable challenges identified, proactive planning through a structured, participatory, and inclusive approach resulting in effective policy-making and the implementation of relevant policies that speak to the unique circumstances of Trinidad and Tobago is the answer. It is time for a change.

Rather than refocusing efforts on cherry-picking industries or debating which sectors should be developed, à la vertical productive development policies, this report suggest that Trinidad and Tobago should employ structural policies that would improve the overall business environment and underlying macroeconomic constraints, à la horizontal productive development policies. This report is timely and sets the stage for further discussions on preparing Trinidad and Tobago's private sector to deal with the challenges that lay ahead.

Therese Turner-Jones

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Challenges to the Private Sector in Trinidad and Tobago

The role of the private sector as an engine for sustainable economic growth and development is once again at the forefront of policy discussions in Trinidad and Tobago. This time it is more pertinent given the changing economic realities facing the economy. The main driver of economic growth, the energy sector, has faltered, and the prospect of its recovery in the near future is grim. Unlike previous episodes, the decline of oil output appears to be structural, due largely to maturing oil fields and what experts predict to be much lower and more volatile oil prices in the future. Even if gas production improves, increasing competition from shale gas poses a threat to the gas industry as well as its derivative products.

Also of concern is the subdued growth of the country's non-energy sector, which declined sharply after the global financial crisis. New challenges with the potential to further erode the competitiveness of the private sector have emerged as the government adapts to the adverse economic reality. Without a dynamic non-energy private sector, Trinidad and Tobago can expect further declines in investment, employment, and the government's ability to earn non-energy revenue. If the private sector does not "step up to the plate," the socioeconomic consequences could be dire in both the short and medium term.

Given these formidable challenges, it is high time to identify and prioritize an implementable set of policy measures to reduce the major obstacles that are hindering the performance of the private sector in Trinidad and Tobago. This report contributes to the discussion by analysing the main challenges to the private sector and proposing key elements of a strategy that would place the economy on a sustainable growth path.

This report is organized around three main questions:

1. How does the performance of firms in Trinidad and Tobago compare to that of firms in other Caribbean countries?

2. What are the key factors that affect firm performance?
3. What are the key issues that should be considered in a private sector development strategy?

The approach used to answer the above questions combines both firm- and macro-level data. This report hypothesizes that there are broad or economy-wide constraints that affect the performance of all firms. Therefore, using appropriate metrics both at the national and industry level, this report examines whether firms have to contend with an unfavourable macroeconomic and business environment. Constraints at the micro level may be different depending on a firm's sector of operation or other firm-specific characteristics. A combination of information ranging from the laments of businesspersons to objective data is used. Given the importance of non-energy exports, this report also analyses whether there are specific constraints to exporters. Regression analysis is then used to prioritize areas of policy intervention that will yield the highest return. The main data source of firm-level data is the 2014 Productivity, Technology, and Innovation (PROTEqIN) Survey, which is complemented with opinion surveys by the World Economic Forum in 2015 and the World Bank's Doing Business Project in 2016.

Throughout this report, several comparators for Trinidad and Tobago are used. The ideal comparator would be an oil and gas exporting economy with similar income per capita and population size. The primary source of firm data (the PROTEqIN survey) covers 12 Caribbean countries, but none of them have the characteristics of an ideal comparator. Nonetheless, the Caribbean average is used as a yardstick because it still gives a good indication of the relative differences between the performances of firms in Trinidad and Tobago and the rest of the Caribbean. The rest of the small economies of the world that are commodity-dependent, which would be a more appropriate though still not ideal comparator, are primarily used along with the Caribbean average as comparator groups when analysing data at the macro level.

Chapter 2 of this report examines the macroeconomic environment in which firms operate, while Chapter 3 analyses the profile and performance of firms in Trinidad and Tobago. Chapter 4 outlines the main obstacles affecting firms as identified by businesspersons. Chapters 5 to 7 use firm- and macro-level data to discuss in more detail the three most serious obstacles identified by businesspersons: (1) an inadequately educated workforce, (2) lack of access to finance, and (3) crime. Chapter 8 looks to identify other constraints that specifically affect the export potential of firms. Chapter 9 assesses the business environment and issues related to unproductive rent seeking and corruption. Chapter 10 defines policy priorities, and the final chapter summarises the main conclusions of the study and outlines the way forward.

Macroeconomic Environment

Macroeconomic conditions are important for economic growth. At the firm level, performance is partly explained by firm characteristics and other microeconomic factors. However, success or failure can be significantly influenced by the performance of the macroeconomy in which firms operate. Studies that examine the relationship between the macroeconomic environment (economic, political, and social) and growth typically find that macroeconomic instability reduces the rate of private investment and economic growth (Bleaney 1996; Mlambo and Oshikoya 2001). The discussion in this chapter is contextualized to that of an oil-and-gas-dependent economy with a focus on how Dutch disease can affect the performance of the private sector.

2.1 Dutch Disease

What is Dutch disease? The resource curse hypothesis, of which Dutch disease is a subset, explores how resource-rich countries tend to grow and develop at a slower pace than resource-poor economies (Auty 1993). While this may seem counterintuitive, empirical studies have shown that efforts to grow the non-energy tradable private sector in mineral-dependent countries have been undermined by unproductive rent seeking, an overvalued exchange rate (Dutch disease), and revenue volatility (Oomes and Kalcheva 2007). Moreover, even if countries avoid unproductive rent seeking and graft, the manufacturing sector can still suffer, as commodity booms tend to push up wages and exchange rates, making tradable products less competitive in external markets. Symptoms of Dutch disease include an overvalued real exchange rate, slower manufacturing growth, faster service sector growth, and higher overall wages (Oomes and Kalcheva 2007).

Dutch disease distinguishes between a *resource movement effect* and a *spending effect* (Corden and Neary 1982). The resource movement effect occurs when a boom in the natural resource sector attracts labour and capital from the manufacturing and

service sectors. This causes a decline in output of both sectors. The fall in output does not change the prices of manufacturing goods, which are set in the world market, but pushes up the price of services due to excess demand for them. The relative price of services to manufacturing goes up and induces an appreciation of the real exchange rate.

Even if the resource movement effect does not occur or is negligible, the spending effect would still induce a real appreciation of the exchange rate. The spending effect occurs when increased income from the booming natural resource sector raises aggregate demand and spending in the economy. If this demand goes into domestic services, then the price of services will increase relative to the price of manufacturing and hence the overall domestic price level, resulting in an appreciated real exchange rate.

Why focus on Dutch disease? Dutch disease is particularly important to consider for Trinidad and Tobago given the country's experience with two commodity booms (1973–1982 and 2002–2008) and its increasing dependence on the petroleum sector. If Dutch disease is present, all firms have to contend with a more appreciated real exchange rate that makes non-energy tradables less internationally competitive. At the same time, producers for the domestic market face competition from relatively cheaper imports. Thus, in the presence of Dutch disease, even those goods that are produced at the frontier of technology are not economically viable in a competitive market. If a new business using modern technology is established in a country affected by Dutch disease, with all other competitiveness factors being equal, the business will only be economically viable if its productivity is greater than the productivity achieved by business enterprises in rival countries to a higher or equal degree of the appreciation of the exchange rate caused by Dutch disease (Khadan and Ruprah 2016). The severity of the crowding out of non-energy tradables depends both on the size of energy revenues and the initial technological gap (Cherif, Hasanov, and Zhu 2016).

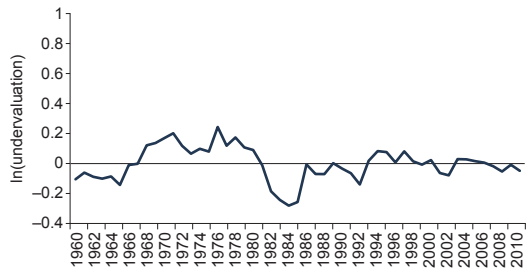
2.2 Dutch Disease and Trinidad and Tobago

Does Trinidad and Tobago show symptoms of Dutch disease? To answer this question, four exercises are conducted that allow us to determine whether symptoms of Dutch disease are present. First, a relative overvaluation index is constructed; second, an adjusted real effective exchange rate (REER) is calculated; third, the data for sectoral shifts in the economy are examined; and lastly, the effect of an increase in the REER on non-energy GDP and the non-energy trade balance is estimated.

Although there is no single measure by which one can say absolutely that a country's currency is overvalued or undervalued, there are ways to make some relative estimates. One approach is to compare a country's per capita GDP, measured in U.S. dollars at market exchange rates, with its per capita GDP at an exchange rate that is adjusted for differences in the relative cost of living. Countries that have lower

purchasing-power-parity-adjusted GDP per capita than their nominal GDP per capita are said to have an overvalued exchange rate. In the same vein is the relative overvaluation index (Rodrik 2008). In this case, the domestic price level is adjusted for the Balassa-Samuelson effect.¹ The relative overvaluation index is estimated using the steps that follow. First, nominal exchange rates and purchasing power parity

Figure 2.1: Relative Overvaluation Index



Source: Author's estimates based on the Penn World Tables 7.1.

conversion factors from the Penn World Tables are used to calculate a “real” exchange rate. Second is a regression of the real exchange rate on GDP per capita, which gives an estimate of the relation between real GDP and the real exchange rate (RER) of -0.27 (Rodrick found a value of -0.24). So there is a strong Balassa-Samuelson effect: when incomes rise by 10 percent, the RER falls by around -2.7 percent. An index of undervaluation is obtained as the difference between the actual real exchange rate and the Balassa-Samuelson-adjusted rate. If the index is greater (smaller) than unity, then there is an undervaluation (overvaluation). The overvaluation index is drawn in Figure 2.1, which shows that the Trinidad and Tobago dollar has been consistently and substantially overvalued.

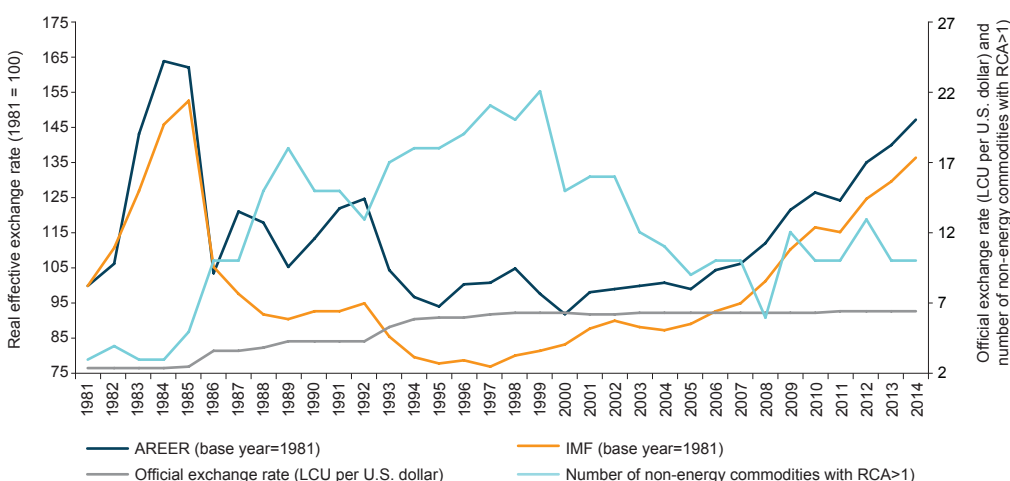
Policy discussions, however, tend to focus on a REER. These indexes are typically built to measure a country's overall international competitiveness compared with that of its trading partners. REER indexes are constructed using a weighted average of a country's nominal and real bilateral exchange rates against a set of countries. However, there is no universally agreed-upon method for calculating effective exchange rate indexes. Therefore, weighting methodologies, the types of trade included, and the frequency with which weights are updated vary significantly across countries, making these indexes less well suited to address current competitiveness issues. The choice of weights boils down to two options: trade-weighting, where the weights are based on direct export shares, import shares, or both; or competition-weighting, where weights reflect the fact that a country's exports face competition from both domestic producers in the destination country and exports from other countries, referred to as third-market competition. The frequency at which trade weights are updated across countries typically falls into one of three time frames: annually, every three years, or

¹ The Balassa-Samuelson effect suggests that an increase in wages in the tradable goods sector of an emerging economy will also lead to higher wages in the non-tradable (service) sector of the economy.

approximately every 10 years. The REER used most often is the one published by the International Monetary Fund (IMF). The IMF's REER uses competition weights; covers manufacturing goods, primary products (excluding energy) and services (travel only); and adjusts the weights approximately every 10 years (Khadan and Ruprah 2016).

Our new index—the adjusted real effective exchange rate (AREER)—includes a broader set of countries and uses annually updated competition-based weights. These weights—which use bilateral trade data from the United Nations COMTRADE database—account for both Trinidad and Tobago's bilateral trade with another country and the competition Trinidad and Tobago faces from that country on a product-by-product basis in third markets. Trade in energy products is important for Trinidad and Tobago, but those products have been excluded for the purpose of calculating the weights. Energy is excluded because prices are determined in global energy markets, and exchange rate movements are not expected to affect a country's relative competitiveness in such primary commodities. Excluding energy products also has the benefit of minimizing swings in trade weights that could occur due to large swings in crude oil prices. Our index is based on third-market competition, so it can thus be used to assess how exchange rate movements might affect Trinidad and Tobago's export market shares in key export markets. The AREER fluctuates much more than the IMF's REER and shows a higher degree of appreciation (Figure 2.2). It better captures competitiveness: despite nominal devaluations from 1988 until 1999, the AREER appreciated up to 1993 and thereafter depreciated, reflecting the pattern of currency changes of competitors in Trinidad and Tobago's export markets.

Figure 2.2: Different Real Effective Exchange Rate Measures

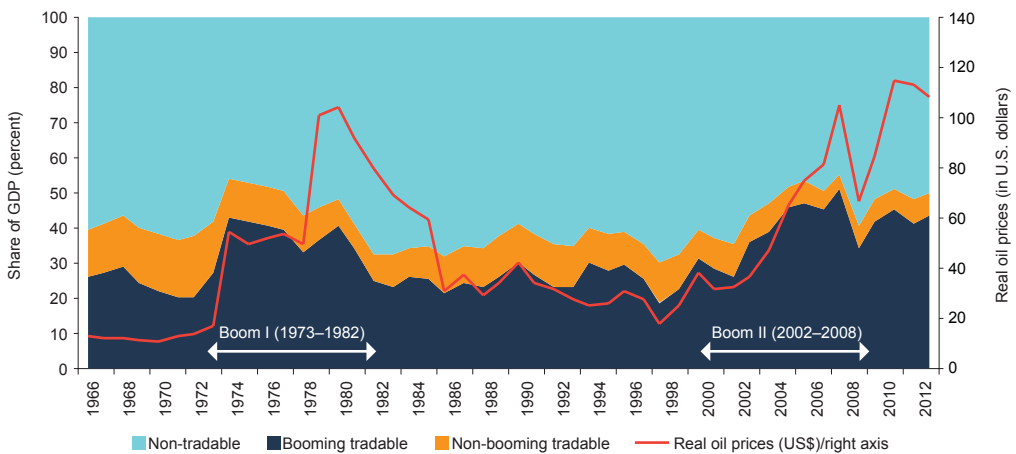


Source: Author's estimates based on the World Integrated Trade Solution database, the Central Statistical Office of Trinidad and Tobago, and the World Bank's World Development Indicators.

Note: AREER = adjusted real effective exchange rate; IMF = International Monetary Fund; LCU = local currency units; RCA = revealed comparative advantage.

Figures 2.3 and 2.4 show sectoral shifts in GDP and employment, respectively. In the presence of Dutch disease, one expects a decline in the manufacturing sector (de-industrialization) as per our discussion above. The data show that the shares of the non-booming tradable and non-tradable sectors (manufacturing and export agriculture) have declined relative to the booming tradable sector (Figure 2.5). In 1966, the booming tradable sector generated 26 percent of GDP; by 2013, its share of GDP had increased

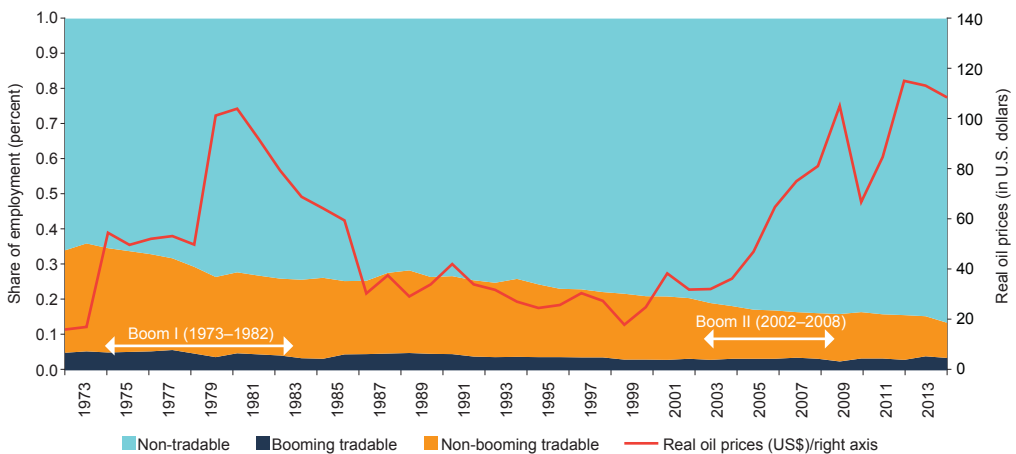
Figure 2.3: The Non-booming Tradable Sector Share in GDP Has Declined



Source: Central Bank of Trinidad and Tobago.

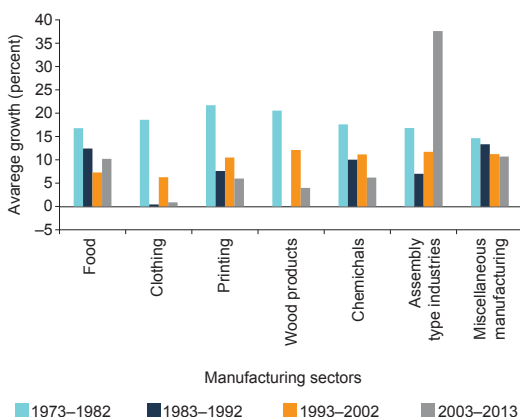
Note: Non-booming Tradable Sector = Manufacturing and Agriculture Sectors; Non-Tradable = Services Sector; Booming Tradable = Energy Sector.

Figure 2.4: The Services Sector Share in Employment Has Expanded



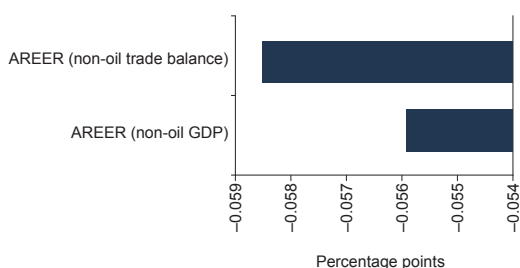
Source: Central Bank of Trinidad and Tobago.

Note: Non-booming Tradable Sector = Manufacturing and Agriculture Sectors; Non-Tradable = Services Sector; Booming Tradable = Energy Sector.

Figure 2.5: Manufacturing Sector Growth

Source: Author's estimates based on data from the Central Statistical Office, Trinidad and Tobago.

Figure 2.6: Effect of a Change in the Adjusted Real Effective Exchange Rate on Non-energy GDP Growth and Non-energy Trade Balance (in response to a standard deviation shock)



Source: Author's estimates based on data from the World Integrated Trade Solution database, the World Bank's World Development Indicators, and the Central Bank of Trinidad and Tobago.

Note: The figure is a simulation based on a vector error correction model with Model 1: AREER, Non-energy GDP. Three lags and rank = 1. AREER = adjusted real effective exchange rate.

to 44 percent. The non-booming tradable sector's share in GDP fell by more than twofold to 6 percent of GDP in 2013. The non-tradable sector share declined from 60 to 50 percent of GDP in 2013. A shift in the employment share is also observed, as employment in the non-tradable sector (i.e., services) increased but employment in the non-booming tradable sector declined. There were no significant changes in the booming tradable sector.

To be more precise about the effect of the overvalued real exchange rate on the non-energy sector, two exercises are performed (Figure 2.6). The first is an illustration of the relationship between the AREER and the number of non-energy products exported by Trinidad and Tobago. The second is an estimation of the effect of an appreciation of the AREER on non-energy GDP and the non-energy trade balance, using a cointegrated vector autoregression (VAR) model (Khadan and Ruprah 2016).

An inverse relationship between the AREER and the number of non-energy export products is found. As the AREER appreciates, the number of non-energy tradable products exported declines with a

lag. This could be an indication of the effect of an appreciation of the real exchange rate on the non-energy sector (Figure 2.2). Note that total non-energy exports have been filtered by the criterion that the product has a revealed comparative advantage (RCA) greater than unity (see Chapter 8 for further details). The RCA of a product is measured by the relative weight of a percentage of total exports of a commodity in

a country over the percentage of world exports of that commodity. When $RCA > 1$, it means that the country has a revealed comparative advantage for a given commodity. When $RCA < 1$, it means that the country has a revealed comparative disadvantage for a given commodity. A more formal way of examining the relationship between the AREER and the non-energy sector is to estimate the elasticity between them. Here a cointegrated VAR is used. The findings show that a one standard deviation increase in the AREER reduces non-energy GDP by -0.04 percentage points. The non-energy trade balance also weakens by 0.12 percentage points from a similar increase in the AREER.

2.3 Conclusion

This chapter has looked at the broad macroeconomic conditions that can affect private sector performance and success. The main objective was to determine whether Dutch disease affects the non-energy private sector. The findings from various exercises show the presence in Trinidad and Tobago of such symptoms of Dutch disease as an overvalued exchange rate, a falling relative share of the non-booming tradable sector (manufacturing and export agriculture), and an increasing employment share for the service sector (see also Primus 2016). Moreover, there is an inverse relation between the AREER and the number of non-energy products exported. Elasticity estimates show that a real appreciation of the exchange rate has a strong negative impact on the non-energy sector in terms of both trade and GDP. Both the adjusted REER (AREER) and the traditional REER have shown significant appreciation in recent years in Trinidad and Tobago, which could partly explain the poor performance of the non-energy sector.

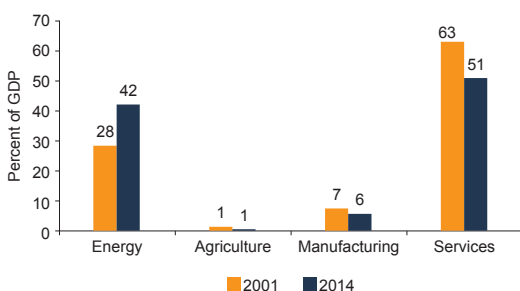
Profile and Performance of Firms

A typical question asked in the literature is whether a firm's characteristics affect its performance. The answer is that firm-specific attributes are indeed important determinants of performance. It has been found that smaller and younger firms perform better than larger and older ones, while foreign-owned firms show higher productivity levels than wholly owned domestic firms. There is also emerging evidence suggesting that limited-liability firms tend to have higher employment growth rates, which could potentially result in better sales in the future. In the case of Trinidad and Tobago, most firms are small and medium-sized enterprises that operate mainly in the service sector and are mature, locally owned, and set up in limited-liability form.

Other industry and economy-wide factors can also affect performance, so before proceeding to the firm-level data, the next section examines indicators at the industry level for Trinidad and Tobago's non-petroleum sector. Two factors are examined: investment and labour productivity. The next section looks at the performance of the non-petroleum sector, followed by investment and labour productivity. That is followed by a brief discussion of the profile of firms and a descriptive analysis of performance indicators in relation to firm-specific characteristics. The final section puts forth the chapter conclusions.

3.1 The Non-petroleum Sector

Although the non-petroleum sector should be considered an engine for sustainable growth, its share in overall GDP in Trinidad and Tobago has declined over the past decade. In 2014, the non-petroleum sector share of GDP was estimated at 62 percent, a decline from 72 percent in 2001. Within the non-petroleum sector, services are the dominant sub-sector, accounting for roughly 91 percent of non-petroleum GDP, followed by manufacturing (9 percent) and agriculture (1 percent) (Figure 3.1). There have been marginal changes in the importance of these sectors over the past 15 years. A more detailed look at the importance of non-petroleum sub-sectors

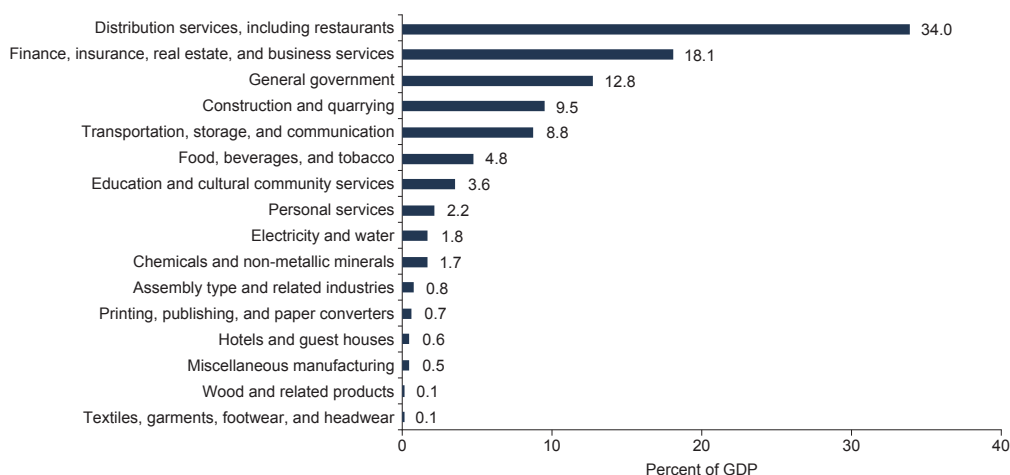
Figure 3.1: Structure of the Economy in Trinidad and Tobago, 2001 and 2014

Source: Central Bank of Trinidad and Tobago.

(Figure 3.2) shows that distribution services (including restaurants) account for 34 percent of non-petroleum GDP; followed by finance, insurance, and real estate (18 percent); general government (13 percent); construction and quarrying (9.4 percent); and transportation, communication, and storage (8.8 percent).

Non-petroleum sector growth has worsened since 2001. The average non-petroleum GDP growth rate has been lower than overall and petroleum sector growth, perhaps due to the energy boom of the 2000s. Over the past two decades (1995–2014), real GDP growth averaged 5.2 percent, petroleum sector growth averaged 6.7 percent, and non-petroleum sector growth averaged 4.6 percent. More recently, the average growth rate of the non-petroleum sector fell to 1.1 percent in the post-2008 period compared with 6.5 percent for 2003–2008.

In the past, the manufacturing and service sectors were the main drivers of growth, but these sectors have significantly contracted (Table 3.1). Figure 3.3 shows a more detailed breakdown of economic growth by sector for 2014. The data show that of the 16 non-petroleum sub-sectors, eight reported positive growth rates, and these were primarily in the service sectors: general government (9.4 percent), personal services (4.7

Figure 3.2: Share of Non-petroleum GDP

Source: Central Bank of Trinidad and Tobago.

percent), construction and quarrying (2.9 percent), agriculture (2.9 percent), hotels and guest houses (0.9 percent), and electricity and water (0.9 percent).

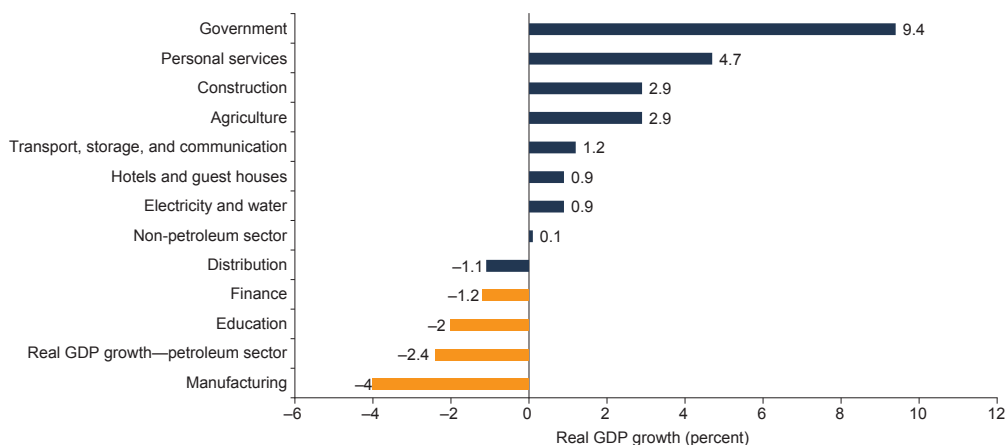
Table 3.1: Real GDP Growth by Sector (percent)

Year	Petroleum	Industry	Non-petroleum	Agriculture	Manufacturing	Services GDP (total)
2001	5.6	2.8	8.7	9.8	1.9	4.2
2002	13.5	4.8	8.7	3.8	4.9	7.9
2003	31.4	6.8	-15.3	12.2	6.6	14.4
2004	8.2	7.0	-34.2	8.1	7.7	8.0
2005	8.3	5.0	-5.4	13.5	4.1	6.2
2006	21.8	6.1	-10.1	10.8	5.6	13.2
2007	1.7	7.6	21.8	16.3	6.1	4.8
2008	-0.3	6.5	7.6	4.1	6.9	3.4
2009	-1.8	-4.9	-32.4	1.9	-5.7	-4.4
2010r	2.4	3.2	32.1	1.5	3.3	3.3
2011r	-3.9	3.2	0.3	-0.3	3.9	-0.3
2012r	-2.8	2.3	-12.6	0.9	2.7	1.3
2013r	1.3	2.6	-0.1	-1.0	3.3	2.3
2014r	-2.4	0.1	2.9	-4.0	0.7	-1.0
2015p	-3.4	2.3	4.4	1.3	2.5	0.2

Source: Central Bank of Trinidad and Tobago.

Note: r = revised; p = preliminary.

Figure 3.3: Real GDP Growth in the Non-petroleum Sector, 2014



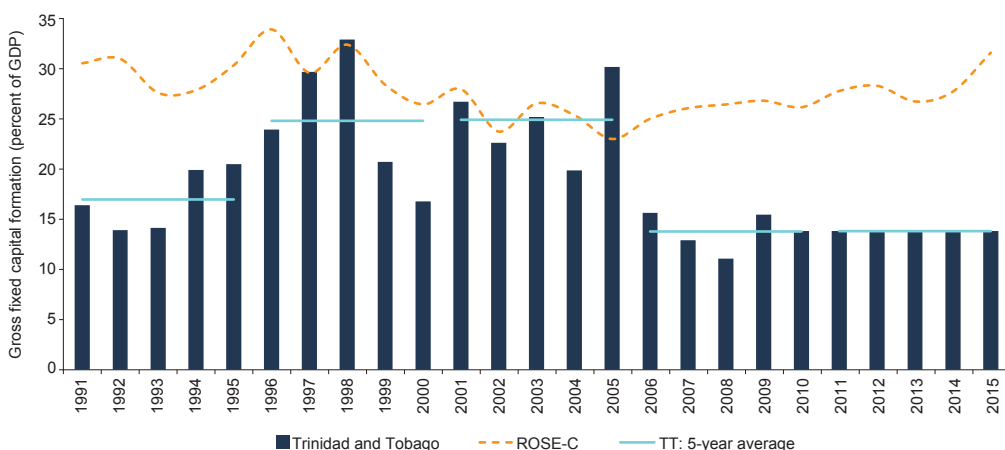
Source: Central Bank of Trinidad and Tobago.

3.1.1 Why Is Non-petroleum GDP Growth Low and Declining?

One of the most important constraints to growth is low levels of private investment, as explained in Hausmann, Rodrik, and Velasco (2007). Hence, this report examines the level and changes of private investment and foreign direct investment (FDI) in the non-petroleum sector for Trinidad and Tobago. One typically uses a benchmark for comparison when doing this exercise; in this case, we use the rest of the small economies of the world that are commodity-dependent (ROSE-C).¹ The data show that gross fixed capital formation deteriorated after 1998, the year when it peaked at 33 percent of GDP. Average investment over 2000–2004 was 22 percent of GDP. This declined further to 17 percent of GDP over 2005–2009, then stabilized lower at 14 percent of GDP. Although investment in Trinidad and Tobago recovered slightly after 2010, it remains relatively low and below that of ROSE-C (Figure 3.4). A similar trend is observed for private gross capital formation (Figure 3.5). It should be noted that FDI mainly goes to the petroleum sector (90 percent), and this has been the trend over the past two decades (Figures 3.6 and 3.7).

Labour productivity, which is also important for performance, is falling in Trinidad and Tobago. Shift-share analysis is used to decompose labour productivity growth into three components: the within-sector effect, the reallocation-level effect,

Figure 3.4: Gross Fixed Capital Formation

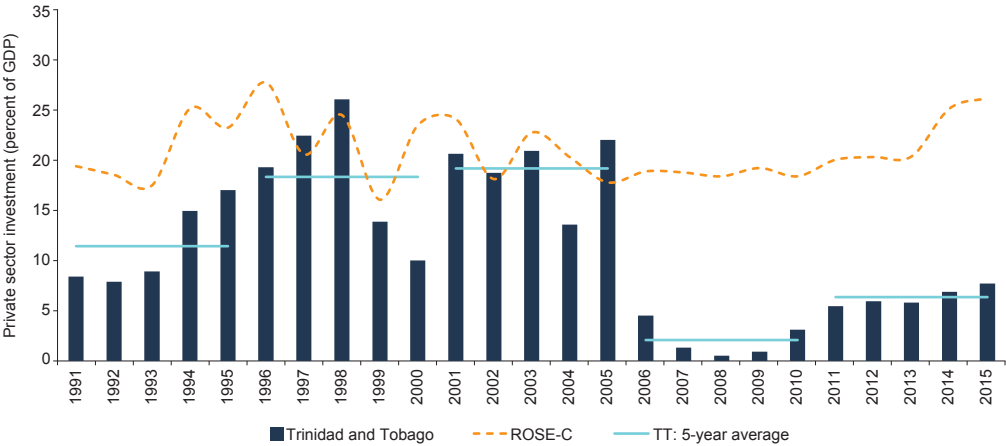


Sources: Central Bank of Trinidad and Tobago; World Bank, World Development Indicators.

Note: FDI = foreign direct investment; ROSE-C = rest of the small economies of the world that are commodity-dependent; TT = Trinidad and Tobago.

¹ ROSE-C countries include Bahrain, Belize, Brunei Darussalam, Bhutan, Botswana, Comoros, Djibouti, Estonia, Gabon, The Gambia, Equatorial Guinea, Iceland, Kiribati, Lesotho, Latvia, FYR of Macedonia, Mongolia, Namibia, Qatar, Solomon Islands, Slovenia, Swaziland, Timor-Leste, and Tuvalu.

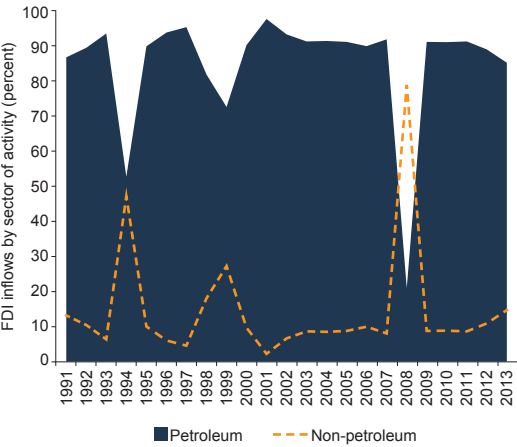
Figure 3.5: Private Gross Capital Formation



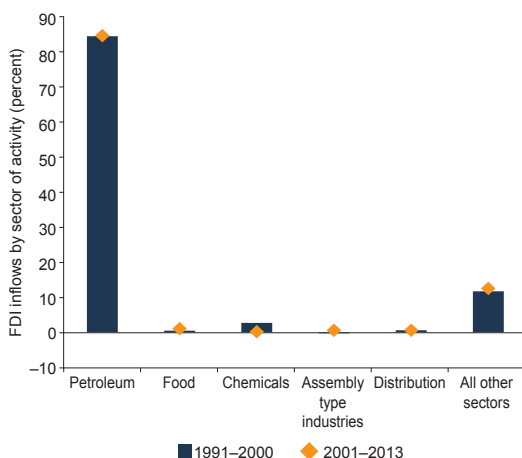
Sources: Central Bank of Trinidad and Tobago; World Bank, World Development Indicators.
Note: FDI = foreign direct investment; ROSE-C = rest of the small economies of the world that are commodity-dependent; TT = Trinidad and Tobago.

and the reallocation-growth effect (Meehan 2014). The within-sector effect measures the change in labour productivity within a sector; the reallocation-level effect measures the contribution of labour reallocation across sectors; and the reallocation-growth effect measures the reallocation of labour into sectors with growing productivity. This analysis presents the following results: first, labour productivity is decreasing (Figure 3.8); second, there are large differences in labour productivity between sectors (Figure 3.9); third, structural changes are negatively correlated to overall productivity resources (Figure 3.10); and fourth, almost all the change in productivity can be accounted for by the within-sector effect, with the reallocation-growth effect being negative. Figure 3.11 shows a four-way classification of the sectors, i.e., whether the sector has higher or lower relative productivity

Figure 3.6: Foreign Direct Investment in the Petroleum and Non-petroleum Sectors

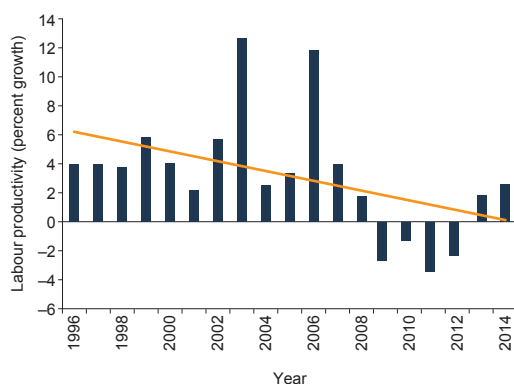


Sources: Central Bank of Trinidad and Tobago; World Bank, World Development Indicators.
Note: FDI = foreign direct investment; ROSE-C = rest of the small economies of the world that are commodity-dependent; TT = Trinidad and Tobago.

Figure 3.7: Foreign Direct Investment by Sector

Sources: Central Bank of Trinidad and Tobago; World Bank, World Development Indicators.

Note: FDI = foreign direct investment; ROSE-C = rest of the small economies of the world that are commodity-dependent; TT = Trinidad and Tobago.

Figure 3.8: Labour Productivity

Source: IDB staff estimates based on data from the Central Statistical Office, Trinidad and Tobago.

Note: pi = industry productivity; P = total productivity.

and whether the sector is attracting more or less labour. The results indicate that wholesale and retail trade (which account for 40 percent of firms in our sample and 33 percent of non-petroleum GDP), public administration, and transportation contribute negatively to labour productivity growth. This implies that either the sector's productivity is higher than national productivity but the employment share is falling, or the sector's productivity is lower than national productivity but the employment share is increasing. Other sectors are making a positive contribution.

In addition, a recent growth diagnosis of Trinidad and Tobago based on the framework of Hausmann, Rodrik, and Velasco (2007) derived several conclusions (Khadan 2016). Private sector investment is lower than comparator groups and is largely influenced by low returns to economic activity—i.e., low social returns and what is known as *low appropriability*.² With respect to social returns, evidence from benchmarking exercises suggests that performance indicators of human capital (education and health) and infrastructure are unfavourable and rank below comparators. Regarding

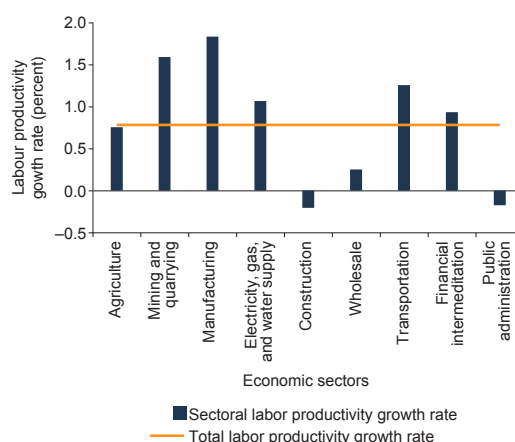
low appropriability, the main micro issues identified relate to governance, quality of institutions, crime, and severe data gaps, while the main macro risks include fiscal

² Low social returns are examined from the perspective of bad infrastructure, low human capital, and poor geography, while low appropriability looks at government (both micro and macro risks) and market failures.

sustainability and an overvalued exchange rate (Khadan and Ruprah 2016). Access to financing was also identified as a constraint despite the relatively low cost of financing.

Pulling together the various pieces of evidence shows that firms in Trinidad and Tobago have to contend with unfavourable industry- and economy-wide conditions. In the next section, firm-level evidence is used to examine the relationship between firm characteristics and performance.

Figure 3.9: Sectoral Productivity Gap, 1995–2014



Source: IDB staff estimates based on data from the Central Statistical Office, Trinidad and Tobago.

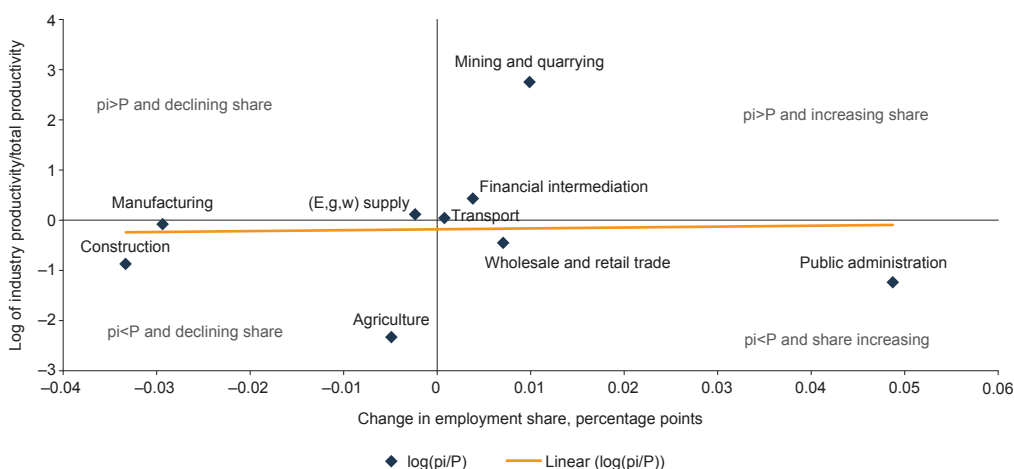
Note: π_i = industry productivity; P = total productivity.

3.2 Profile of Firms

This study uses a sample of 340

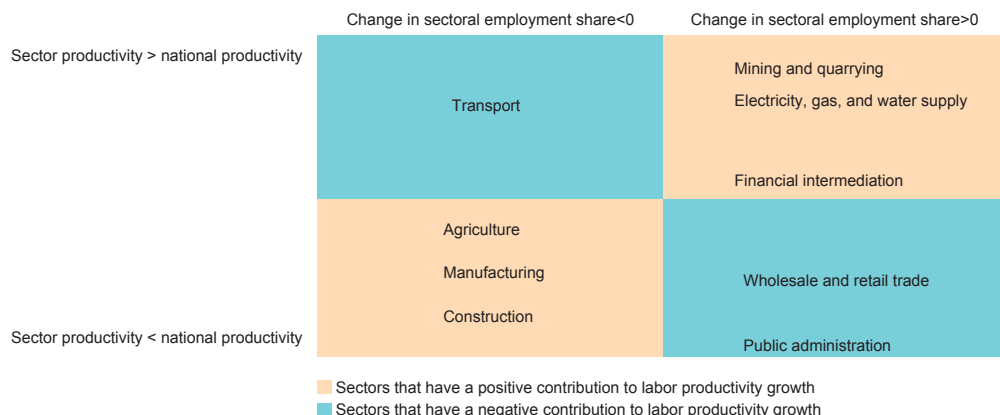
Trinidad and Tobago firms that vary by sector, size, age, legal form, and ownership. Before proceeding to examine their performance and constraints, a brief profile of the sample is provided.

Figure 3.10: Relative Productivity and Increasing Sectors



Source: IDB staff estimates based on data from the Central Statistical Office, Trinidad and Tobago.

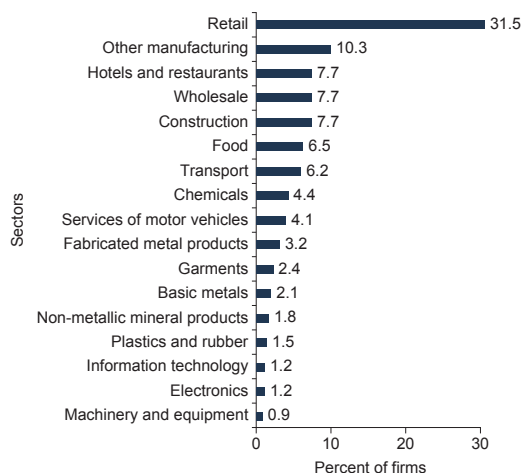
Note: π_i = industry productivity; P = total productivity.

Figure 3.11: Sectors and Their Contribution to Labour Productivity

Source: IDB staff estimates based on data from the Central Statistical Office, Trinidad and Tobago.

Note: π_i = industry productivity; P = total productivity.

- The firms used in this study were selected from two sectors: manufacturing and service.** The manufacturing and service sectors account for 34 percent and 66 percent of firms in the sample, respectively. The manufacturing sector includes the following industries: food, garments, chemicals, plastics and rubber, non-metallic mineral products, basic metals, fabricated metal products, machinery and equipment, electronics, and “other manufacturing.” The service sector includes retail, wholesale, information technology, hotels and restaurants, service of motor vehicles, construction, and transportation. In the manufacturing sector, most firms are other manufacturing (10.29 percent), food (6.5 percent), and chemicals (4.4 percent). In the service sector, retail accounts for 32 percent of firms, while construction, wholesale, and hotels and restaurants account for 7.7 percent each (Figure 3.12). The financial and informal sectors are not considered in this study.
- Firm size is measured by the number of employees in each firm.** Small firms are defined as those with less than 20 employees, medium-sized firms have between 20 and 100 employees, and large firms have more than

Figure 3.12: Profile of Firms by Sectors

Source: PROTEqIN Survey, 2014.

100 employees. Small firms make up 43 percent of the sample, medium-sized firms 35 percent, and large firms 24 percent. The distribution of firms by size across the various economic sectors is shown in Annex 2 at the end of this volume. The retail and manufacturing sectors account for 35 percent and 12 percent of small firms, respectively, and the retail and wholesale sectors account for 36 and 9 percent of medium-sized firms, respectively. Large firms are distributed mainly among retail (19 percent), food (13.3 percent), and other manufacturing (12 percent).

- **Firm age is measured by the number of years that the establishment has been formally registered.** A new firm is defined as one that has been established for less than three years, a young firm is between 3 and 10 years old, and a mature firm is older than 10 years old. The sample consists of 1 percent new firms, 23 percent young firms, and 77 percent mature firms.
- **Firm ownership is defined as local, foreign, and jointly owned.** In our sample, 87 percent of firms are locally owned, 3 percent are foreign-owned, and 10 percent are jointly owned.
- **Firms are also defined according to legal form.** Our sample consists of publicly listed companies (1 percent), private limited-liability companies (44 percent), sole proprietorships (27 percent), partnerships (8 percent), and limited partnerships (21 percent).

3.3 Firm-level Evidence

3.3.1 Performance of Firms

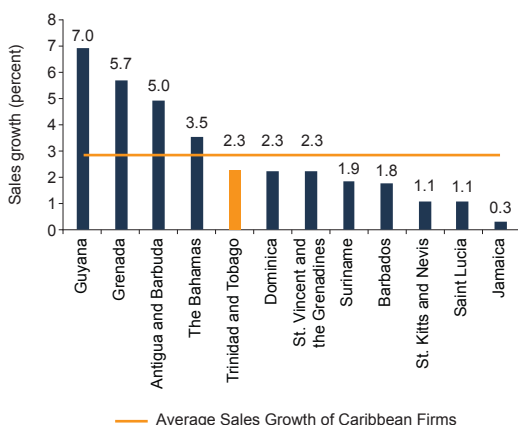
Firm performance is measured by sales growth and total factor productivity (TFP). In the previous section and in Chapter 2 some of the key challenges that firms have to contend with at the macroeconomic level were outlined. In order to assess performance at the firm level, two indicators are used: sales growth and TFP. Both measures are calculated for the 12 Caribbean countries that were covered in the Productivity, Technology and Innovation (PROTEqIN) Survey (Ruprah and Sierra 2016).³ Sales growth is calculated using the establishment's total sales for the period 2011-2012.⁴ The TFP indicator is estimated by Ruprah and Sierra (2016) using a Cobb-Douglas

³ The 12 countries covered in the PROTEqIN survey are Antigua and Barbuda, Barbados, Dominica, Grenada, Guyana, Jamaica, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, The Bahamas, and Trinidad and Tobago.

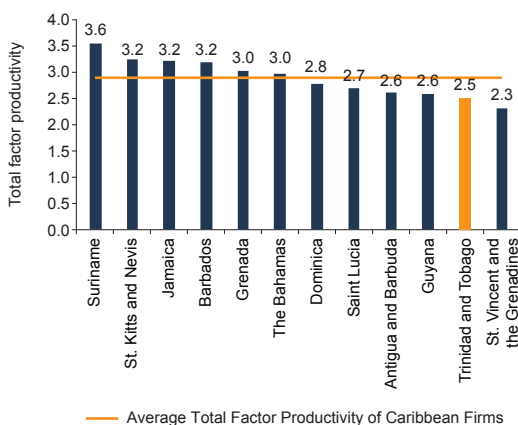
⁴ The formula used to calculate sales growth is given by

$$\frac{\frac{(S_{2011} - S_{2012})}{(S_{2011} + S_{2012})}}{2}$$

(Haltiwanger, Jarmin, and Miranda 2013).

Figure 3.13: Sales Growth by Country

Source: PROTEqIN Survey, 2014.

Figure 3.14: Total Factor Productivity by Country

Source: PROTEqIN Survey, 2014.

production function with three factors of production: capital, labour, and intermediate goods. Output is measured by firm sales; capital is measured by the replacement value of machinery, vehicles, and equipment; labour is measured by the total income of workers, including wages, salaries, and bonuses; and intermediate goods are determined by the cost of raw materials and intermediate materials (or the cost of finished goods and materials purchased for sale by retail sector firms). TFP is estimated as the residual term in the production function.

The performance of firms in Trinidad and Tobago is below the Caribbean average (Figures 3.13 and 3.14). Average sales growth for Trinidad and Tobago firms is 2.3 percent, below the Caribbean average of 2.8 percent. Four countries have above-average performances: Guyana reported the highest sales growth (7 percent), followed by Grenada (5.7 percent), Antigua and Barbuda (5 percent), and The Bahamas (3.5 percent). Trinidad and Tobago's average sales growth is on

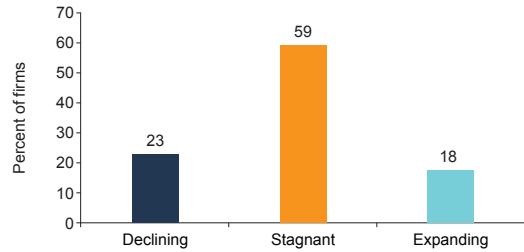
par with Dominica and St. Vincent and the Grenadines, but above Suriname, Barbados, St. Kitts and Nevis, St. Lucia, and Jamaica. Regarding TFP, although there are marginal differences among countries, firm-level TFP for Trinidad and Tobago is the second lowest of the 12 countries at 2.5, only better than St. Vincent and the Grenadines (2.3). Suriname has the highest TFP (3.6), followed by St. Kitts and Nevis (3.2) and Jamaica.

Most Trinidad and Tobago firms are either stagnant or declining, as defined by changes in sales growth (Figures 3.15 and 3.16). A more detailed picture of the performance of firms can be obtained by classifying firms according to expanding, stagnant,

or declining. Sales growth is used as the performance metric. The cut-off points for each category are $[-10, 0]$ for *declining* firms, $[0, 5]$ for *stagnant* firms, and $[5, 10]$ for *expanding* firms. With this classification, 82 percent of firms are classified as either stagnant (59 percent) or declining (23 percent), and 18 percent as expanding.

Most expanding firms are found in machinery and equipment, electronics, and non-metallic mineral products (Figure 3.16). Most firms in chemicals, basic metals, and garments are either stagnant or declining. In general, most firms in service-oriented sectors are either declining or stagnant. Looking at other firm-specific characteristics finds only small differences. In particular, more small firms are classified as stagnant or declining compared to large firms, while more mature firms are stagnant and declining compared to young firms (Figure 3.17). Regarding ownership, all foreign firms are classified as stagnant, while more partnerships and limited liability firms are classified as expanding compared with other types of legal forms (Figure 3.17).

Figure 3.15: Expanding, Declining, and Stagnant Firms in Trinidad and Tobago

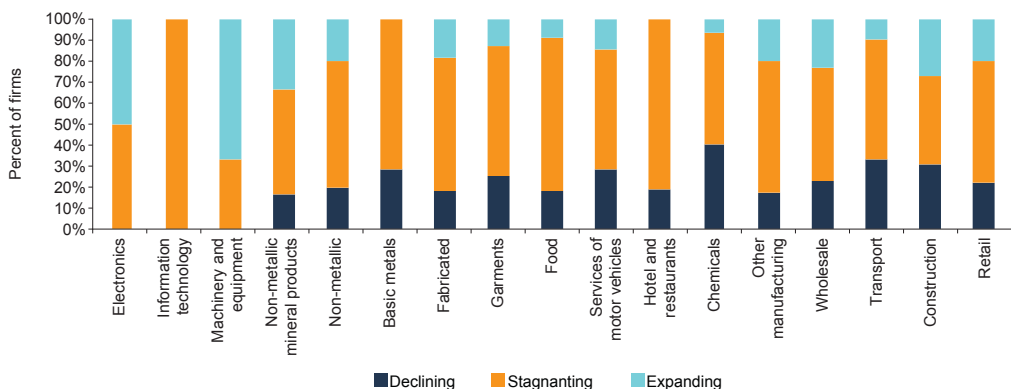


Source: PROTEqIN Survey, 2014.

3.3.2 Firm Characteristics and Performance

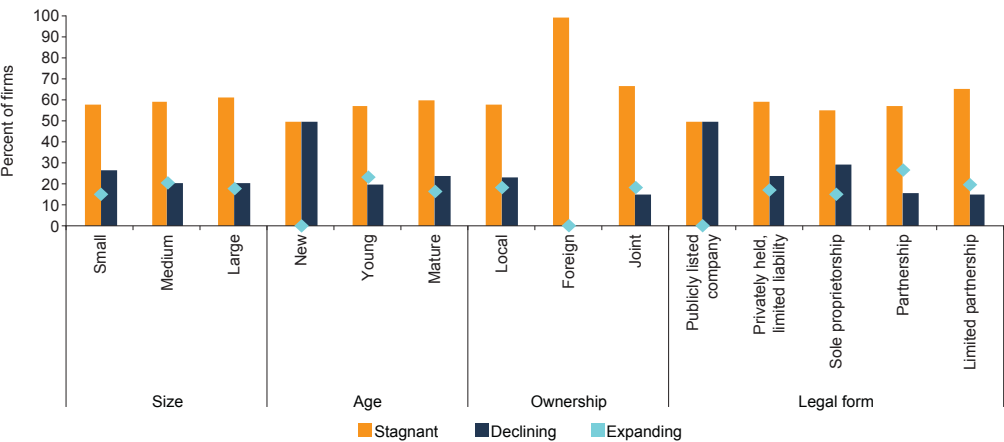
This section discusses the relationship between performance indicators (sales growth and TFP) and firm-specific characteristics (firm size, age, ownership, and legal form) in the context of the literature.

Figure 3.16: Expanding, Declining, and Stagnant Firms by Characteristics



Source: PROTEqIN Survey, 2014.

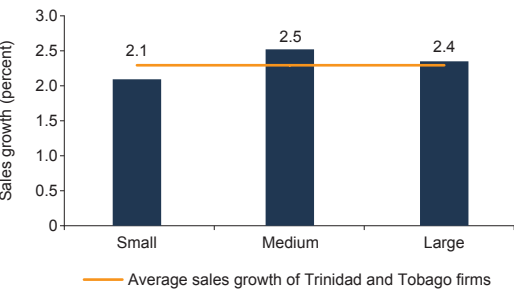
Figure 3.17: Expanding, Declining, and Stagnant Firms by Characteristics



Source: PROTEqIN Survey, 2014.

Medium-sized and large firms have higher sales growth. A point of reference in the literature on the relationship between firm size and growth is Gibrat’s law of proportionate effect. This law states that the growth rate of a firm is independent of its size at the beginning of the examined period (Gibrat 1931). However, recent research on the relationship between firm size and growth has rejected Gibrat’s law.⁵ In general, the literature has found that small firms grow faster than large firms (Coad 2008; Daunfeldt and Elert 2013; Hoxha 2008; Piergiovanni 2010). Contrary to recent literature, the data show that sales growth is marginally higher

Figure 3.18: Sales Growth and Firm Size



Source: PROTEqIN Survey, 2014.

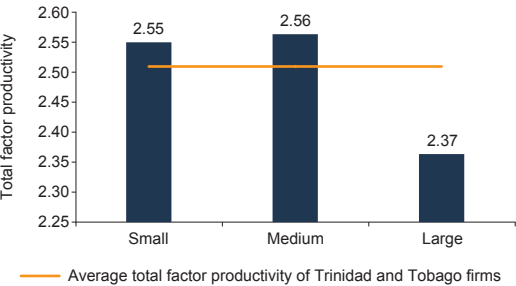
in medium-sized and larger firms (Figure 3.18). For small firms, sales growth is 2 percent, compared with 2.5 percent for medium-sized firms and 2.4 percent for large firms. With respect to TFP, however, small and medium-sized firms have relatively higher levels of TFP compared to larger firms (Figure 3.19). This, too, is contrary to previous findings. For example, Castany, López-Bazo, and

⁵ In a review of the literature on Gibrat’s law in developing and developed countries, Nassar, Almsafir, and Al-Mahrouq (2014) found that most of the empirical studies in developed countries rejected Gibrat’s law and suggested that a similar finding may be obtained in developing countries because of low labour costs.

Moreno (2005) observed differences in TFP across firm size, such that large firms have significantly higher TFP than small firms. They suggested that these differences can be explained by the distribution of and return to factors of production across firm size.

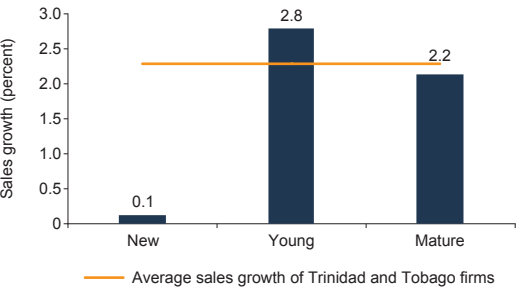
Young firms have higher sales growth and TFP than mature firms (Figures 3.20 and 3.21). Firm performance generally deteriorates with age (Coad, Segarra, and Teruel 2013). Daunfeldt and Elert (2013) found that high-growth firms were mostly younger firms (see also Haltiwanger, Jarmin, and Miranda 2013). Loderer and Waelchli (2010) suggested two possible explanations of how age affects performance: the rent-seeking hypothesis and organizational rigidities. The rent-seeking hypothesis suggests that as firms get older, individual groups that focus on appropriating quasi-rents from other parties within the firm emerge, which reduces activities that generate economic rents, thereby eroding overall firm performance. In addition, firms tend to introduce organizational measures and best practices as they mature, which contributes to organizational rigidities. This codification, although it helps the firm focus on core competencies, reduces flexibility and discourages change, which can contribute to a mature firm losing its competitive advantage (Loderer and Waelchli 2010). The data show that most mature firms

Figure 3.19: Total Factor Productivity and Firm Size



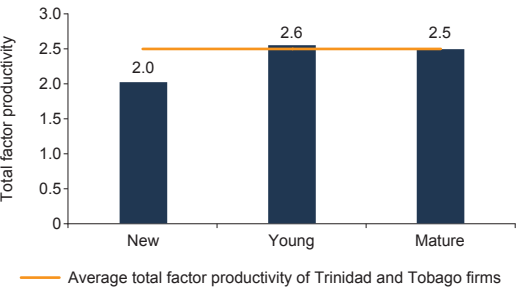
Source: PROTEqIN Survey, 2014.

Figure 3.20: Sales Growth and Firm Age

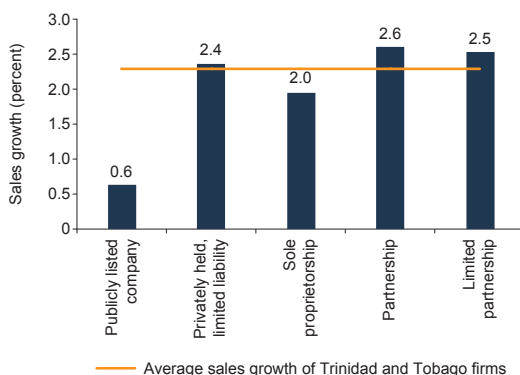


Source: PROTEqIN Survey, 2014.

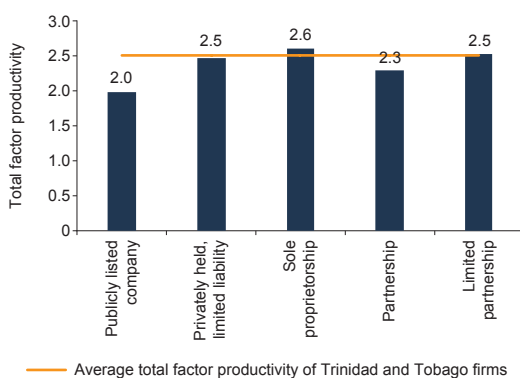
Figure 3.21: Total Factor Productivity and Firm Age



Source: PROTEqIN Survey, 2014.

Figure 3.22: Sales Growth and Legal Form

Source: PROTEqIN Survey, 2014.

Figure 3.23: Total Factor Productivity and Legal Form

Source: PROTEqIN Survey, 2014.

in Trinidad and Tobago have lower sales growth and relatively lower TFP.

3.3.3 Firm Legal Status, Ownership, and Performance

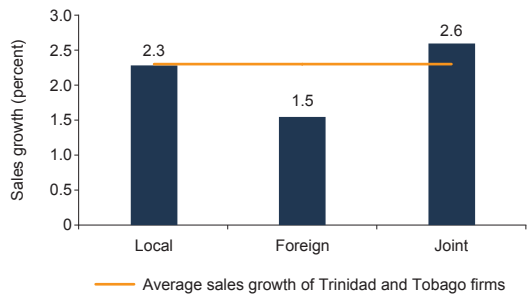
Limited liability firms perform better than other types of firms (Figures 3.22 and 3.23). Several studies that examined the relationship between legal form and new firm performance found that limited-liability firms exhibit higher employment growth rates than unlimited-liability firms such as sole proprietorships and partnerships (Junge and Retana 2014). For Trinidad and Tobago, sole proprietorships and publicly listed companies report sales growth below the average for all firms. Partnerships report the highest sales growth (2.6 percent), followed by limited partnerships and privately held limited-liability companies (2.5 percent each). With respect to TFP, sole proprietorships report the highest level of TFP, followed by limited partnerships and privately held limited liability companies.

Foreign-owned firms perform better than domestic firms (Aitken and Harrison 1999). In a study of more than 4,000 Venezuelan firms, Aitken and Harrison (1999) found that foreign ownership is correlated with productivity improvements, particularly for small plants. However, these authors observed that increased foreign ownership has a large negative effect on domestic firms in the same industry. Arnold and Javorcik (2009) also found that foreign ownership improves productivity in the same year of acquisition, and the effect continues for subsequent years (see also Petkova 2009). However, the data for Trinidad and Tobago show that jointly owned firms tend to have higher sales growth and TFP than wholly owned domestic and foreign-owned firms. Also, local firms' have higher sales growth and TFP than foreign firms, contrary to the literature (Figures 3.24 and 3.25).

3.4 Conclusion

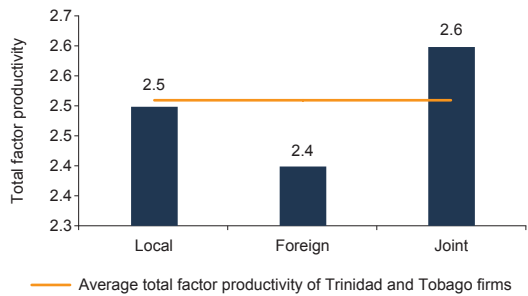
This chapter has examined the performance of the non-petroleum sector and the profile and performance of firms in Trinidad and Tobago. The findings show that the non-petroleum sector’s growth has declined significantly since the global financial crisis. Private investment, a key driver of growth, is lower than expected, and the evidence points to declining labour productivity. Moreover, a growth diagnosis of the Trinidad and Tobago economy suggests that human capital, access to financing, institutional weaknesses, infrastructure, and an overvalued exchange rate are among the main factors contributing to low levels of investment and hence low growth of the non-petroleum sector. Firm characteristics are mostly unfavourable for increasing sales and total factor productivity, which are both important for positioning the private sector as a driver of sustainable economic growth. In addition, the evidence shows that most firms are either stagnant or declining.

Figure 3.24: Sales Growth and Ownership



Source: PROTEqIN Survey, 2014.

Figure 3.25: Total Factor Productivity and Ownership



Source: PROTEqIN Survey, 2014.

Perceived Obstacles Affecting the Performance of Firms

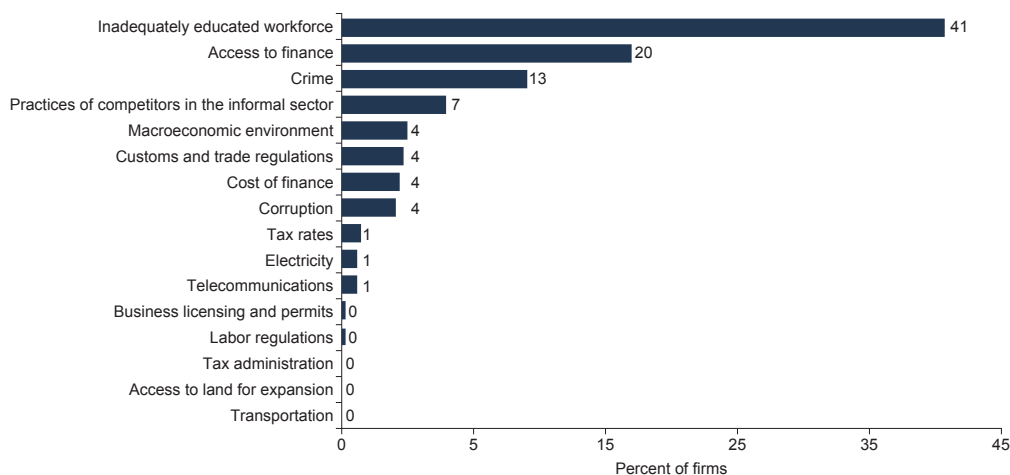
This chapter examines the results of the 2014 Productivity, Technology and Innovation (PROTEqIN) Survey to identify the most important obstacles that affect firm performance in Trinidad and Tobago. The literature has identified many factors that weigh negatively on firm growth, including telecommunications, electricity, transportation, access to land, tax rates, tax administration, customs and trade regulations, labour regulations, the workforce, business regulation, access to finance, the cost of finance, the political environment, and the informal sector (see Fiestas and Sinha 2011 for a survey of the literature). Many of these factors affect the day-to-day operations and long-term performance of firms.

4.1 The PROTEqIN Survey

The PROTEqIN survey asked firms to identify and rank the most important obstacles affecting their operations on a scale of 0 (no obstacle) to 4 (very severe obstacle). Figure 4.1 examines those factors that firms rank as major or very severe obstacles.

The ranking of obstacles by firms suggests the following obstacles in order of importance: macroeconomic environment, cost of finance, labour regulations, inadequately educated workforce, tax administration, crime, practices of competitors in the informal sector, telecommunications, electricity, political environment, corruption, business licensing and permits, transportation, electricity, access to finance, tax rates, customs and trade regulations, and access to land for expansion.

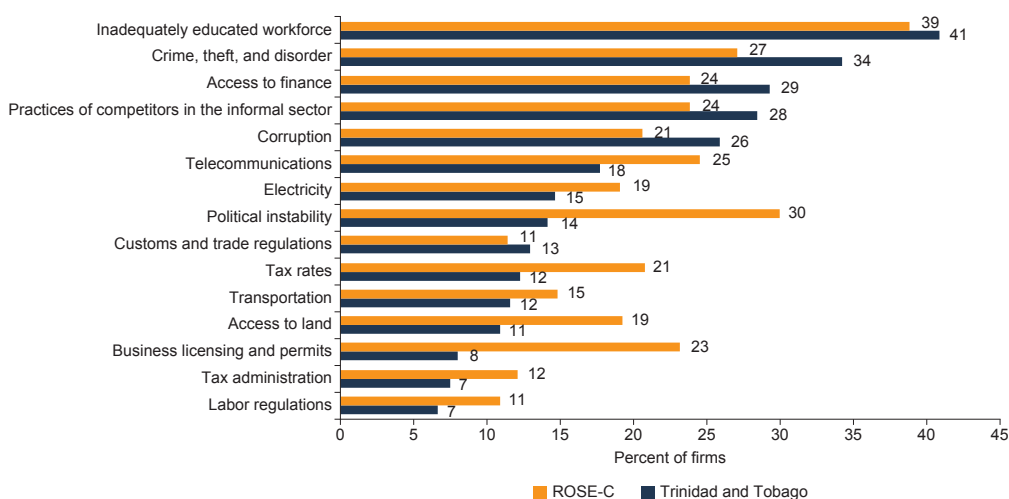
Firms were then asked to further identify the most serious obstacle and the second and third most serious obstacles to their performance. In this second iteration of ranking obstacles, firms identified the following factors as the most serious obstacle to their operations: an inadequately educated workforce (41 percent), access to finance (20 percent), crime (13 percent), practices in the informal sector (7 percent), macroeconomic environment (4 percent), customs and trade regulations (4 percent),

Figure 4.1: Most Serious Obstacles Affecting Business Operations in Trinidad and Tobago, 2014

Source: IDB staff estimates based on the 2014 Productivity, Technology, and Innovation Survey.

corruption (4 percent), cost of finance (4 percent), tax rates (1 percent), electricity (1 percent), and telecommunications (1 percent).

As can be seen, the three most serious obstacles identified by roughly 75 percent of firms were an inadequately educated workforce, access to finance, and crime. These factors are very similar to those reported in the 2010 World Bank Enterprise Survey (Figure 4.2),

Figure 4.2: Most Serious Obstacles Affecting Business Operations in Trinidad and Tobago, 2010

Source: IDB staff estimates based on the 2010 World Bank Enterprise Survey.

Note: ROSE-C: Rest of the small economies of the world that are commodity-dependent.

which also compared the most serious obstacles in Trinidad and Tobago with a comparator group, the rest of the small economies of the world that are commodity-dependent (ROSE-C). The most serious obstacles affecting firms' operations, as identified in Figure 4.1, are analysed in the rest of this report.

4.2 Conclusion

This chapter has introduced and summarized the main obstacles affecting business operations in Trinidad and Tobago based on the perceptions of businessmen. The findings from two surveys, the 2010 World Bank Enterprise Survey and the 2014 PROTEqIN Survey, shows that the top three challenges facing firms are: (1) an inadequately educated workforce, (2) access to finance, and (3) crime and security. The rest of this report will focus on analysing these perceptions.

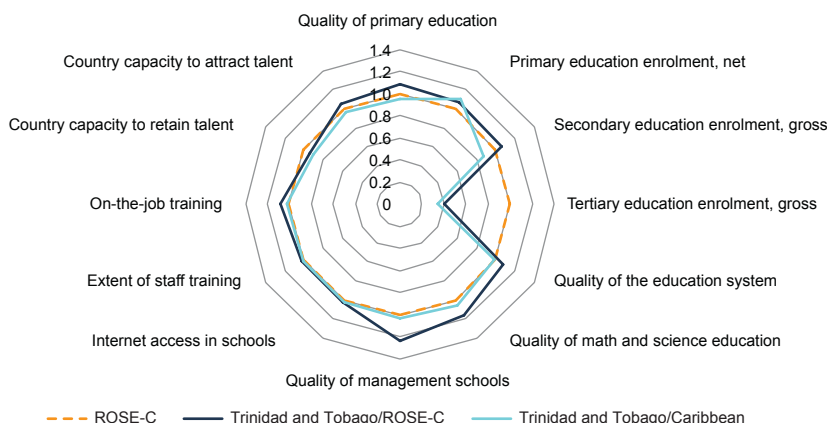
Human Capital

Education and training are important determinants of firm performance (Marimuthu, Arokiasamy, and Ismail 2009). The literature suggests that a firm's productivity increases with the quality of its human capital stock (Mincer 1997). Education enhances a firm's performance in two main ways: first, through the level of education of the workforce, and second, through the level of education of entrepreneurs (Doms, Ethan, and Robb 2010). With respect to the former, educated workers tend to have better access to information and knowledge, which is found to be associated with improved firm outcomes. Firms with relatively more educated owners are found to perform better in terms of sales and profits and are likely to have better survival rates (Fairlie and Robb 2008). Moreover, empirical evidence has shown that the educational levels of employees have a statistically significant and positive effect on firm growth (Li et al. 2014).

This chapter examines the issue of human capital as it relates to firms in Trinidad and Tobago. First, key indicators of the country's educational performance relative to other countries and over time are examined in order to determine what changes have occurred with respect to enrolment rates and output quality. Then firm-level data are used to determine whether skill gaps exist at different levels of educational attainment. A similar assessment is made by job types. How firms respond to the labour constraint is also examined in relation to performance indicators.

5.1 Context

In the 2014 Productivity, Technology and Innovation (PROTEqIN) Survey and the 2010 World Bank Enterprise Survey, firms in Trinidad and Tobago perceived an inadequately educated workforce as their main constraint. Although this constraint seems a bit paradoxical given the country's significant investments in education and training over the past two decades, it is consistent with the private sector sentiments of previous surveys. However, perception-based indicators from the World Economic Forum show that education quality and training are better in Trinidad and Tobago relative to the rest of the

Figure 5.1: Businesspersons' Perceptions of Education and Training Indicators

Source: World Economic Forum, 2015.

Note: ROSE-C = rest of the small economies of the world that are commodity-dependent.

small economies of the world that are commodity-dependent (ROSE-C) (Figure 5.1). Given the different indicative responses from perception-based measures, it is important to examine this issue using objective data. The inability of firms to access an adequately educated workforce could be explained by several factors, some of which are related. These include a decline in enrolment rates in education and training programs, the quality of education, migration or “brain drain,” skill shortages and mismatches, and poor labour market intermediation systems. This section examines the first three issues. Using firm-level evidence, the latter two issues are assessed in the section that follows.

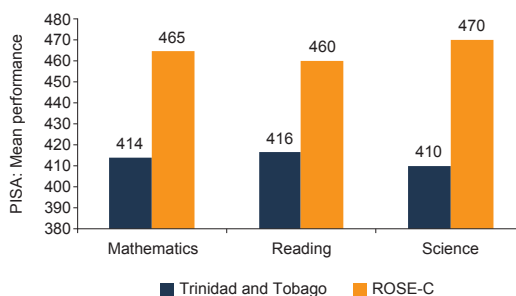
What has happened to enrolment rates? Trinidad and Tobago has provided several avenues for its citizens to access education and training. The key initiatives include universal education (from early childhood care and education to secondary schools), subsidized tertiary-level education and vocational training, and the provision of scholarships for citizens to study at local and international tertiary-level institutions. These initiatives have resulted in improved enrolment rates at primary, secondary, and tertiary levels. In fact, Trinidad and Tobago achieved universal access to primary education in the 1960s and universal secondary education in 2000, with a gross enrolment rate of 89 percent and an average net enrolment ratio of 78 percent in 2011 (Jackson 2015). However, it is estimated that about 18 percent of 16-year-olds drop out of secondary education before taking the Caribbean Secondary Education Certificate (CSEC) examinations (Jackson 2015). Enrolment at the tertiary level has improved, as reflected in a doubling of the share of tertiary-level educated persons in the labour force.¹

¹ In 2014, 15 percent of the labour force had a tertiary level of education compared with 7 percent in 2000 (University of the West Indies 2015).

What do performance indicators say about education quality? Trinidad and Tobago was ranked 48th out of 61 on the Program for International Student Assessment (PISA) (Figure 5.2). Performance in reading, mathematics, and science is much lower when compared with other small economies. Student performance on the CSEC examinations is low and declining when compared with the country's regional comparators (IDB 2015). In 2005, almost 38 percent of the students sitting the CSEC examinations received a passing grade in mathematics (i.e., grades 1–3). By 2013, this number had declined to 34 percent. Pass rates in English have a better showing in general but have recently declined (Figure 5.3).

Is emigration of labour a problem? The data show that through emigration, Trinidad and Tobago has lost more than 22 percent and 79 percent of the stock of secondary- and tertiary-educated citizens, respectively (Mishra 2006). This emigration not only reflects the country's relatively lower returns to education with respect to Organisation for Economic Co-operation and Development (OECD) countries, but also constitutes a huge loss of social investment, considering that primary, secondary, and tertiary education is almost entirely financed with public funds (Table 5.1).² Furthermore, unlike other countries experiencing this phenomenon, Trinidad and Tobago's levels of remittances are extremely low, at 0.3 percent of GDP over 1980–2012.

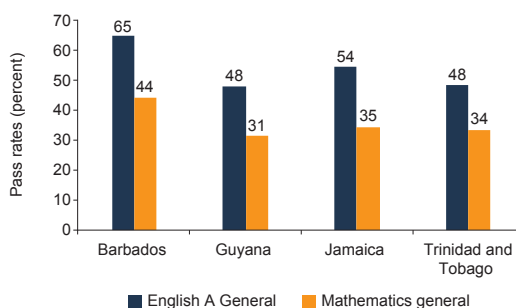
Figure 5.2: Program for International Student Assessment (PISA) Scores, 2009



Source: Organisation for Economic Co-operation and Development.

Note: ROSE-C = rest of the small commodity dependent economies of the world.

Figure 5.3: English and Mathematics Pass Rates, 2014



Source: Caribbean Examination Council.

² With respect to private returns to education, based on a Mincer equation, the following characteristics are observed: increasing returns for each additional year of education are only observed from 12 years of education and beyond. Labour markets in Trinidad and Tobago value education if at least compulsory secondary school has been completed (i.e., five years of secondary school or 12 years of overall schooling). For this group, the schooling premium amounts to 47 percent in terms of labour income with respect to the omitted group of persons with no primary education. This premium does not vary with the two extra secondary school years of education leading to the Caribbean Advanced Proficiency Examination (CAPE). However, obtaining a university degree (equivalent to completing 17 years of overall education) increases the premium to 71 percent (IDB 2016b).

Table 5.1: Caribbean: Emigration and Remittances (percent)

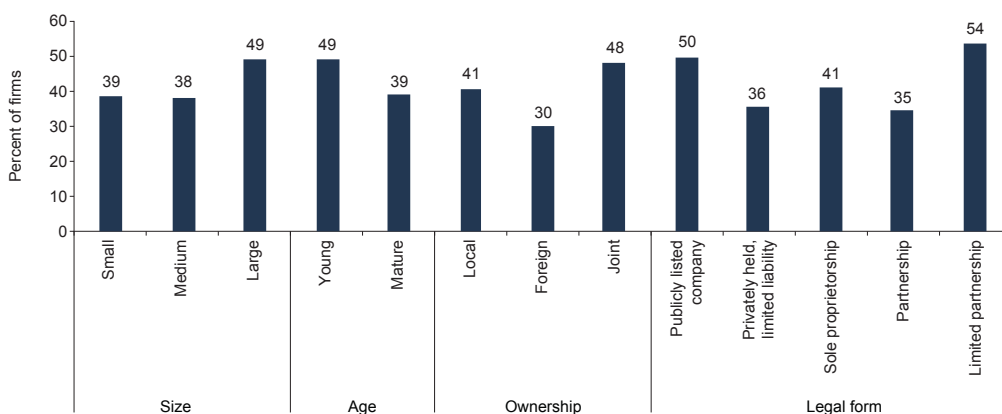
	Percent of Labour Force That Has Migrated to OECD Countries by Education Level		Emigration Loss Plus Estimated Education Expenditure (percent of GDP)	Remittances (percent of GDP, average 1980–2012)
	Secondary	Tertiary		
The Bahamas	10	67	4.4	n.a.
Barbados	28	61	8.4	4.7
Guyana	43	85	6.1	1.9
Jamaica	35	89	12.7	7.4
Suriname	74	48	n.a.	n.a.
Trinidad and Tobago	22	79	8.9	0.3
OECS	50	72	6	6.8
C6	35	72	8.1	3.6
Average	43	72	7	5.4

Source: Mishra (2006).

Note: C6 = The Bahamas, Barbados, Guyana, Jamaica, Suriname and Trinidad and Tobago; n.a. = not available; OECD: Organisation for Economic Co-operation and Development; OECS = Organisation of Eastern Caribbean States.

5.2 Firm-level Evidence

Figure 5.4 shows the percentage of firms that report an inadequately educated workforce as a major obstacle to their performance. This problem affects most firms regardless of their individual characteristics. In terms of firm size, 49.4 percent of large firms consider an inadequately educated workforce to be a major obstacle compared with roughly 38 percent of small and medium-sized firms. Young firms are affected the most (49.3 percent) compared with mature firms (39.5 percent). In terms of

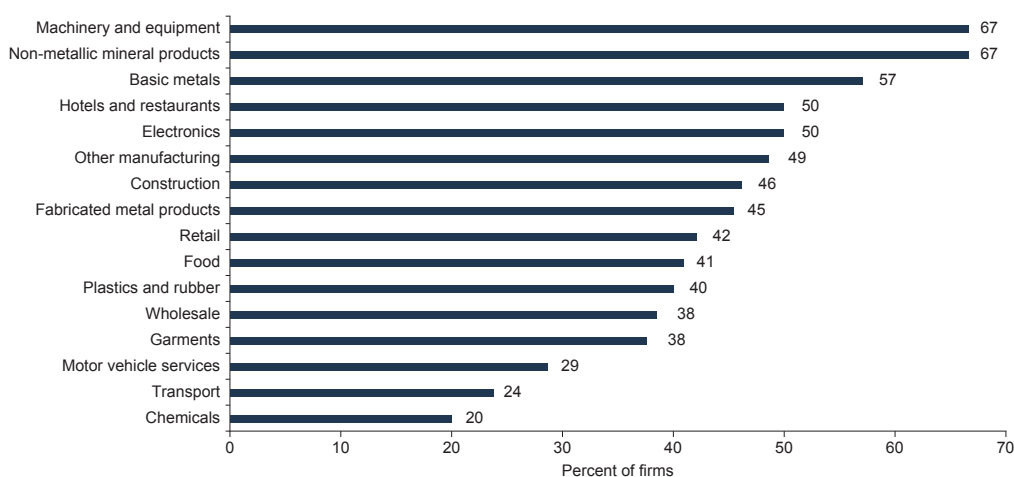
Figure 5.4: Firms Affected by an Inadequately Educated Workforce (percent of firms)

Source: PROTEqIN Survey, 2014.

ownership, 48 percent of jointly owned and 41 percent of local firms report that an inadequately educated workforce affects their performance, compared with 30 percent of foreign-owned firms. This finding is consistent with literature that suggests that on average, foreign firms are in a relatively better financial position to attract quality workers (Hijzen, Martins, and Schank 2010). Almost half of all firms operating in six different industrial and service sectors reported that an inadequately educated workforce affects their performance. Those sectors are food, garments, chemicals, plastics and rubber, non-metallic mineral products, basic metals, fabricated metal products, and other manufacturing (Figure 5.5).

The complaint by firms of an inadequately educated workforce can be the result of different factors and, for that reason, it is important to examine those factors in the context of Trinidad and Tobago. One possible factor is skill shortages, which refers to a situation where there is an undersupply of certain specific job-related skills for particular occupations (Cappelli 2015). Another factor is skill mismatches that occur when the supply and the demand for skills are not synchronized in either direction—oversupply or undersupply. Apart from these two factors, a third factor that can help explain why firms are unable to access adequately educated workers is an ineffective labour market intermediation system. This means that there are no effective mechanisms in place to facilitate, inform, or regulate how workers are matched to firms, how work is accomplished, and how conflicts are resolved (Autor 2004). In such a situation, even in the absence of skill mismatches or shortages, labour demand and supply do not match up. The following sections examine each of these factors in turn.

Figure 5.5: Inadequately Educated Workforce in Firms in the Industrial and Service Sectors



Source: PROTEqIN Survey, 2014.

5.2.1 Is There a Skill Gap in Trinidad and Tobago?

The 2014 PROTEqIN Survey asked firms to identify the minimum required level of education and the average level of education of their workforce by job type. This information allows us to determine the extent to which firms are hiring workers with the appropriate level of education for the nine different job types identified in Table 5.2. For managers, 85 percent of firms require candidates with a university degree, while 15 percent prefer post-graduate qualifications. Most firms (88 percent) demand a university degree for professionals. Jobs in craft and related trades require candidates who have completed secondary education with vocational training, while a secondary education is the minimum for elementary jobs. In addition, most firms report that secondary education and vocational training is the minimum level required for plant and machine operators, skilled agricultural jobs, forestry and fishery workers, service and sales workers, clerical workers, and technicians and associated professionals. In summary, given the distribution of job types available, firms require candidates with secondary education, secondary education and training, and university graduates.

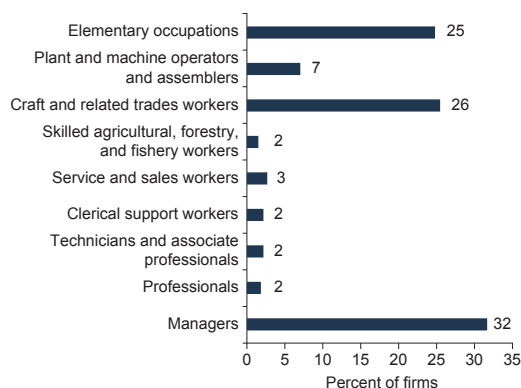
There is evidence of skill/education shortages in some job types. For managers, the data show that the minimum level of education required—post-graduate and university graduate—is not fully obtained by all firms: 27 percent of firms indicated that the average level of education for managers in their workforce is below the minimum required. For professionals, a similar picture emerges: 18 percent of firms indicated that the average level of education is below the university graduate and post-graduate levels. University graduates tend to dominate a number of job categories—including technicians and associate professionals, clerical support workers, service and sales workers, and (to a lesser extent) skilled agricultural, forestry, and fishery workers—for which the minimum level of education required is below a university degree. For elementary occupations, firms require completed secondary school, but only 35 percent of firms find workers with that level of education. Most firms report an average level of education that is below the minimum. Plant and machine operator and assembler jobs require completed secondary education and completed college and vocational training. However, only 50 percent of firms indicate an average level of education equivalent to the minimum required, with the remainder of firms reporting a lower average level of education.

Skill mismatches at the educational level are further assessed using data from the 2014 PROTEqIN Survey and Trinidad and Tobago's labour force survey. Labour demand is estimated using data derived from the 2014 PROTEqIN Survey. The survey asked firms to report the number of employees by job type and the minimum level of education required for each position. This information is used to estimate a distribution of labour demand differentiated by a minimum level of education. On the supply side, Trinidad and Tobago's 2014 labour force survey is used, which reports

Table 5.2: Required Minimum Education and Average Education (percent)

Average level of education	Managers	Professionals	Technicians and Associate Professionals	Clerical Support Workers	Service and Sales Workers	Skilled Agricultural, Forestry, and Fishery Workers	Craft and Related Trades Workers	Plant and Machine Operators, and Assemblers	Elementary Occupations
Completed primary	0	0	0	0	0	0	0	0	27
Started but did not complete secondary	0	0	0	0	0	0	0	45	39
Completed secondary	11	0	19	17	18	25	23	24	35
Completed college/vocational training	16	18	22	29	31	48	57	26	0
University graduate	59	71	59	54	51	28	19	5	0
Post-graduate (Masters, Ph. D)	14	11	0	0	0	0	0	0	0
Minimum level of education									
Completed primary	0	0	0	0	0	0	0	0	0
Started but did not complete secondary	0	0	0	0	0	0	0	0	0
Completed secondary	0	0	10	7	9	26	36	65	100
Completed college/vocational training	0	0	90	93	91	74	64	35	0
University graduate	85	88	0	0	0	0	0	0	0
Post-graduate (Masters, Ph. D)	15	12	0	0	0	0	0	0	0

Source: PROTEqIN Survey, 2014.

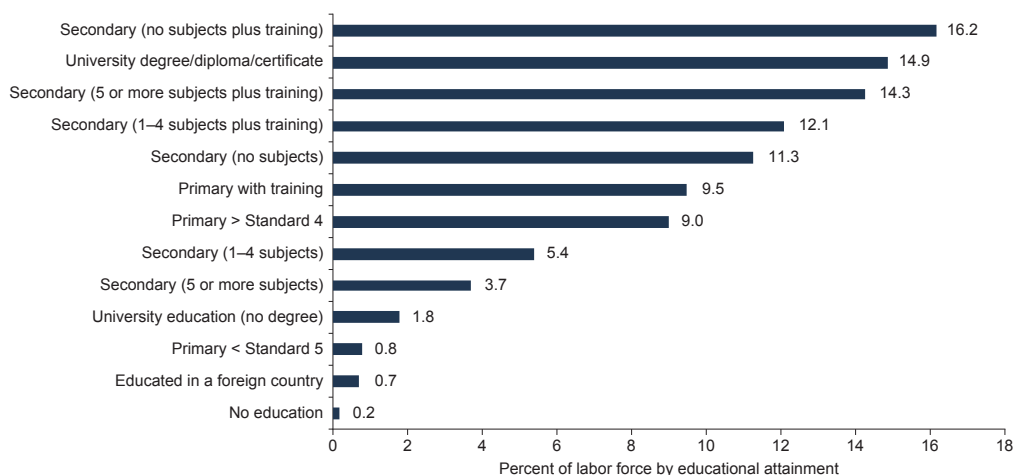
Figure 5.6: Composition of Labour Force by Educational Attainment

Sources: PROTEqIN Survey, 2014; and the Central Statistical Office of Trinidad and Tobago.

information on the labour force differentiated by the maximum level of education attained to construct a measure for labour supply.

The evidence suggests an under-supply of workers with university degrees, secondary education, and secondary education with training (Figure 5.6). More than 90 percent of employment falls into four job types: managers, craft and related trade workers, plant and machine operators, and elementary occupations (Figure 5.7). This includes 32 percent of workers employed as managers, 26 percent in craft and

related trade occupations, 25 percent in elementary occupations, and 7 percent as plant and machine operators. However, almost 60 percent of the labour force does not satisfy the minimum requirements for the four major job types identified (Figure 5.8). According to the data, although 63 percent of the labour force has at least completed secondary school, their educational attainment is well below what the labour market requires. Candidates are considered to have obtained a full secondary education certificate if they passed five subjects, including mathematics and English. However,

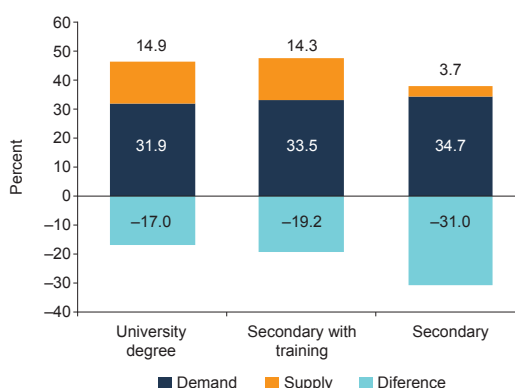
Figure 5.7: Employment by Job Type (percent)

Sources: PROTEqIN Survey, 2014; and the Central Statistical Office of Trinidad and Tobago.

45 percent of persons completing secondary education have not obtained this minimum level of secondary education. In particular, 11.3 percent of the workforce passed no subjects at the CSEC level despite completing secondary school, 16.2 percent passed no subjects but attained some level of training, 12.1 percent passed one to four subjects with training, and 5.4 percent passed one to four subjects only. In addition, almost 20 percent of the workforce has not attained a secondary level of education. More than 90 percent of firms have reported a preference for candidates with foreign post-secondary education, but this category accounts for less than 1 percent of the workforce.

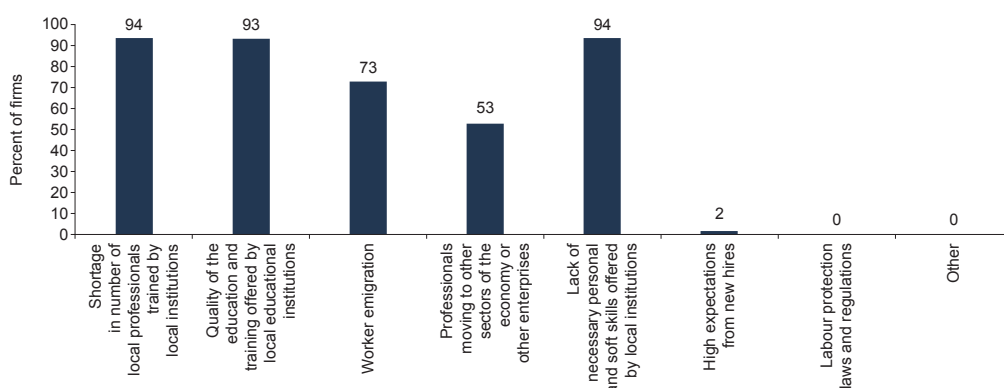
What are the underlying reasons for the existing skill mismatches? To answer this question, we use firm-level data from the 2014 PROTEqIN Survey, which asked firms to identify the main factors causing a skills gap in Trinidad and Tobago. Most firms identified four factors (Figure 5.9): (1) a shortage in the number of local professionals trained by local institutions, (2) a lack of necessary personnel with soft skills offered by local institutions, (3) the quality of education and training offered by local educational institutions, and (4) worker emigration. Most of these factors are consistent with the

**Figure 5.8: Labour Demand and Supply
Differentiated by Educational Level**



Sources: PROTEqIN Survey, 2014; and the Central Statistical Office of Trinidad and Tobago.

Figure 5.9: Reasons for Skill Mismatches (percent of firms)



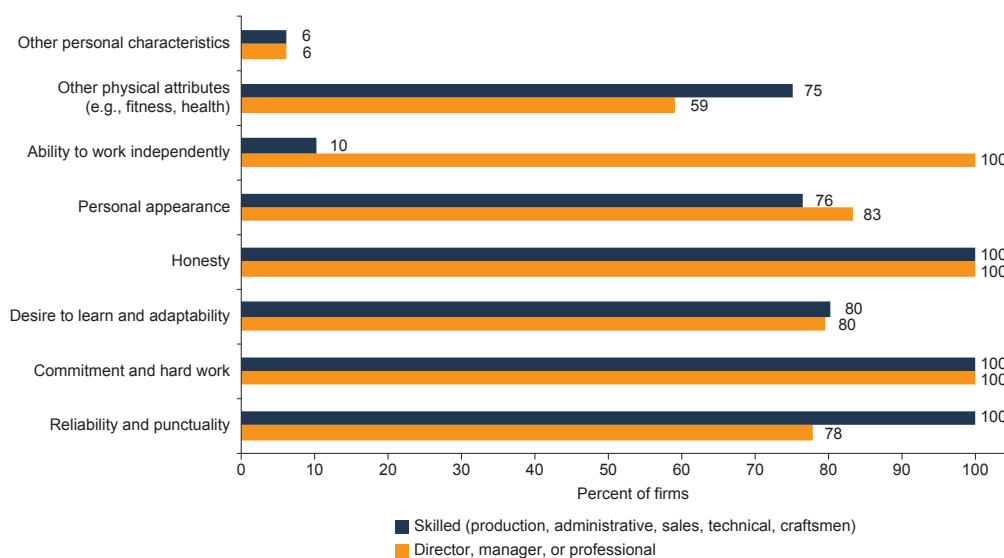
Sources: PROTEqIN Survey, 2014; and the Central Statistical Office of Trinidad and Tobago.

macro-level discussion in Section 5.1, particularly worker emigration, quality of education and training, and the shortage of professionals trained by local institutions. The issue of personal and soft skills is examined below.

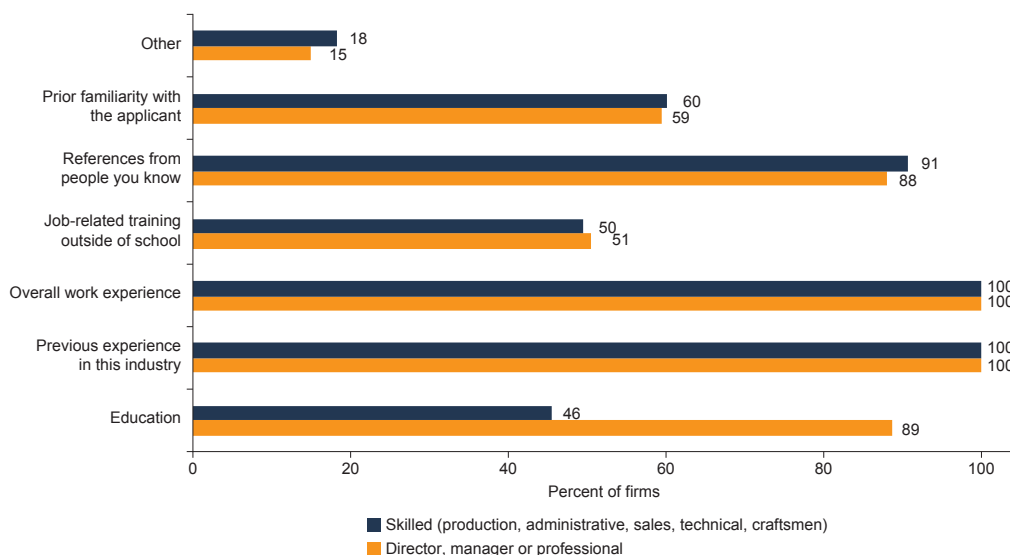
Is there a lack of necessary personal and soft skills, as firms claim? Firms identified a lack of necessary personal and soft skills as one of the reasons for the existing skills mismatch. Indeed, 94 percent of firms identified this characteristic of workers as a very important and critical potential cause of the skills mismatch. In the PROTEqIN Survey, firms were asked to rate the importance of different personal traits on a scale ranging from 1 (not important) to 5 (critical). This information and two job categories—(1) director, manager, or professional; and (2) skilled jobs: production, administrative, sales, technical, and craftsmen—are used to investigate the importance of different characteristics and attributes of workers and the difficulties firms encounter finding employees with those characteristics and attributes during recruitment.

The importance of personal characteristics to firms is similar across the two job categories (Figure 5.10). Employers place a high value on honesty, commitment to hard work, and reliability and punctuality for both managerial/professional and production/administrative roles. However, the ability to work independently is more relevant for managerial/professional roles and less relevant for production/administrative roles. Core skills such as motivation/commitment, responsibility, reliability, and trustworthiness are relevant to both job types, but other skills are more important

Figure 5.10: Importance for Firms of Selected Personal Characteristics in Employees (percent)



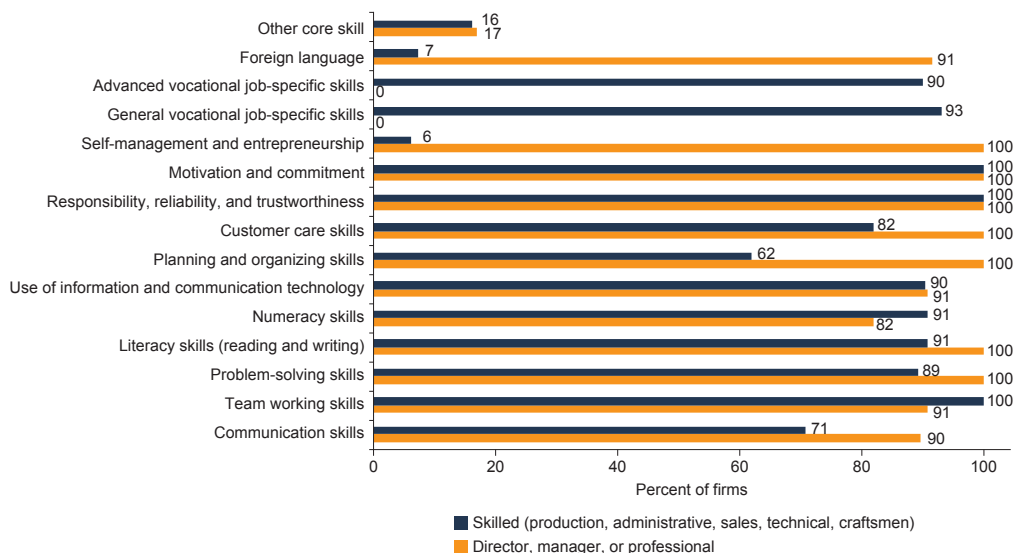
Source: PROTEqIN Survey, 2014.

Figure 5.11: Importance for Firms of Core Skills (percent)

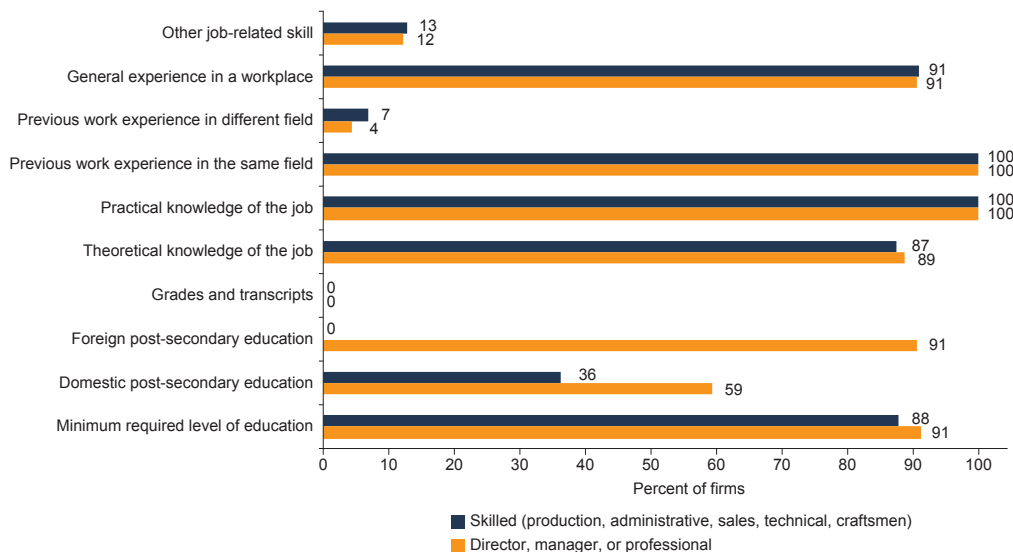
Source: PROTEqIN Survey, 2014.

for different work roles (Figure 5.11). For managerial/professional roles, the following core skills are considered important by most firms: problem-solving, literacy, planning and organizing, customer care, self-management and entrepreneurship, foreign language, communications, teamwork, and the use of information and communication technology. Most of the skills considered for managerial/professional roles were also important for production/administrative roles, with the exception of foreign language, self-management, and entrepreneurship skills. In addition to these skills, advanced vocational job-specific skills and general vocational job-specific skills were identified as particularly important for production/administrative roles. The demand for job-related skills varies across both categories of employment. Previous work experience in the same field and practical knowledge of the job are relevant to both categories of employment (Figure 5.12). However, for managerial/professional roles, firms value a foreign post-secondary education, while this is not important for production/administrative roles (Figure 5.13).

Firms report that core and job-related skills are the most difficult to find when recruiting employees. Figure 5.14 shows the percentage of firms that report difficulty finding candidates with appropriate skills for various job types. The responses suggest that most firms have problems finding candidates with core and job-related skills for managers; professionals; technicians and associate professionals, skilled agricultural, forestry, and fishery workers; and craft and related trade workers. In particular, all firms reported a challenge in finding candidates with core skills of managers and

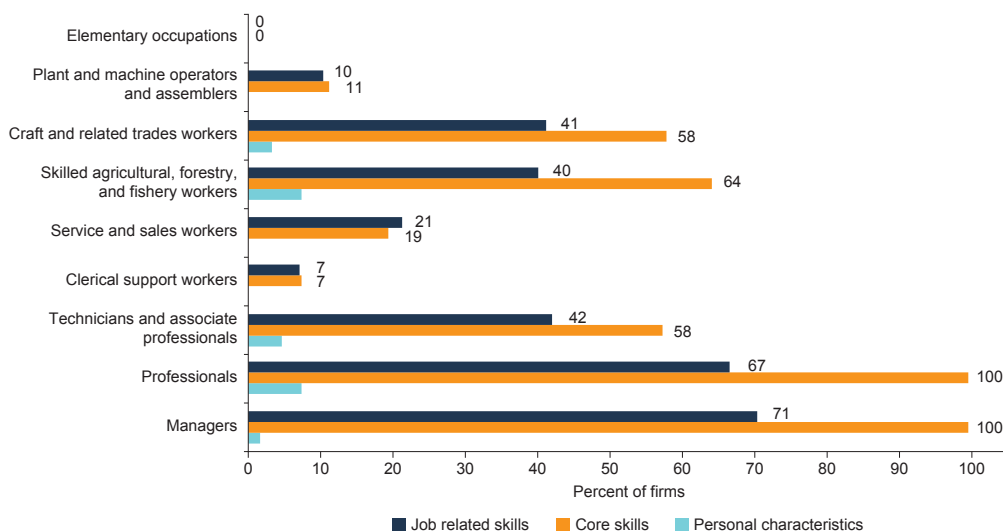
Figure 5.12: Importance for Firms of Selected Skills

Source: PROTEqIN Survey, 2014.

Figure 5.13: Importance for Firms of Job-related Skills

Source: PROTEqIN Survey, 2014.

professionals. Finding candidates with appropriate personal characteristics does not appear to be a major problem for firms, thus rejecting the claim that necessary personal characteristics and soft skills is a reason for the skills mismatch.

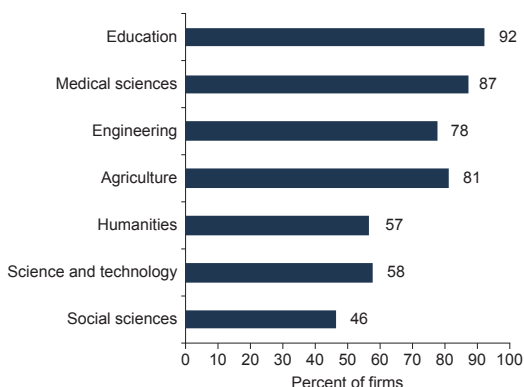
Figure 5.14: Difficulty Finding Candidates with the Appropriate Skills

Source: PROTEqIN Survey, 2014.

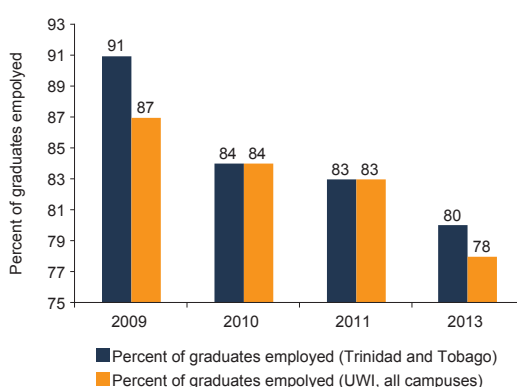
The Caribbean Single Market and Economy (CSME) allows the free movement of skills/labour without the need for persons to obtain a work permit in the member state in which he/she wishes to work. The categories of work covered under this arrangement include university graduates, artists, musicians, media workers, and sportspersons.³ Hence, the regional labour market provides a viable option for Trinidad and Tobago firms to source their labour requirements. However, examining the data, specifically for university graduates, shows a constraint in terms of poor skill matching.

The findings from The University of the West Indies' (UWI) graduate tracer surveys show that skill matching is poor for graduates from some faculties. The survey of first degree graduates from the St. Augustine, Mona, and Cave Hill campuses captures information on the destination of UWI graduates approximately one year after they complete their final year of study. Two questions from the survey provide useful information on the extent to which the supply and the demand for skills are synchronized. The first asks whether the respondents' first degree qualification is relevant to their current job, and the second asks whether the skills and knowledge acquired during studies are used in their current job. The findings show that graduates from social sciences (54 percent), humanities (43 percent), and science and technology (42 percent) indicated that their degree is not related to their current jobs (Figure 5.15). In addition,

³ A Caribbean Community national who does not fall in any of these categories must apply for a work permit from the receiving member state.

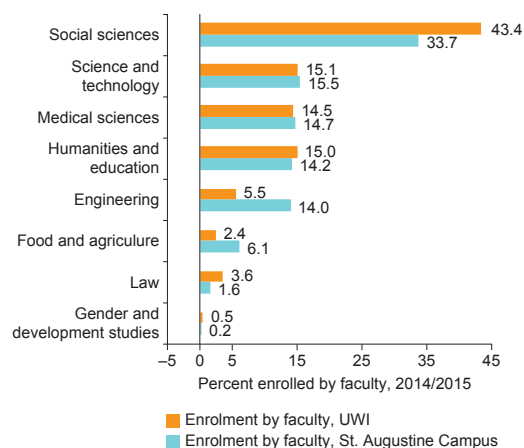
Figure 5.15: Relevance of Degree to Current Job among Graduates of the University of the West Indies, 2013

Source: University of the West Indies (2016).

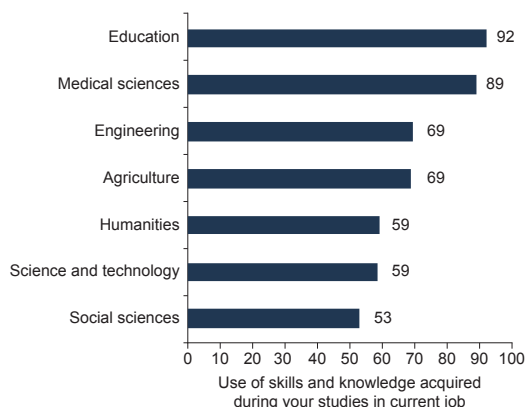
Figure 5.16: Percent of University of the West Indies Graduates Employed, 2009–2013

Source: University of the West Indies (2016).

employment rates of UWI graduates dropped by 9 percentage points from 2009–2013, while the employment rate for graduates in Trinidad and Tobago dropped 11 percentage points for the same period (Figure 5.16). The areas of studies that have the lowest employment rates and where most graduates' report that the skills and knowledge acquired during their studies are not being used also happen to be same areas which account for roughly 51 percent of current enrolment, i.e., social sciences, science and technology, and humanities and education (Figures 5.17 and 5.18 and Table 5.3).

Figure 5.17: Current Enrolment by Faculty at the University of the West Indies and Trinidad and Tobago, 2013

Source: University of the West Indies (2016).

Figure 5.18: Use of Skills and Knowledge Acquired During Studies at the University of the West Indies in Current Job, 2013

Source: University of the West Indies (2016).

Table 5.3: Level of Employment Rates by Area of Study, 2009–2013

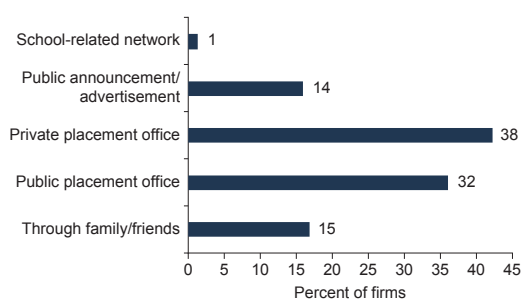
High employment rates: 90 percent and over	Medical Sciences: medicine, dentistry, pharmacy, nursing, physical therapy, diagnostic imaging Education Engineering: mechanical, civil, chemical and process/petroleum, electrical, computer Humanities: creative and festival arts, library and information studies
Moderate employment rates: between 80 percent and 89 percent	Social Sciences: management studies Engineering: geometrics and land information Sciences: computing and information technology—computer science, information technology, mathematic and statistics, actuarial science Agriculture: agricultural economics and extension Humanities: literary, cultural and communication studies—literatures in english, communication studies, film studies, latin american studies
Low employment rates: below 80 percent	Agriculture: food production — agriculture, livestock, agronomy Science: life sciences, physical sciences (physics, geography, chemistry) Humanities: history, modern languages and linguistics Social Sciences: international relations, behavioral sciences (sociology, psychology), economics Law: LLB Engineering: geomatics and land information

Source: University of the West Indies (2016).

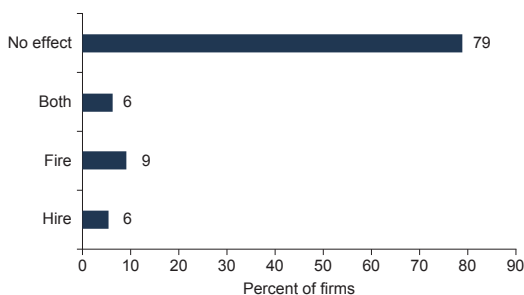
This is a worrying situation for two reasons: first, the potential incentive for graduates to emigrate, hence worsening the “brain drain” problem; and second, a widening of the skills/labour gap in the future.

5.3 Labour Market Intermediation and Regulations

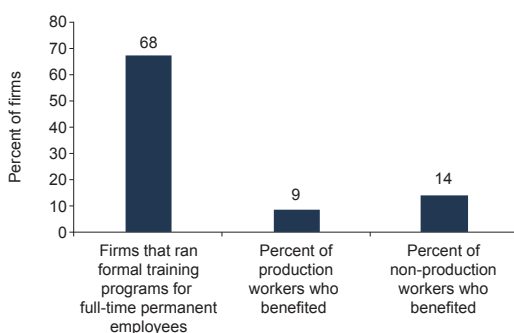
Labour market intermediation entities include both private and public placement offices (Figure 5.19). With respect to labour market intermediation, 38 percent of firms report that they found their most recent employees through a private placement office, 32 percent through a public placement office, 15 percent through friends, 14 percent through public announcements/advertisements, and 1 percent through school-related networks. Moreover, labour regulations do not appear to have an impact on recruitment and firing decisions: 79 percent of firms report that labour regulations have no effect on their

Figure 5.19: Labour Market Intermediation Mechanisms

Source: PROTEqIN Survey, 2014.

Figure 5.20: Labour Regulations and Hiring/Firing Decisions

Source: PROTEqIN Survey, 2014.

Figure 5.21: Firms Offering Formal Training and Employees Receiving It

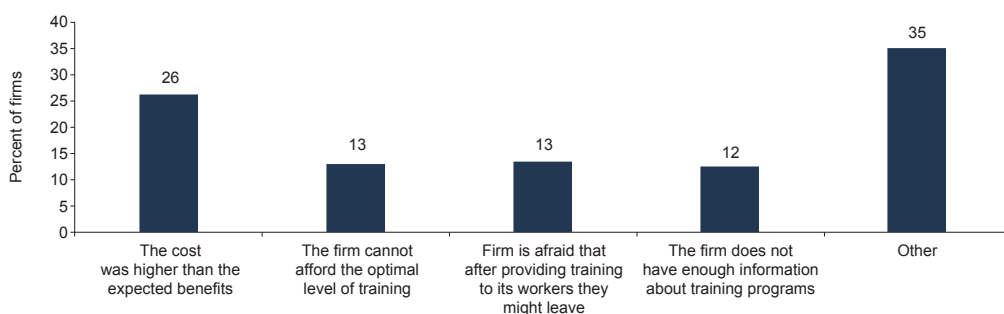
Source: PROTEqIN Survey, 2014.

their main reasons included that: (1) the cost was higher than the expected benefits, (2) the firm could not afford the optimal level of training, (3) the firm was afraid that

recruitment compared with 9 percent for firing, 6 percent for hiring, and 6 percent for both (Figure 5.20).

5.4 How Do Firms Respond to an Inadequately Educated Workforce?

One would expect that since firms have identified an inadequately educated workforce as a major constraint, training programs would be provided for employees. Indeed, 68 percent of firms have provided formal training for their employees, and roughly 9 and 14 percent of production workers and non-production workers have benefited, respectively (Figure 5.21). According to the data, 36 percent of firms reported that they received public support to conduct training-related activities, according to the 2014 PROTEqIN Survey. For the firms that did not provide training for their employees,

Figure 5.22: Reasons Firms Did Not Operate Training Programs

Source: PROTEqIN Survey, 2014.

Table 5.4: Effectiveness of Technical Assistance Programs for Firm Performance (percent)

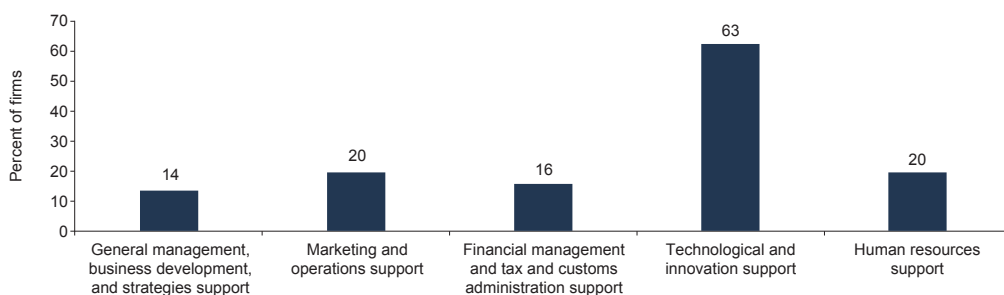
	General Management, Business Development, and Strategies Support	Marketing and Operations Support	Financial Management, and Tax and Customs Administration Support	Technological and Innovation Support	Human Resources Support
Higher sales	86	50	50	69	60
Lower costs	43	30	88	44	40
Bigger profits	86	80	75	56	70
Improved production process/quality of products or services	43	70	38	72	50
Improved access to financing	71	40	75	28	30
Improved internal business environment	43	60	100	34	60
Improved human resources management	29	70	25	41	80
Improved overall results	86	90	50	66	90

Source: PROTEqIN Survey, 2014.

Note: Level of impact is perceived to be moderate to large.

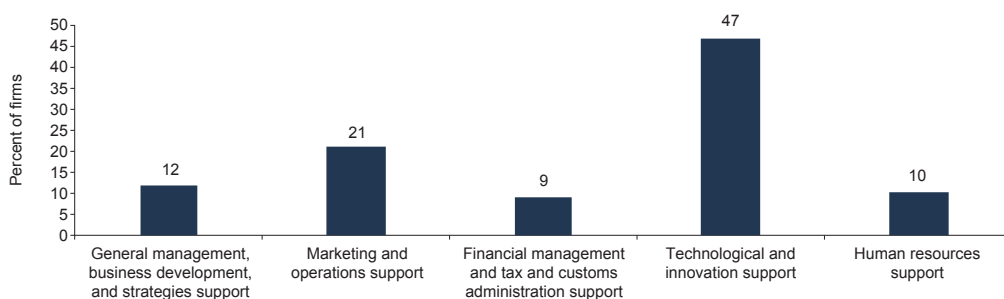
after investing in its workers they might leave, and (4) the firm did not have enough information about training programs (Figure 5.22).

Despite 65 percent of firms being aware of programs available for technical assistance, only 15 percent have benefited from such programs. Of those firms that benefited, 63 percent received support for technology and innovation, 20 percent for human resources, 20 percent for marketing and operations, 16 percent for financial management (including tax and custom administration), and 14 percent for general management and business development (Figure 5.35). Firms were asked to rate the effectiveness of support received in terms of improving sales, lowering costs, increasing profits, improving the quality of products, accessing financing, improving the internal business environment, improving human resource management, and improving overall results (Table 5.4). The findings show that functional support in general management, business development, and strategies provided the largest return for most firms in terms of increasing sales, profits, and access to financing. Support in financial management and tax and customs administration led to improved internal business relations and lower costs, while most firms benefited from an improved production process/quality of products and services as a result of technological and innovation support.

Figure 5.23: Functional Areas Where Technical Support Is Provided to Firms

Source: PROTEqIN Survey, 2014.

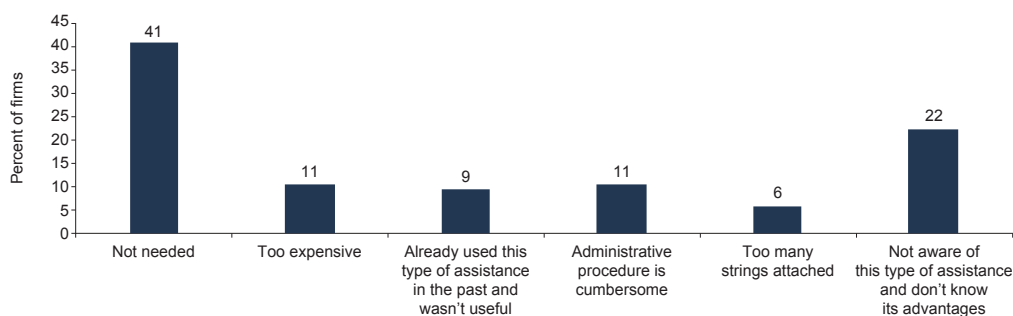
The main functional areas where support for firms is needed (but not necessarily provided) are as follows: 47 percent of firms require assistance in general management, business development, and strategies; 21 percent in marketing and operations; 12 percent in financial management and tax and customs administration; 10 percent in technology

Figure 5.24: Functional Areas Where Support to Firms Is Needed

Source: PROTEqIN Survey, 2014.

and innovation; and 9 percent in human resource management (Figure 5.24). Firms that did not receive technical assistance are interested and willing to pay for it: 71 percent of firms that did not receive technical support reported their interest in receiving such support and 100 percent of them indicated their willingness to pay for it, according to the 2014 PROTEqIN Survey.

Most firms that are not interested in technical assistance say it is because they are unaware of the advantages to their organization: 41 percent of firms reporting a lack of interest in technical assistance said that they do not need it, while 22 percent are not aware or do not know of its advantages (Figure 5.25). A cumbersome

Figure 5.25: Reasons Why Firms Are Not Interested in Technical Assistance

Source: PROTEqIN Survey, 2014.

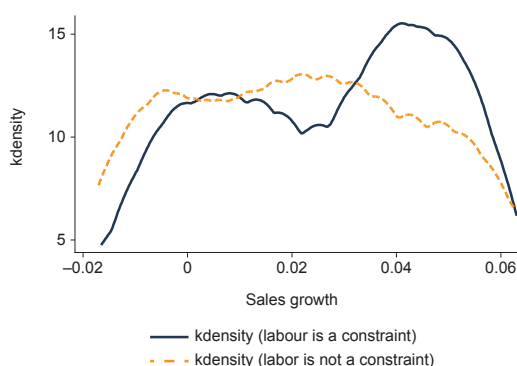
administrative procedure was reported by 11 percent of firms as the reason for their lack of interest in technical assistance, while the cost was the main reason for another 11 percent of firms.

5.5 An Inadequately Educated Workforce and Firm Performance

This section shows the relationship between sales growth and firms that identify an inadequately educated workforce as a major or severe constraint. The evidence shows that firms that report an inadequately educated workforce tend to have higher sales growth than firms that do not. This is contrary to what one would expect. However, disentangling firms that complain but provide training from those that complain and do not train shows that the former group is associated with better sales growth than the latter group (Figures 5.26 and 5.27).

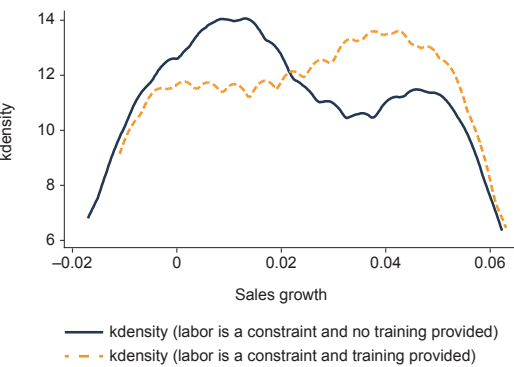
5.6 Conclusion

Both the micro- and macro-level evidence shows that an inadequately educated workforce is a constraint to firm growth in Trinidad and Tobago. The findings suggest that enrolment rates have increased at all levels, but the quality of education has declined, particularly at the secondary level, while a large share of the country's tertiary-level educated stock has migrated. A skills gap

Figure 5.26: Sales Growth and an Inadequately Educated Workforce

Source: PROTEqIN Survey, 2014.

Figure 5.27: Sales Growth, Training, and an Inadequately Educated Workforce



Source: PROTEqIN Survey, 2014.

was estimated using firm-level data. The findings show that firms tend to hire employees below and above their minimum educational requirements for most job types, which suggests skill mismatches across most job types and education levels. To mitigate this problem, most firms provide training for their employees, and the evidence shows a positive association between training and performance insofar that firms that complain and train do better than those that complain and do not train.

Access to Finance

What causes financing constraints? Access to appropriate financial instruments is important for investment and business growth. Many factors can constrain a firm's ability to access financing. In a review of the literature, Fiestas and Sinha (2011) identified the level of development of the financial sector as a major constraint to financing for firms. They explain that the wider macroeconomic environment and issues such as property rights, enforcement of contracts, bankruptcy laws, and the size of the public sector in the credit market are important factors that can constrain financial sector development, in turn contributing to the inability of firms to access finance. There are also firm-specific factors that influence firm access to credit. Mori and Richard (2012) examined the reasons why banks reject firms' loan applications to finance their businesses in Tanzania and identified several firm-specific reasons, including the sector of operation (some sectors are riskier than others), the inability of banks to assess a firm's creditworthiness due to poor documentation, weak financial management, stagnant firms, and lack of collateral. Thus, it is clear that both macroeconomic and firm-specific factors are important determinants of financing constraints for firms.

There is general consensus that a positive relationship exists between access to finance and firm performance. The positive relationship is explained through the financing of innovative projects that directly improve total factor productivity (TFP). In a study of Bulgarian firms, Gatti and Love (2008) showed that credit has a strong and positive causal effect on TFP. They found evidence suggesting that productivity increases by two-thirds of a standard deviation as firms move from not having access to a line of credit to having access to one. Levine and Warusawitharana (2014) examined firms in four European countries and found a positive relationship between finance and future productivity growth at the firm level. Butler and Cornaggia (2011) found similar evidence that increased productivity is an important channel through which finance affects economic growth (see also Ferrando and Ruggieri 2015). There is also a notion that productivity growth largely takes place at the

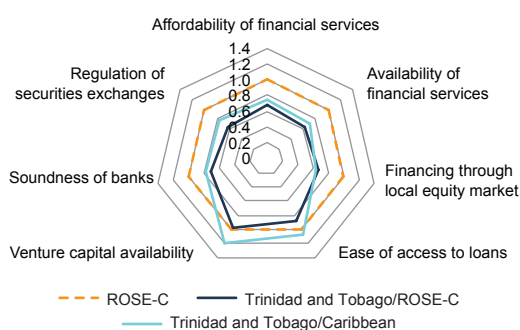
extensive margin—that is, the creation of new firms and closure of unproductive firms—rather than at the intensive margin, which involves firms becoming more productive internally (Kerr and Ramana 2009). As such, financing of the most promising new business ideas can lead to important changes in productivity growth (Beck et al. 2000; Guiso et al. 2004).

In the 2014 Productivity, Technology and Innovation (PROTEqIN) Survey, firms in Trinidad and Tobago identified access to financing as the second most important constraint that affects their growth. This chapter examines the evidence for this constraint using macro- and firm-level data. First, the key indicators for cost and access to financing in Trinidad and Tobago relative to other countries and over time are examined. The macro-level evidence suggests that the cost of credit is low and credit to the private sector is also low. The latter is consistent with firms' complaints about access to credit.

6.1 Context

The macro-level evidence suggests that financial development in Trinidad and Tobago is low. One typically uses the ratio of private sector credit to GDP as a measure of the level of financial development (Becerra, Cavallo, and Scartascini 2012). For Trinidad and Tobago, the ratio of domestic private credit to GDP is lower than the average for the benchmark group of countries, which is the rest of the small economies of the world that are commodity-dependent (ROSE-C) (Figure 6.1). Indeed, businesspersons' perceptions of financial market development are negative in Trinidad and Tobago relative not only to ROSE-C but to other countries in the Caribbean. Regulation of

Figure 6.1: Businesspersons' Perceptions of Financial Market Development



Source: World Economic Forum, 2015.

Note: ROSE-C = rest of the small economies of the world that are commodity-dependent; values greater than unity indicate better performance.

securities and exchange, soundness of banks, ease of access to loans, financing through equity markets, availability of financial services, and affordability of financial services are very negative relative to ROSE-C. This section examines the issue of cost and access to financing by looking at lending interest rates, domestic savings, and liquidity in commercial banks. These indicators are typically used to assess the cost and availability of financing.

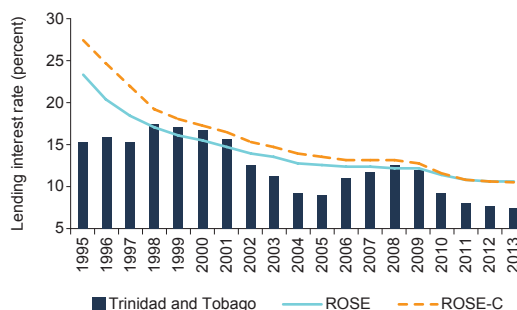
The data show that Trinidad and Tobago has one of the lowest lending

interest rates when compared with ROSE-C (Figure 6.2). Lending interest rates have been below those observed for ROSE-C since 1995. After 2009, the country's lending interest rates sharply declined, while its comparator's lending interest rates have generally remained on a stable path. In addition, savings has been above the ROSE-C average (Figure 6.3). Savings grew rapidly during the commodity super cycle and peaked at 58 percent of GDP in 2006. There was a sharp decline in the savings rate after 2008, but after that the rate continued on a trajectory more or less on par with ROSE-C through 2013.

Commercial bank liquidity indicates that lending is not constrained by the availability of funds, but credit to the private sector is low. Liquidity in the banking system in Trinidad and Tobago is high and is on par with ROSE-C (Figure 6.4). Liquidity in banks as a share of GDP markedly increased from 10 percent in 2007 to over 25 percent in 2013. It is important to note that even though Trinidad and Tobago performs better in terms of its ability to finance private sector projects, access to financing remains a significant obstacle. In fact, domestic credit to the private sector has been declining and is significantly lower than in ROSE-C (Figure 6.5).

Trinidad and Tobago has implemented a number of initiatives to

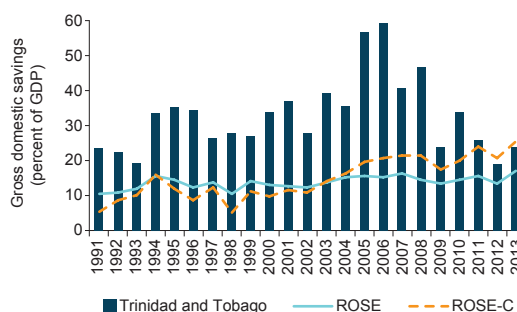
Figure 6.2: Real Lending Interest rate



Source: IDB staff estimates based on data from the World Bank's World Development Indicators.

Note: ROSE = rest of the small economies of the world; ROSE-C = rest of the small economies of the world that are commodity-dependent.

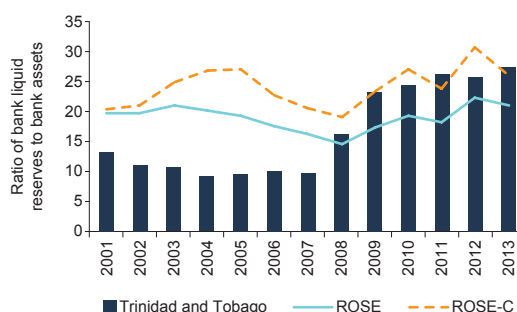
Figure 6.3: Domestic Savings



Source: IDB staff estimates based on data from the World Bank's World Development Indicators.

Note: ROSE = rest of the small economies of the world; ROSE-C = rest of the small economies of the world that are commodity-dependent.

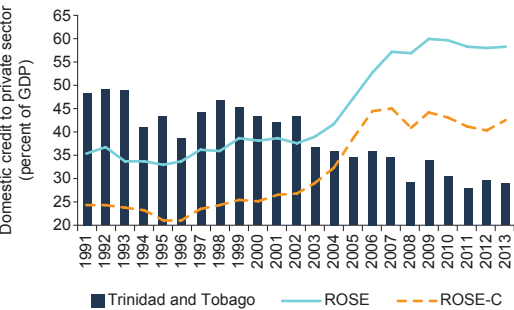
Figure 6.4: Bank Liquid Reserves



Source: IDB staff estimates based on data from the World Bank's World Development Indicators.

Note: ROSE = rest of the small economies of the world; ROSE-C = rest of the small economies of the world that are commodity-dependent.

Figure 6.5: Domestic Credit to the Private Sector



Source: IDB staff estimates based on data from the World Bank's World Development Indicators.
Note: ROSE = rest of the small economies of the world;
ROSE-C = rest of the small economies of the world that are commodity-dependent.

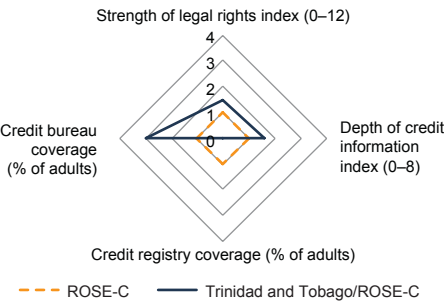
provide financial support for small businesses and entrepreneurs. The National Entrepreneurship Development Company Limited is a key institution in this effort. Loans for small businesses range up to TT\$100,000 for first-time borrowers and have an upper ceiling of TT\$500,000. The National Integrated Business Incubation System developed by the Ministry of Labour and Small and Micro Enterprise Development also provides a unique mix of business development support, infrastructure, and operational

and financial support to assist the growth and success of new and small enterprises. In addition, the government introduced a Small and Medium Enterprise Market in 2012 to provide small companies with an avenue to further raise capital. However, this initiative has not been successful thus far, partly due to regulations on the ownership of shares after listing, relatively low interest rates, and excess liquidity in commercial banks.

The presence of credit bureaus can mitigate the problem of asymmetric information. Credit bureaus are privately owned entities that collect information on borrowers in the financial system and facilitate the exchange of credit information among lenders. The key distinction between a registry, which is lacking in Trinidad and Tobago (Figure 6.6), and a bureau is that the existence of a registry makes it mandatory to report loans, whereas participation in a credit bureau is voluntary. Therefore, bu-

reaus might not convey complete information about all borrowers in the economy. Trinidad and Tobago performs better than ROSE-C in other indicators of “getting credit” namely, on the strength of legal rights index and in its depth of credit information (Figure 6.6). The former measures the degree to which collateral and bankruptcy laws protect the rights of borrowers and lenders and thus facilitate lending, and the latter measures rules affecting the

Figure 6.6: Getting Credit in Trinidad and Tobago



Source: World Bank, Doing Business Project, 2016.
Note: ROSE-C = rest of the small economies of the world that are commodity-dependent.

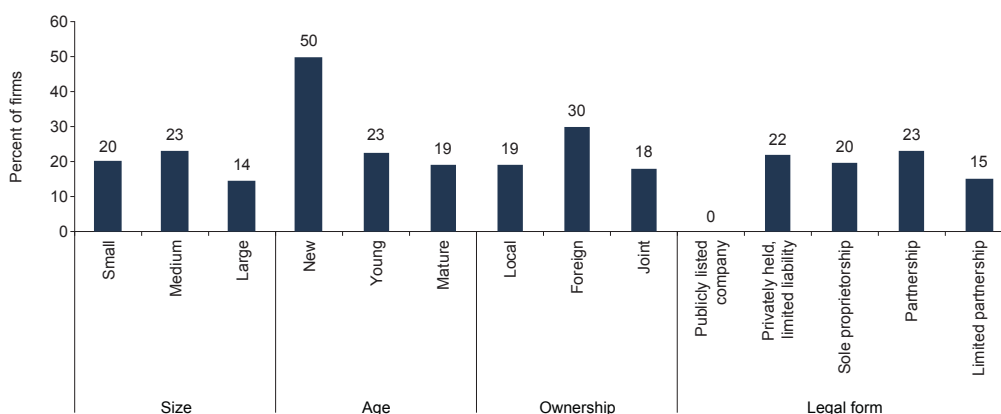
scope, accessibility, and quality of credit information available through public or private credit registries.

Despite the relatively low cost of financing and the government's initiatives for small and medium-sized enterprises (SMEs), access to credit is limited, especially for small firms in the non-energy sector. The explanation usually given for this problem is that commercial banks have little appetite for risk, so there is little lending to non-energy sector projects, which are considered to be risky ventures. The next section goes beyond the typical macro-level discussion to answer the following questions: What is the current financing structure of firms in Trinidad and Tobago? What types of firms are affected most by financing constraints (i.e., credit demand, loan denial, or constrained or discouraged firms)? What are the main reasons for loan rejections? What is the relationship between financing constraints and firm performance?

6.2 Firm-level Evidence

Firms in Trinidad and Tobago have identified access to finance as the second most important obstacle affecting their performance. Overall, 20 percent of firms report that access to finance is the most serious obstacle affecting their operations. The evidence suggests that access to finance is a greater challenge for SMEs than for large firms. Figure 6.7 shows that 23 percent of medium-sized firms and 20 percent of small firms are constrained by access to finance, compared to 14 percent of large firms. There is even greater heterogeneity when firm age is considered. The distribution over firm age suggests that new and young firms are most affected. The findings show that 50 percent of new firms report access to finance as the most important obstacle to growth,

Figure 6.7: Access to Finance



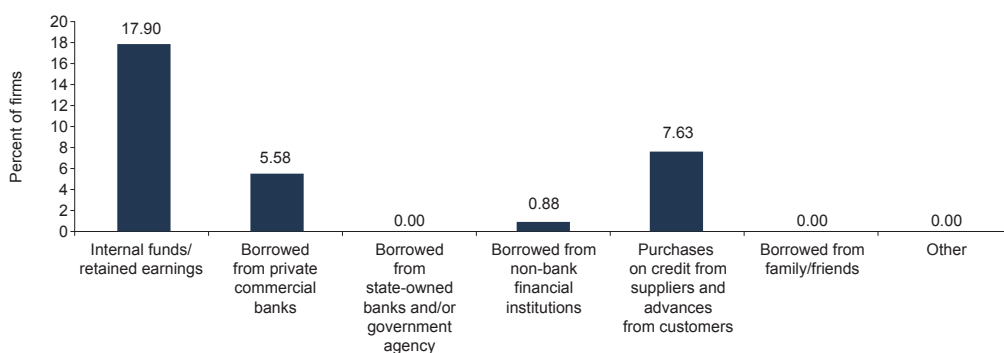
Source: PROTEqIN Survey, 2014.

followed by 23 percent of young firms and 19 percent of mature firms. Foreign-owned firms are more affected by access to finance than locally and jointly owned firms, while privately held firms (limited liability companies, sole proprietorships, and partnerships) consider the lack of access to finance a major impediment to their operations.

6.2.1 Financing Structure of Firms

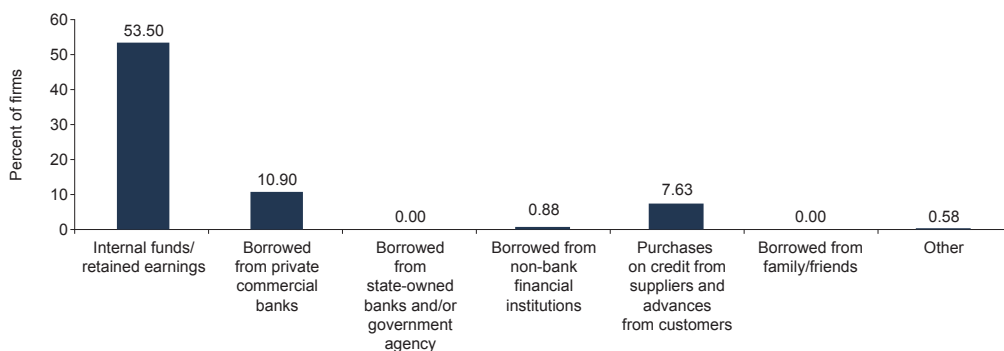
Firms in Trinidad and Tobago rely heavily on retained earnings as a source of financing. As access to financing is a major constraint, it is important to understand this financing structure of firms. Financing structure is determined not only by firm-specific characteristics that may vary across countries, but also by the constraints posed by countries' degree of financial development and their institutional environment. In the case of Trinidad and Tobago, internal funds and retained earnings are the main sources of financing for firms. Figures 6.8 and 6.9 show the share of firms that source

Figure 6.8: Financing Structure of Fixed Assets



Source: PROTEqIN Survey, 2014.

Figure 6.9: Financing Structure of Working Capital



Source: PROTEqIN Survey, 2014.

50 percent or more of their financing for fixed assets and working capital, respectively. The data show that 18 percent of firms obtained more than 50 percent of financing for fixed assets from internal funds (Figure 6.8), while more than 53 percent of firms used internal funds and retained earnings to finance working capital, compared with 10 percent of firms that borrow from private banks (Figure 6.9).

6.2.2 Firm Characteristics Associated with Financing Constraints

Credit demand is examined using four specific indicators that were derived from firm-level data. The four indicators are loan demand, loan denial, “constrained” firms, and “discouraged” firms (Presbitero and Rabelotti 2014). Loan demand is measured as the share of firms that applied for a loan or a line of credit. Loan denial is the share of firms that applied for a loan but whose application was rejected. “Discouraged” firms are classified as those that did not apply for a loan because of collateral requirements for loans or because the line of credit was unattainable, interest rates were not favourable, the size of the loan and its maturity were insufficient, application procedures for loans or a line of credit were too complex, or the firms did not believe that their loan application would be approved. “Constrained” firms include those whose loan application was rejected and that did not apply for a loan because interest rates were not favourable, collateral requirements for loans or a line of credit were unattainable, the size of the loan and its maturity were insufficient, or because they did not believe that their loan application would be approved. This latter category excludes firms that did not apply because of complex application procedures. Overall, the evidence shows that 43 percent of firms demanded credit, 48.3 percent of firms were denied credit, 63 percent of firms were discouraged, 49.7 percent of firms were constrained, and 25 percent of firms did not need credit. The paragraphs that follow examine the individual characteristics of these firms, with Table 6.1 presenting findings on how these characteristics relate to the demand for and access to credit.

Large firms demand more credit. The findings suggest that 50.6 percent of large firms applied for a loan or line of credit compared with 36.4 and 44.6 percent of medium-sized and small size firms, respectively. There is no substantial difference in credit demand when firm age is considered, but privately held firms have a greater appetite for credit than publicly listed companies. The data show that 43.9 percent of privately held firms (limited liability), 39.1 percent of sole proprietorships, and 50 percent of partnerships applied for a loan or line of credit. More firms in plastics and rubber, hotels and restaurants, and electronics demand credit than any other industrial sector: 60 percent of firms in the plastics and rubber sector applied for a loan, followed by 58 percent in the hotel and restaurant sector, and 50 percent in the electronics sector.

Large firms, mature firms, and sole proprietorships report more loan rejections: 57 percent of large firms report that their loan applications were rejected compared

Table 6.1: Firm Characteristics Associated with Financing Constraints (percent of firms)

		Credit Demand	Loan Denial	Discouraged	Constrained
Size	Small	44.6	45.0	66.0	50.4
	Medium	36.4	44.0	59.0	46.6
	Large	50.6	57.0	63.0	53.1
Age	New	0.0	0.0	0.0	0.0
	Young	46.8	30.6	53.7	33.8
	Mature	42.5	54.0	64.7	54.0
Ownership	Local	45.1	48.1	64.8	50.8
	Foreign	40.0	50.0	66.7	60.0
	Joint	27.3	55.6	50.0	39.4
Legal form	Publicly listed company	39.1	50.0	0.0	50.0
	Privately held, limited liability	43.9	47.7	59.0	48.0
	Sole proprietorship	39.1	52.8	66.1	55.4
	Partnership	50.0	46.2	84.6	57.7
	Limited partnership	43.1	45.2	58.5	43.1
Sector	Food	45.5	40.0	42.0	36.4
	Garments	50.0	50.0	50.0	50.0
	Chemicals	33.3	80.0	70.0	66.0
	Plastics and rubber	60.0	66.7	100.0	80.0
	Non-metallic mineral products	16.7	100.0	80.0	83.3
	Basic metals	14.3	100.0	50.0	28.6
	Fabricated metal products	36.4	100.0	85.7	63.6
	Machinery and equipment	33.3	0.0	50.0	33.3
	Electronics	50.0	100.0	0.0	50.0
	Construction	46.2	25.0	50.0	30.8
	Services of motor vehicles	35.7	80.0	66.7	57.1
	Wholesale	42.3	54.6	60.0	53.0
	Retail	42.0	48.9	69.4	54.2
	Hotels and restaurants	57.7	40.0	54.6	42.3
	Transport	47.6	60.0	36.4	42.9
	Information technology	25.0	0.0	66.7	50.0

Source: PROTEqIN Survey, 2014.

to 44 percent of medium-sized firms and 45 percent of small firms. Considering firm age, 54 percent of mature and 31 percent of young firms, respectively, report that their loan application was rejected. More firms that are sole proprietorships report loan rejections: 53 percent of sole proprietorships and 48 percent of privately held firms report loan rejections, compared to 46 percent of partnerships. In terms of industrial sectors, loan rejections are generally high in all sectors except for construction, hotel and restaurant, food, and retail sectors.

Small firms, mature firms, sole proprietorships, and privately held firms are discouraged when it comes to applying for loans. In general, most firms (63 percent) that did not apply for a loan (excluding those firms that did not need a loan) did not apply because they were discouraged due to collateral requirements, unfavourable interest rates, complex application procedures, or insufficient size of the loan and its maturity, or because they did not believe that their loan application would be approved. The evidence shows that 66 percent of small firms that did not apply for a loan fall into this category, compared to 59 percent and 63 percent of medium-sized and large firms, respectively. Considering firm age, 65 percent of mature firms and 54 percent of young firms said the main reason for not applying for a loan was because they were discouraged. Most partnerships and sole proprietorships that did not apply for a loan also fall into the discouraged category.

Firms that are partnerships and sole proprietorships, mature firms, and firms that operate in the manufacturing sectors (non-metallic mineral products, plastics and rubber, and chemicals) are financially constrained: 54 percent of mature firms are defined as financially constrained, compared to 34 percent of young firms, 58 percent of partnerships and 55 percent of sole proprietorships. More foreign firms are constrained (60 percent) than local firms (51 percent) or jointly owned firms (39 percent). In the non-metallic mineral products sector, 83 percent of firms are defined as constrained, the largest share compared to other sectors.

Overall, the evidence suggests that access to finance is a serious problem for most firms. Most firms that report being credit constrained are large, mature, privately owned (partnerships and sole proprietorships), foreign-owned, and operating in the manufacturing sector. Most discouraged firms are small, mature, sole proprietorships and privately held firms, and operating in the manufacturing sector. Firms that report loan rejections are mostly large, mature, and sole proprietorships. Finally, credit demand is mostly associated with firms that are partnerships and sole proprietorships, mature, and operating in the manufacturing sector.

6.2.3 Firm Characteristics Associated with the Major Reasons for Loan Rejections

This section examines the factors that might be causing firms to be credit constrained, with Table 6.2 presenting findings on how these characteristics relate to major reasons for

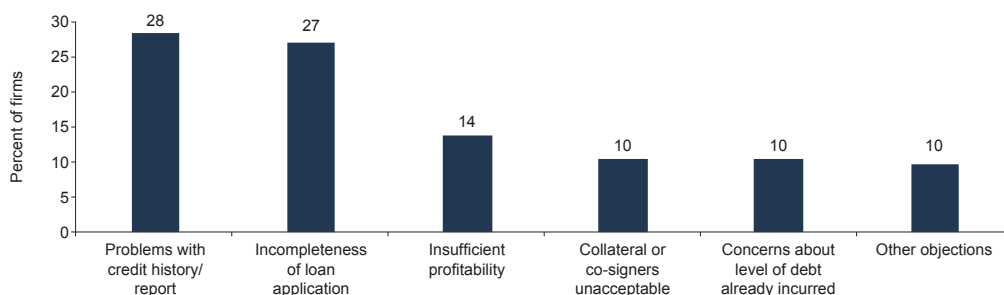
Table 6.2: Firm Characteristics Associated with the Major Reasons for Loan Rejections

		Unacceptable Collateral	Insufficient Profitability	Bad Credit History	Incomplete Loan Applications	Existing High Debt
Size	Small	14.3	17.9	21.4	32.1	7.1
	Medium	15.8	31.6	15.8	15.8	5.3
	Large	4.2	8.3	37.5	25.0	12.5
Age	Young	0.0	18.2	18.2	27.3	9.1
	Mature	13.3	18.3	26.7	25.0	8.3
Ownership	Local	12.5	17.2	23.4	28.1	7.8
	Foreign	0.0	0.0	0.0	0.0	50.0
	Joint	0.0	40.0	60.0	0.0	0.0
Legal form	Publicly listed company	0.0	0.0	0.0	100.0	0.0
	Privately held, limited liability	12.9	9.7	25.8	29.0	6.5
	Sole proprietorship	21.1	26.3	26.3	15.8	5.3
	Partnership	0.0	16.7	50.0	0.0	16.7
	Limited partnership	0.0	28.6	14.3	35.7	14.3

Source: PROTEqIN Survey, 2014.

loan rejections. The distribution of loan applications across firms shows that, on average, 3 percent of firms submit one loan application, 43 percent of firms submit two loan applications, and 54 percent of firms submit three or more loan applications. Loan rejections are high, with only 2 percent of firms receiving no rejections, compared to 20 percent of firms reporting one loan rejection, 33 percent of firms reporting two loan rejections, and 44 percent of firms reporting three or more loan rejections. The main reason for loan rejections as reported by firms are credit history (28 percent of firms), incompleteness of loan application (27 percent), insufficient profitability (14 percent), concerns about debt level already incurred (10 percent), and unacceptable collateral or co-signers (10 percent) (Figure 6.10). Moreover, apart from not needing a loan, the main reasons firms report for not applying for loans include overly complex application procedures for loans or lines of credit, unfavourable interest rates, unattainable collateral requirements, insufficient size of the loan and its maturity, and the belief that the loan would not be approved.

The evidence suggests that the reasons for loan rejections vary by firm size. Loan applications from SMEs were rejected mainly because of incomplete applications, while bad credit history was the main reason for 37 percent of large firms. Considering age, incomplete applications was the main factor for young firms, while bad credit history

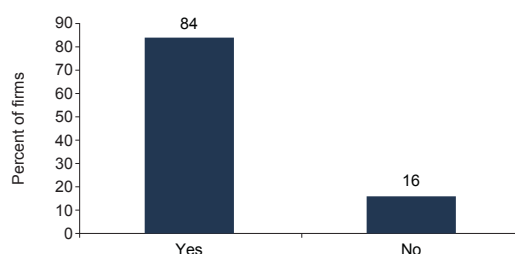
Figure 6.10: Major Reasons for Loan Rejections (percent of firms)

Source: PROTEqIN Survey, 2014.

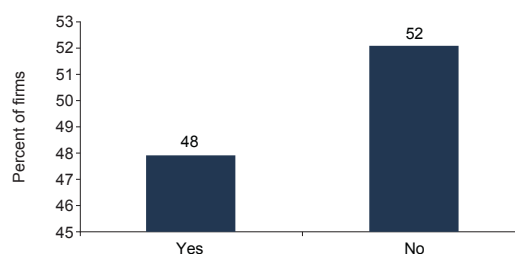
was the main factor for mature firms. Rejection of loan applications by local firms was due to incomplete applications and bad credit history, and the latter was also the main reason for rejection for jointly owned firms. In terms of legal form, bad credit history and incomplete applications were the main reasons why private firms were rejected.

The findings from the survey show the importance of collateral in securing a loan or line of credit. The share of firms that presently have a loan or line of credit is 36 percent. Almost 89 percent of those firms report that collateral was required to obtain the line of credit or loan. Land and buildings, and accounts receivable and inventories were the main form of assets required as collateral. Moreover, the approximate value of the collateral required as a percentage of the amount of the loan or line of credit was 150 percent.

Firms that have their annual financial statements checked and certified by an external auditor do not appear to have an advantage in accessing finance (Figures 6.11 and 6.12). The literature reports that bankers reject loan applications due to poor

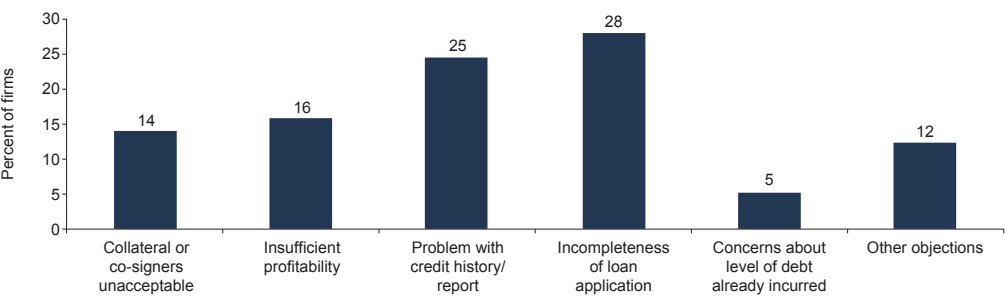
Figure 6.11: Percent of Firms with Audited Financial Statements

Source: PROTEqIN Survey, 2014.

Figure 6.12: Percent of Firms with Audited Financial Statements that Reported Loan Denials

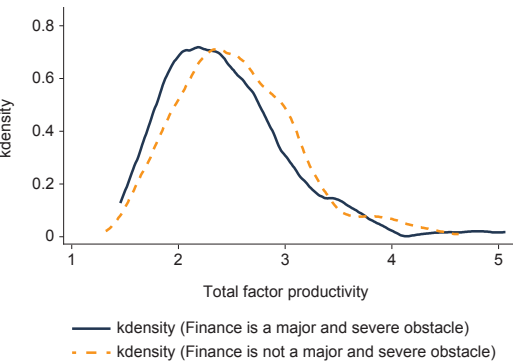
Source: PROTEqIN Survey, 2014.

Figure 6.13: Reasons for Loan Denial of Firms with Audited Financial Statements



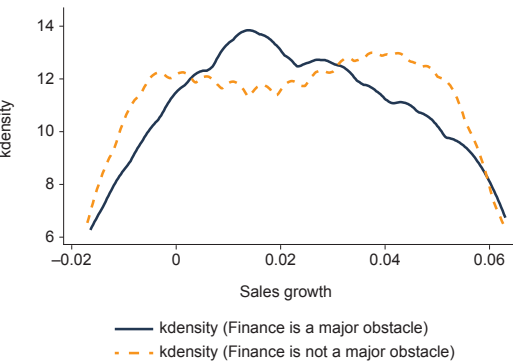
Source: PROTEqIN Survey, 2014.

Figure 6.14: Total Factor Productivity



Source: PROTEqIN Survey, 2014.

Figure 6.15: Financing and Sales Growth



Source: PROTEqIN Survey, 2014.

documentation, which makes them unable to assess creditworthiness. In Trinidad and Tobago as well, incomplete loan applications is one the main reasons why banks reject loan applications. One would expect therefore that those firms with audited financial statements would be able to provide better documentation to banks to obtain credit. However, 48 percent of firms that reported their financial statements were audited also reported loan rejections (Figures 6.12). Also unexpected is that more firms with audited financial statements were denied a loan because of incomplete loan applications (Figure 6.13).

6.2.4 Financing Constraints and Firm Performance

Credit constraints are associated with lower TFP and lower sales growth (Figures 6.14–6.17). The evidence suggests that firms not significantly affected by financing constraints have, on average, higher

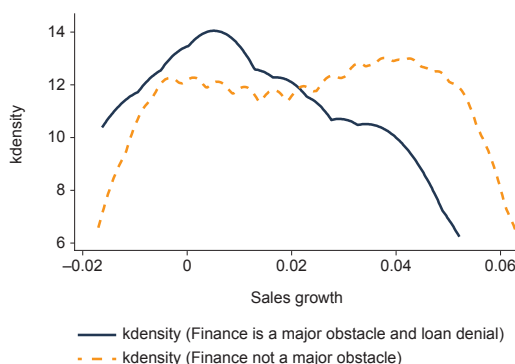
TFP. Also, the distribution for firms that report access to credit as a major or severe obstacle is marginally skewed to the left relative to the distribution for firms that report financing as not a major obstacle, suggesting lower sales growth on average than other firms. An even greater difference in performance is observed when the distributions of loan denials and credit constraints are compared against firms that do not identify access to finance and a major problem.

6.3 Conclusion

This chapter has examined access to finance as a constraint for firms in Trinidad and Tobago. The literature suggests that the level of development of the financial sector is a key factor in determining a firm's ability to access finance. The ratio of domestic private credit to GDP, a measure of the level of financial development, is lower for Trinidad and Tobago than the average for the benchmark group of countries (ROSE-C). Although other financing conditions are quite favourable from a cost perspective, credit to the private sector in Trinidad and Tobago is below par relative to other countries.

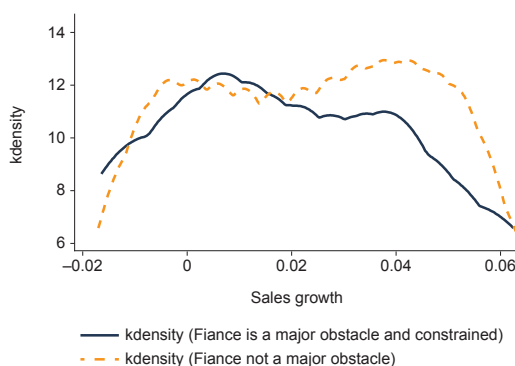
Overall, the firm-level evidence suggests that access to finance is a constraint for most firms. Three indicators are used to explore the financing challenges faced by firms in Trinidad and Tobago. With respect to firms that are credit constrained, most are large, mature, privately held (limited liability), foreign-owned, and operating in the retail sector. Similarly, firms that are discouraged from seeking finance are small, mature, privately held (limited liability), and operating in the retail sector; while those that report loan rejections are mostly large, mature, privately held (limited liability), and operating in the hotel and restaurant sector.

Figure 6.16: Loan Denial and Sales Growth



Source: PROTEqIN Survey, 2014.

Figure 6.17: Credit Constrained and Sales Growth



Source: PROTEqIN Survey, 2014.

The main reasons for loan rejections vary by firm size. In particular, loan applications from SMEs were rejected mainly because of incomplete applications, while a bad credit history was the main reason for the rejection for large firms. A bad credit history was the main factor for young firms and an incomplete loan application was the main factor for mature firms. Loan denials for local firms were due mostly to incomplete applications and existing high debt, while bad credit history was reported as the main reason for denials for jointly owned firms. Finance appears to be important to performance: we found a negative association between credit constraints and sales growth and TFP, insofar as firms that are credit constrained or whose loan application was rejected have lower TFP and lower sales growth.

Crime and Security

Crime is a significant constraint to productivity, private sector investment, firm sales, profitability, and overall economic growth (Fiestas and Sinha 2011). At the macro level, the effect of increased crime on economic growth has been found to be asymmetric, that is, as economic uncertainty about future prospects of the economy increases, crime becomes more harmful to growth (Goulas and Zervoyianni 2012). The evidence also shows that crime and violence reduce the scope for economic diversification, as firms in some economic sectors that are less resilient to the effects of crime may be eliminated (Rios 2015). Firm-level evidence shows that increases in crime and violence are associated with significant declines in revenue, employment, and hours worked (Montoya 2012). These effects are heterogeneous across firm size and sectors, with the largest effect on small firms (Montoya 2012). Other studies find that while crime negatively affects firm performance, self-protection is significantly and positively related to sales, but reduces profitability and private investment (Kimou 2015). Crime also acts as a deterrent to firm entry, which can lead to less dynamic industries (Mahofa, Sundaram, and Edwards 2015).

How does crime affect firm performance? The mechanisms through which crime affects firms vary and have different implications. Some of the main channels include the investment climate, human and social capital development, and unproductive use of public and firm resources. Increasing levels of crime and violence can worsen the investment climate due to the increased cost of doing business, losses to firms due to theft and vandalism, reduced working hours, and the effect on business decisions related to expansion and location (Detotto and Otranto 2010). Crime and violence can have effects through the labour channel in various ways. For example, high levels of crime and insecurity can diminish the quality of the workforce through adverse effects on learning outcomes (Lacoe 2013) and migration. Scarce public resources that could have been channelled to productive activities have to be used to tackle crime and violence. At the firm level, firms may have to invest in private security, which limits their ability to invest in innovation and research and development.

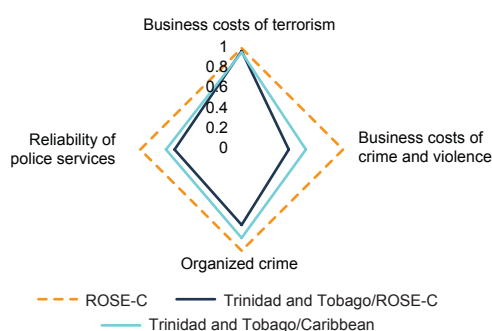
This chapter examines the issue of crime and security as it relates to firms in Trinidad and Tobago. Although estimating the incidence and cost of crime has become an important field of study (Czabanski 2008), the detrimental effect of crime on legal economic activity and on costs to the private business sector in terms of performance has been relatively neglected in Trinidad and Tobago. Previous studies have focused more generally on the “fear of crime” and the determinants of criminal behaviour (Sookram, Saridakis, and Mohammed 2011; Sookram et al. 2009). To fill this gap, this chapter uses micro- and macro-level data to understand the incidence of various crimes against firms, the weapons used, the impact on firm performance (sales growth), and the extent to which firms engage in self-protection.

7.1 Context

Crime and security is the third most important constraint identified by Trinidad and Tobago firms in the 2014 Productivity, Technology, and Innovation (PROTEqIN) Survey. This is consistent with private sector sentiments in previous surveys and is consistent with the views of households as well. The 2014 Latin American Public Opinion Project (LAPOP) Survey found that 68 percent of individuals from Trinidad and Tobago identified security as the most important problem facing the country—the highest percentage in Latin America and the Caribbean.¹ In the 2010 World Bank Enterprise Survey, firms identified

crime as the second most important factor affecting their performance. Businesspersons’ perceptions of crime and security as it relates to the reliability of police services, organized crime, and the business costs of crime and violence are very negative relative to perceptions in the rest of the small economies of the world that are commodity-dependent (ROSE-C) (Figure 7.1). The macro-level data also concur with this perspective, as there has been a long-term increasing trend in violent crimes, particularly murders, woundings, and shootings.

Figure 7.1: Businesspersons’ Perceptions of Crime and Security



Source: World Economic Forum (2015).

Note: ROSE-C = rest of the small economies of the world that are commodity-dependent; values greater than unity indicates better performance.

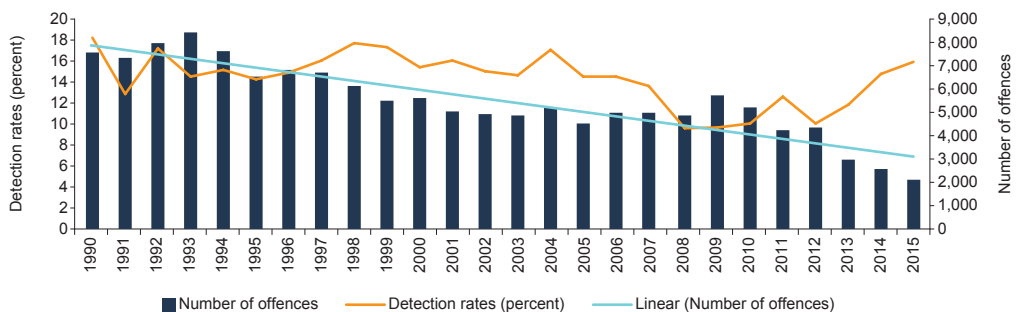
¹ LAPOP is a regularly conducted set of surveys on democratic values and behaviours in the Americas. The surveys cover the topics of trust in institutions, civil society participation, electoral behaviour, the economy, political legitimacy, and corruption and crime victimization.

Although violent crime rates in Trinidad and Tobago have marginally decreased in recent years, they remain some of the highest in the Caribbean and the world.

Fear of crime may be increasing because the detection of violent crimes has drastically declined over the years. Empirical evidence by Sookram, Saridakis, and Mohammed (2011) shows that past victimization, especially in the absence of police action and unreported attacks, perpetuated and increased fear of crime. One can therefore hypothesize that with marginally falling violent crime rates but drastically declining detection rates, the fear of crime in Trinidad and Tobago is high and could be increasing. For example, the murder rate increased from 84 murders in 1990 to 407 in 2013, while the detection rate dropped from 69 to 13 percent in the same period. The incidence of woundings and shootings in the same period increased from 391 to 542, while the detection rate declined from 61 to 24 percent. Similar but less drastic declines in detection rates were reported for other crimes (Figures 7.2–7.7).

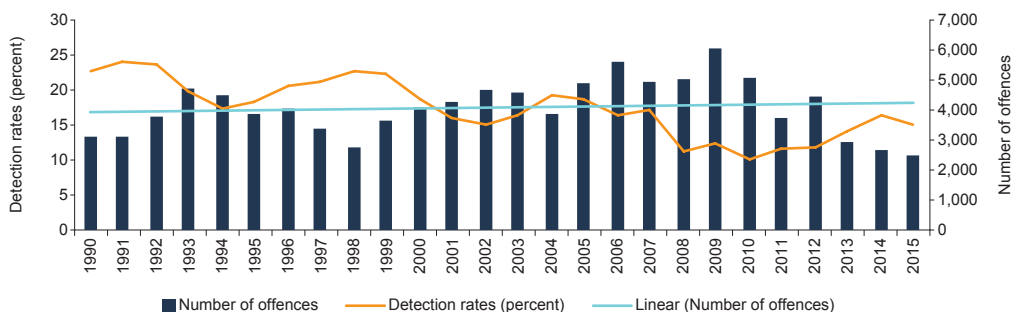
The cost of crime in Trinidad and Tobago is relatively high. Although no study to date has applied the accounting approach to measure the cost of crime in the country, the IDB (2016b) provides estimates on the total cost of crime by type and/or sector.

Figure 7.2: Burglaries and Break-ins

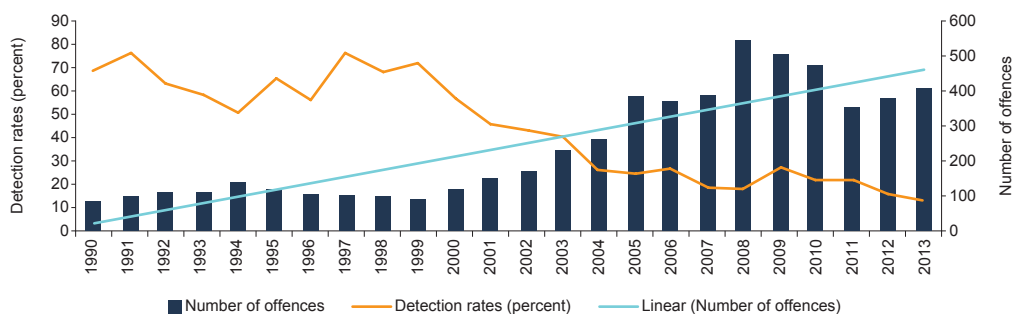


Source: IDB (2016a).

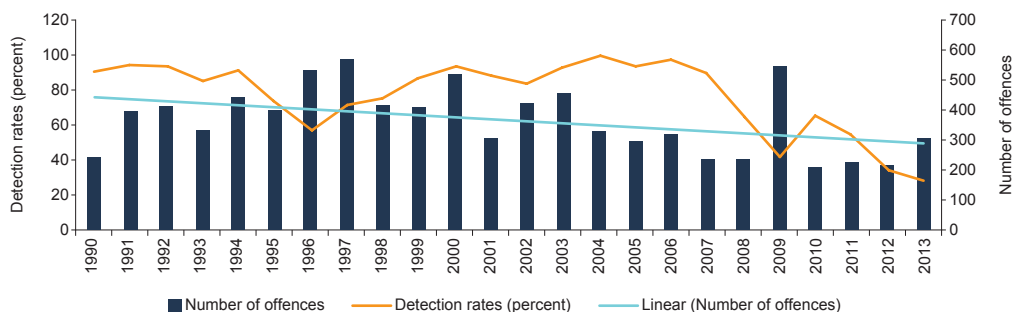
Figure 7.3: Robberies



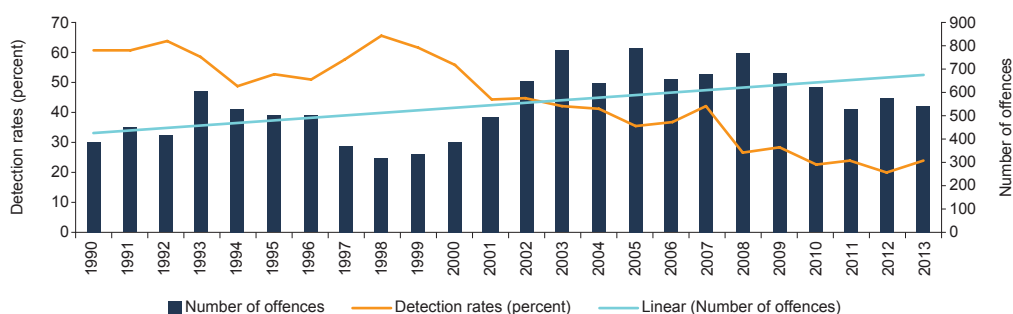
Source: IDB (2016a).

Figure 7.4: Murders

Source: IDB (2016a).

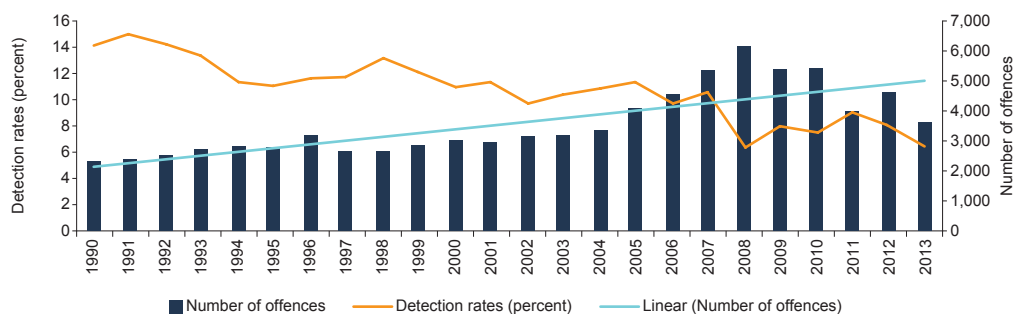
Figure 7.5: Fraud Offences

Source: IDB (2016a).

Figure 7.6: Woundings and Shootings

Source: IDB (2016a).

Private firms report spending nearly 4.5 times as much on crime-related costs as they do on research and development (3.89 percent versus 0.87 percent of annual sales). While nearly 80 percent of businesses report spending on private security measures, the amount spent (1.78 percent of sales) is comparable to the other Caribbean countries (1.99 percent) and lower than the average of ROSE-C (3.27 percent). Similarly,

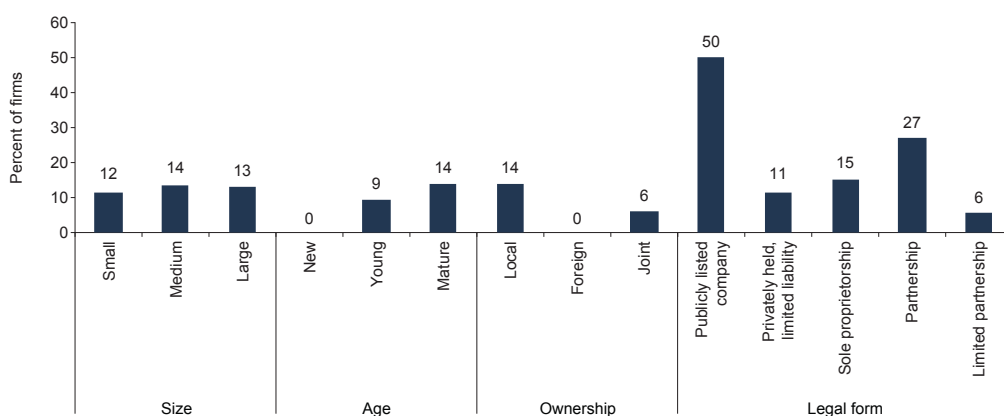
Figure 7.7: Larcenies and Larcenies of Motor Vehicles

Source: IDB (2016a).

financial losses due to crime (2.11 percent of annual sales) were relatively close to the Caribbean average (2.58 percent). In terms of overall cost, the IDB (2016a) found that government expenditure on security in Trinidad and Tobago is the highest in the Caribbean at 13.9 percent of the national budget and 12 percent of GDP.

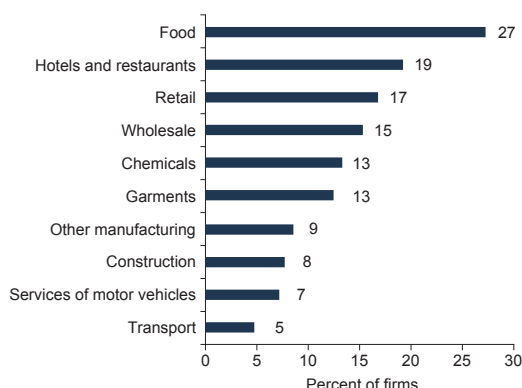
7.2 Firm-level Evidence

Crime is the third most serious obstacle to firm performance in Trinidad and Tobago: 12.7 percent of firms identified crime as the most serious obstacle to their operations. The evidence suggests that crime is a bigger problem for small and medium-sized enterprises (SMEs), mature firms, locally owned firms, and publicly held companies. Figure 7.8 shows the impact of crime differentiated by firm-level characteristics. The shares of small firms and medium-sized firms that identified crime as a major or severe obstacle to their performance are 12 and 14 percent, respectively, compared to

Figure 7.8: Percentage of Firms Affected by Crime, by Firm Characteristic, 2014

Source: PROTEqIN Survey, 2014.

Figure 7.9: Percentage of Firms Affected by Crime Differentiated by Sector, 2014

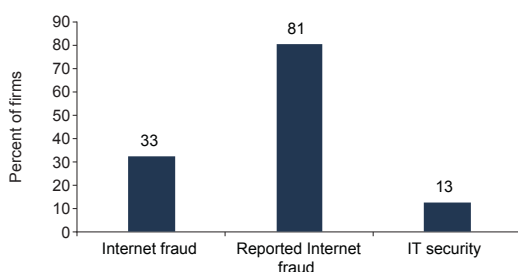


Source: PROTEqIN Survey, 2014.

the expertise to cope with crime compared to SMEs (Rios 2015). With respect to legal form, publicly held (limited liability) firms (50 percent), partnerships (27 percent), and sole proprietorships (15 percent) are affected the most by crime and violence.

Firms in the service sector are affected more by crime. The findings show that the food sector is most affected, with 27 percent of firms identifying crime as the most important obstacle to their operations (Figure 7.9). The hotels and restaurants sector is the second most affected, followed by the retail and wholesale sectors. This finding is consistent with the literature, which finds that firms in the service sector are more likely to be the victims of crime (Daniele and Marani 2011). With respect to Internet fraud, 33 percent of firms reported that they experienced such fraud in the last fiscal year (Figure 7.10). The vast majority (81 percent) reported the fraud to the police. However, only 13 percent of firms spent money on IT security in the last fiscal year.

Figure 7.10: Percentage of Firms Affected by Internet Fraud, 2014



Source: PROTEqIN Survey, 2014.

13 percent of large firms. In terms of the age of firms, 14 percent of mature firms report crime as a major problem compared to 9 percent of young firms. More locally owned (14 percent) and jointly owned firms (6 percent) report that crime is a major obstacle than do foreign-owned firms. This is consistent with the literature, which finds that foreign firms, particularly multinationals that operate in resource-bounded sectors, are more resilient to crime and violence because they tend to have high sunk costs, long investment horizons, and

Vandalism, theft, attempted robbery, and burglary are the four main categories of crimes that occur most frequently in Trinidad and Tobago. The 2014 PROTEqIN Survey asked firms to identify the types of crimes committed frequently and whether they occurred during working hours or after working hours. The highest share of firms (17 percent) reported that they were victims of deliberate damage and

vandalism, followed by theft (13.5 percent), attempted burglary (11 percent), burglary (10 percent), and robbery (9.1 percent). Firms also report that theft and vandalism occurred roughly three times per year; while burglary, attempted burglary, and robbery occurred, on average, twice per year. Most firms report that attempted robberies and theft occurred during working hours, while vandalism occurred outside of working hours (Table 7.1). The frequency of some crimes that occur during working hours has the potential to disrupt workflow and employee performance. Even those crimes that occur outside of working hours, such as damage and vandalism, could result in loss of work days and adversely affect a firm's output and productivity. Firms also report that firearms were mostly used in robberies, burglaries, assaults and threats; and knives were the main choice of weapon for theft and vandalism (Table 7.2). The main perpetrators of these crimes were mostly gangs or groups of criminals (Table 7.3).

Table 7.1: Incidence of Crime, 2014

	Category of Incidents	How Many Times in Last Fiscal Year?	When Did the Crime Occur?	
			During Working Hours?	Outside Working Hours?
	Percent of firms	Average Number of Events	Percent of firms	Percent of firms
Burglary	45	1	3	97
Attempted burglary	47	1	3	97
Robbery	39	2	81	19
Attempted robbery	52	1	93	7
Deliberate damage/vandalism	77	3	28	72
Theft	58	3	63	37
Assaults and threats	34	1	44	56

Source: PROTEqIN Survey, 2014.

Table 7.2: Weapons Used in Crimes (percent), 2014

	Knife	Firearm	Baseball Bat	Other
Burglary	18	62	3	18
Attempted burglary	27	24	30	19
Robbery	19	52	3	26
Attempted robbery	24	34	2	39
Deliberate damage/vandalism	28	13	3	56
Theft	52	35	2	11
Assaults and threats	40	48	12	0

Source: PROTEqIN Survey, 2014.

Table 7.3: Who Was the Perpetrator? (percent), 2014

	Group of Criminals	Gang Related	Someone Working Alone	A Fellow Employee	A Supplier	A Former Employee	Other
Burglary	21	56	3	6	0	15	0
Attempted burglary	11	46	14	11	8	8	0
Robbery	10	42	3	3	3	3	32
Attempted robbery	5	51	5	0	5	2	32
Deliberate damage/vandalism	10	27	2	0	0	2	60
Theft	30	52	2	0	0	0	15
Assaults and threats	22	56	4	4	0	0	15

Source: PROTEqIN Survey, 2014.

Money and goods or stocks are the main targets of crime and violence. With respect to burglary, 41.2 percent of firms reported that money was the motive, while 53 percent reported goods or stocks (Table 7.4). Similarly, for robberies, almost 50 percent of firms report that money was the intended item to be stolen. In addition, 78 percent of firms reported that money was the main motive for theft, and 74 percent of firms reported that money was the main motive for assaults and threats. In the case of vandalism, the main target was other company property, as reported by 70.5 percent of firms.

Table 7.4: Items Intended to Be Stolen or Damaged (percent), 2014

	Money	Goods or Stock	Other Company Property	Personal Possessions of Employees or Customers	Other
Burglary	41.2	52.9	2.9	2.9	
Attempted burglary	78.4	21.6			
Robbery	48.4	41.9		3.2	6.5
Attempted robbery	80.5	9.8	2.4	2.4	4.9
Deliberate damage/vandalism	3.3	21.3	70.5	1.6	3.3
Theft	78.3	17.4	4.4		
Assaults and threats	74.1	14.8		11.1	

Source: PROTEqIN Survey, 2014.

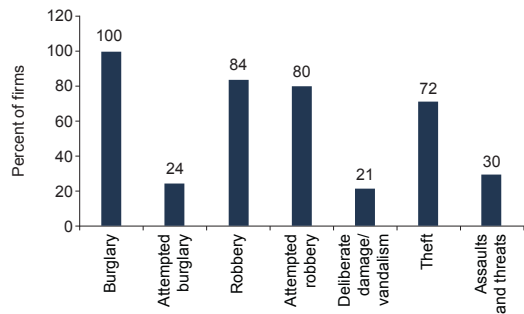
Most firms reported incidents of burglary, robbery, attempted robbery, and theft to the police. All firms reported burglary, while only 24 percent of firms reported attempted burglary (Figure 7.11). The reporting rate for robberies is lower, however, as only 84 percent of firms report this type of crime, although 80.5 percent report attempted robberies. Most firms do not report incidents of deliberate damage/vandalism to the police: only 21 percent of firms report this type of crime to

the police. Regarding assaults and threats, 29 percent of firms report this crime to the police. Interestingly, the highest incident rates were for deliberate damage/vandalism, so there is some underreporting of this type of crime in the official numbers.

Firms that do not report crimes to the police do so for various reasons. Poor police response was the main reason reported by firms for not reporting incidents of attempted burglary. The specific reasons cited by firms are that they attempted to contact the police but were unable to (14.3 percent of firms), the police have not done anything in the past (14.3 percent), and the police give little or no feedback on crime (14.3 percent) (Table 7.5). The reason for firms not reporting robberies is distributed equally among five responses: the loss was too small, the firm does not have the time to report, the crimes occur too frequently, fear of reprisals, and fear of negative publicity. In the case of attempted robbery, the main reason why firms chose not to report to the police is that it would result in an increase in their insurance costs (16 percent of firms). This is followed by poor police response and the frequent occurrence of attempted robberies. Small losses and a lack of police resources are the main reasons why most firms do not report deliberate damage or vandalism. With respect to theft, small losses, the inability to contact police, and the effect on insurance costs are the reasons why firms do not report. Poor police response and fear of negative publicity are why firms do not report assaults and threats.

Figure 7.12 summarises the cost of crime for firms. The PROTEqIN survey asked firms to report on whether they spent money on security, their expenditure on security as a share of sales, and their losses due to crime as a share of annual sales. The survey found that 85 percent of firms have spent money on security while 22 percent incurred losses due to crime. On average, firms spent about 2 percent of their annual sales on security and lost 2 percent of annual sales due to crime.

Figure 7.11: Firms that Report Crime to the Police, 2014



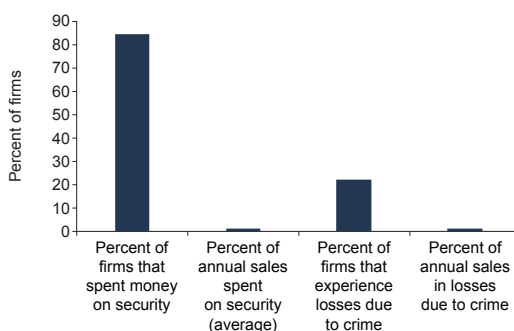
Source: PROTEqIN Survey, 2014.

Table 7.5: Reason for Not Reporting to the Police (percent), 2014

	Attempted Burglary	Robbery	Attempted Robbery	Deliberate Damage/Vandalism	Theft	Assaults and Threats
No loss or damage	7.1		3.2	2.1		
Loss was small	10.7	20.0	6.5	14.6	23.1	
Don't have the time; inconvenient	3.6	20.0	6.5	6.3		
They occur too frequently		20.0	9.7	4.2	7.7	
Tried to/was unable to contact police	14.3		9.7	8.3	15.4	
Police have not done anything in the past	14.3		6.5	4.2		26.3
Police could not have done anything	7.1		6.5	6.3	7.7	21.1
Not enough police/not enough resources			6.5	12.5		5.3
Police gives little/no feedback on crime/offenders are rarely caught or presecuted	14.3		9.7	4.2	7.7	10.5
There was no insurance requirement	10.7		6.5	6.3	7.7	15.8
Would increase insurance cost	10.7		16.1	8.3	15.4	
Fear of reprisals		20.0	6.5	8.3		
Fear of negative publicity	7.1	20.0	3.2	6.3	7.7	21.1
Other			3.2	8.3	7.7	

Source: PROTEqIN Survey, 2014.

Table 7.6 examines the impact of crime on firms as associated with firm characteristics. The findings show that medium-sized and large firms spend roughly 2 percent of their annual sales on security, compared to 1.1 percent for small firms. There is not much difference in expenditure on security between young and mature firms. However, foreign firms spend roughly

Figure 7.12: Impact of Crime on Firms, 2014

Source: PROTEqIN Survey, 2014.

Table 7.6: Impact of Crime on Firms by Firm Characteristics (percent), 2014

		Percent of Annual Sales Spent on Security	Percent of Annual Losses Due to Crime
Size	Small	1.5	1.6
	Medium	2.1	1.4
	Large	1.9	1.6
Age	Young	1.8	1.6
	Mature	1.9	1.5
Ownership	Local	1.9	1.5
	Foreign	6.0	1.7
	Joint	1.0	1.7
Legal form	Publicly listed company	5.0	
	Privately held, limited liability	1.9	1.6
	Sole proprietorship	1.3	1.5
	Partnership	3.3	1.2
	Limited partnership	1.5	1.6

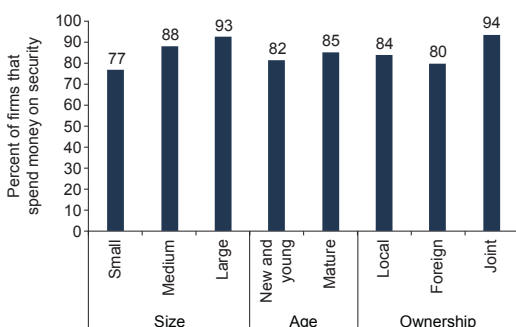
Source: PROTEqIN Survey, 2014.

6 percent of their sales on security compared to 2 percent for local firms and 1 percent for jointly owned firms. In terms of firms classified according to legal form, publicly listed companies spend the most on security (5 percent), followed by partnerships (3.3 percent) and privately held firms (2 percent).

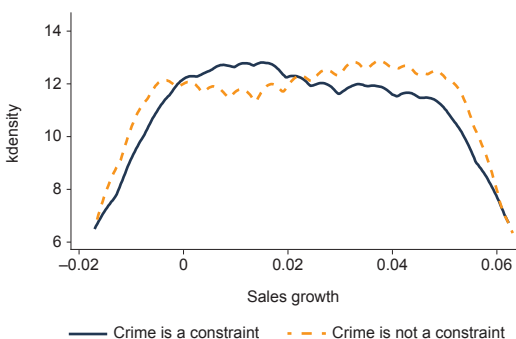
Foreign-owned and jointly owned firms report the highest losses due to crime. There is less heterogeneity when one considers annual losses by firms due to crime. Small and larger firms report an annual loss of 1.6 percent of annual sales, while medium-sized firms report an annual loss of 1.4 percent. Locally owned firms report marginally lower losses than foreign-owned firms, although the latter spend a significantly greater amount on security. Privately held firms, sole proprietorships, and limited partnerships report losses as a percent of annual sales of 1.6 percent, 1.5 percent, and 1.6 percent, respectively, compared to 1.2 percent for partnerships.

7.3 How Do Firms Respond to Crime?

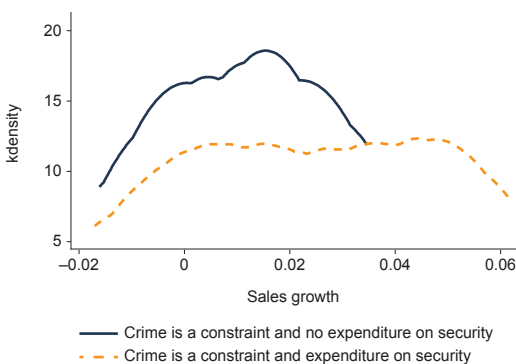
Firms that engage in self-protection have better performance than those that do not. Kimou (2015) examined the issue of crime, self-protection, and business performance in Côte d'Ivoire and found that self-protection is positively related to business sales. Kimou's results showed that firms with large assets that had been affected by crime were likely to pay for security. But the author also noted that self-protection results

Figure 7.13: Firms that Spend on Security, 2014

Source: PROTEqIN Survey, 2014.

Figure 7.14: Crime Is a Constraint

Source: PROTEqIN Survey, 2014.

Figure 7.15: Firms that Self-protect

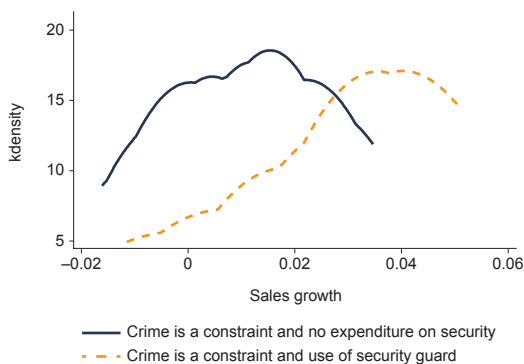
Source: PROTEqIN Survey, 2014.

in reduced profits and private investments, suggesting that at the firm level there may be negative returns from private policing.

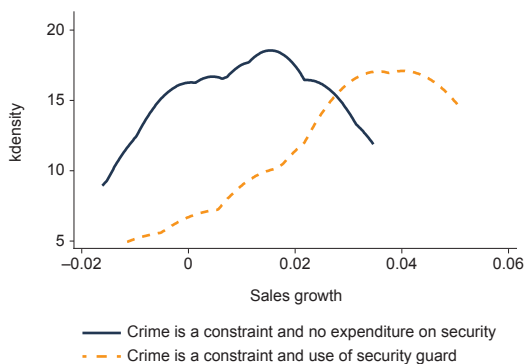
The micro-level data are then used to determine if the benefits of self-protection hold for Trinidad and Tobago. Figure 7.13 shows firm expenditure on crime disaggregated by characteristics. Overall, 84.7 percent of all firms in our sample reported expenditure on security in the last fiscal year. Figure 7.13 shows a breakdown of expenditure on security by firm characteristics. No major differences are found, with the exception that relatively fewer small, new and young, and foreign-owned firms spend on security.

Figures 7.14–7.19 explore relationships between a performance indicator (sales growth) and different aspects of crime. The distribution in Figure 7.14 shows that firms that identified crime as a major or severe obstacle tend to have lower sales growth than firms that reported crime as not being a major or severe problem. Taking the sub-sample of firms that have identified crime as a major or severe obstacle, one can observe that firms that do not spend money on security have lower sales growth compared with those that do spend on security. Moreover, where crime is a major or severe obstacle, firms that use various types of protection do better than firms that take no action (Figures 7.15–7.19). The downside of

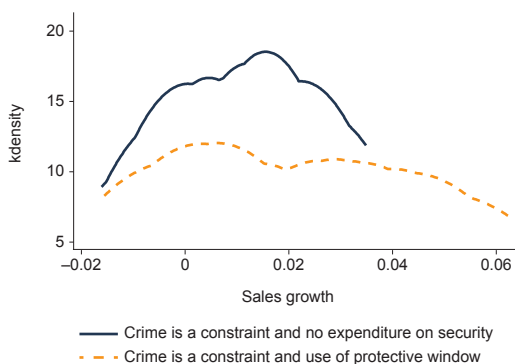
spending on security divert resources from investments that could otherwise improve

Figure 7.16: Use of Security Guards

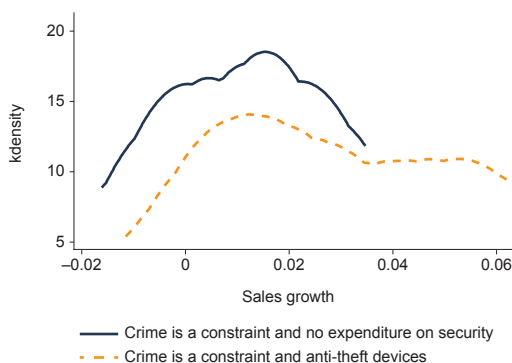
Source: PROTEqIN Survey, 2014.

Figure 7.17: Use of Alarms and Gates

Source: PROTEqIN Survey, 2014.

Figure 7.18: Use of Protective Windows and Doors

Source: PROTEqIN Survey, 2014.

Figure 7.19: Use of Anti-theft Devices

Source: PROTEqIN Survey, 2014.

productivity and output. One area of importance is investment in research and innovation. The firm-level data show that, on average, firms in Trinidad and Tobago spend roughly twice as much on security than on innovation.

7.4 Conclusion

In the 2014 PROTEqIN survey, firms in Trinidad and Tobago identified crime and violence as the third most serious obstacle affecting their performance. The macro-level evidence suggests a marginal decline in the incidence of violent crime, but an even greater drop in detection rates. This appears to have exacerbated the fear of crime. The micro-level data reveal that some types of firms are affected more than others, with SMEs, mature firms, and locally owned firms most affected. Most firms are victims of deliberate damage/vandalism, theft, attempted robbery, and burglary. Firearms are

mostly used in robberies, burglaries, assaults, and threats, while knives are the main choice of weapon for theft and vandalism. The main perpetrators are gangs or groups of criminals. Most firms reported incidents of burglary, robbery, attempted robbery, and theft to the police, but did not report incidents of deliberate damage/vandalism. Those firms that do not report crime do so because of poor police response in the past, small losses, frequent occurrence of crime, fear of reprisals, fear of negative publicity, and insurance costs. In terms of the cost to firms, medium-sized and large firms spend more on security, while foreign firms spend roughly three times more than local firms and six times more than jointly owned firms. The data suggest a strong positive association between firms that self-protect and sales growth.

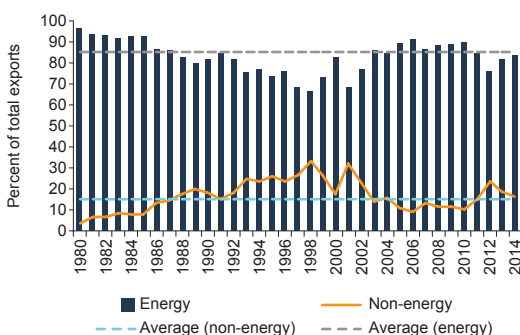
Foreign Trade, Infrastructure, Competition, and Innovation

The literature has found that international trade has a positive effect on economic growth. Wagner (2007) suggested that greater participation in international trade exposes firms to more intense competition and thus improves productivity and performance. It is generally argued that exporting allows firms to benefit from economies of scale, increase productivity, improve capacity utilization, and increase labour productivity and technological progress (World Bank 1993). Thus, factors that directly inhibit a firm's ability to export present a challenge to overall economic growth. The goal in this chapter is to evaluate the main obstacles to entry into export markets by firms in the non-energy sector in Trinidad and Tobago.

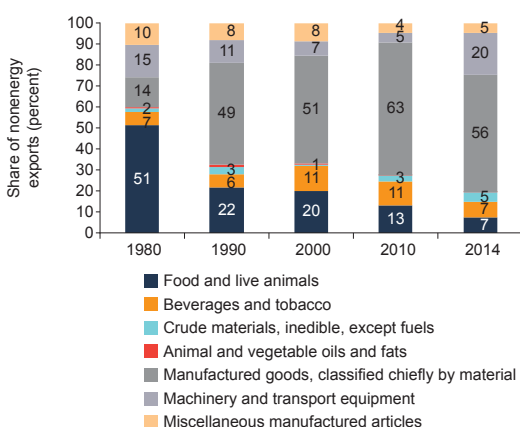
8.1 Context

The previous chapters examined the major obstacles to firm performance as identified by businesspersons. In this chapter, the export challenges of the private sector are examined. This is a particularly important issue for Trinidad and Tobago, especially since export diversification has been identified as critical to reducing energy dependence and vulnerability to external shocks (Jessen 2004). As part of its strategy to diversify export markets and increase exports, Trinidad and Tobago signed several trade agreements with countries in Latin America, North America, and Europe (McLean 2013). However, as the data in the next section show, improved market access has not resulted in improved entry or export performance, particularly for non-energy products.

The share of non-energy tradable exports in Trinidad and Tobago's total exports has declined in the last decade. The share of non-energy exports in total merchandise exports increased from a low of 3 percent in 1980 to peak at 33 percent in 1998 before declining to 16 percent in 2014 (Figure 8.1). The composition of non-energy exports has also changed over the past four decades. In the 1980s, food and live animals accounted for roughly half of total non-energy tradable exports, followed by machinery and transport equipment (15 percent) and manufactured goods (14 percent). By 2014, the share

Figure 8.1: Energy and Non-energy Exports

Source: Author's estimates based on data from the World Integrated Trade Solution database.

Figure 8.2: Changes in the Composition of Non-energy Exports

Source: Author's estimates based on data from the Central Statistical Office, Trinidad and Tobago.

of manufactured goods and machinery and transport equipment in total non-energy tradable exports had increased to 56 percent and 20 percent, respectively (Figure 8.2).

Exports are highly concentrated in a few products and markets. Iron and steel, transport equipment, and beverages account for 70 percent of non-energy exports (Figure 8.3). The United States is the main export market, accounting for almost 32 percent of total non-energy tradable exports, followed by Norway (7 percent), Spain (6 percent), and Jamaica (4 percent) (Figure 8.4). This is also reflected in the firm-level data: 75 percent of firms report that their main product accounts for 65 percent, on average, of their total sales.

Most of the non-energy export products are in stagnant sectors. Following the Trade Competitive Analysis of Nations (TradeCAN) methodology developed by the Economic Commission for Latin America and the Caribbean (ECLAC), Trinidad and Tobago's non-energy products are classified as either dynamic or stagnant (ECLAC 1999).¹

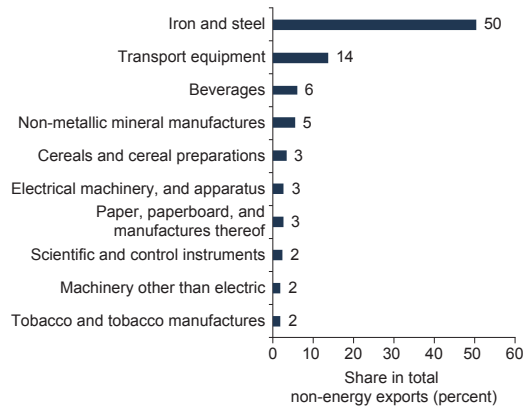
These two classifications are used to determine whether products are “rising stars,” “declining stars,” “retreats,” or “missed opportunities” (Figure 8.5). A sector is defined as dynamic if its share in world demand has increased from a base year (2000) to a final year (2014), while a sector experiencing a fall in the share of world demand is referred to as stagnant. Rising stars are products that gain market share in a dynamic

¹ See Annex 3 at the end of this volume for more on the TradeCAN methodology.

market from a base year (2000) to a final year (2014), and declining stars are products that gain market share in a stagnant market. Missed opportunities are products that lose market share in a dynamic market, and retreats are products that lose market share in a stagnant market. Most non-energy export products (51 percent) are in stagnant sectors, with 37 percent classified as retreats and 14 percent as declining stars. Rising stars and missed opportunities account for 10 and 39 percent of products, respectively (Figure 8.6).²

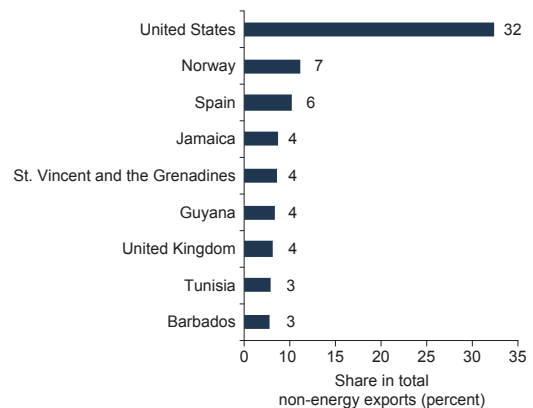
Similarly, the revealed comparative advantage (RCA) index shows that Trinidad and Tobago has lost comparative advantage in more non-energy products than it has gained. The RCA index is a good indicator of a country's export potential relative to other countries. The RCA of a country is measured by the relative share of total exports of commodities in a country over the percentage of world exports in that commodity (Balassa 1965). A $RCA > 1$ means that the country has a revealed comparative advantage in a given commodity. When $RCA < 1$, it means there is a revealed comparative disadvantage in a given commodity. The results from the RCA index show that Trinidad and Tobago has lost comparative advantage in 10 non-energy products since 2000, gained comparative advantage in four products, and retained comparative advantage in five products (Table 8.1).

Figure 8.3: Main Products Exported, 2014



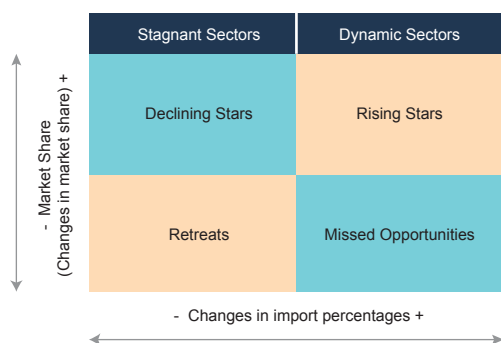
Source: Author's estimates based on data from the World Integrated Trade Solution database and the Central Statistical Office, Trinidad and Tobago.

Figure 8.4: Main Non-energy Markets, 2014

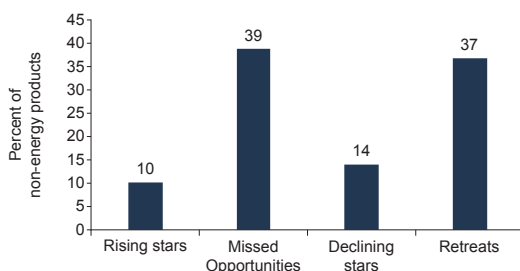


Source: Author's estimates based on data from the World Integrated Trade Solution database and the Central Statistical Office, Trinidad and Tobago.

² Annex 4 at the end of this volume provides a detailed breakdown by commodity according to the Trade-CAN methodology.

Figure 8.5: Trade Competitiveness Matrix

Source: ECLAC (1999).

Figure 8.6: Trade Competitiveness Matrix Applied to Trinidad and Tobago

Source: Author's estimates based on data from the World Integrated Trade Solution database; based on ECLAC (1999).

Table 8.1: Revealed Comparative Advantage Index for Non-energy Products

SITC 3 Digit Code	Description	2000	2014
Sectors that lost comparative advantage			
46	Meal and flour of wheat	1.79	0.82
53	Fruit preserved	1.38	0.73
61	Sugar and honey	5.39	0.07
62	Sugar confectionery	2.34	0.72
72	Cocoa	1.01	0.12
99	Food preparations	1.45	0.32
112	Alcoholic beverages	1.64	0.87
642	Articles of paper, pulp, paperboard	2.75	0.79
665	Glassware	1.49	0.77
Sectors that gained comparative advantage			
122	Tobacco manufactures	0.87	1.82
282	Iron and steel scrap	0.03	1.13
672	Ingots and other primary forms of iron	0.03	3.04
793	Ships and boats	0.11	2.90
Sectors that retained comparative advantage			
48	Cereal preps & preps of flour	2.32	1.58
91	Margarine & shortening	3.66	1.28
111	Non-alcoholic beverages	11.45	4.46
671	Pig iron, spiegeleisen, sponge iron	11.43	28.67
673	Iron and steel bars, rods, angles	10.34	2.59

Source: Author's calculations based on the UN COMTRADE database, 2016.

Note: RCA = revealed comparative advantage.

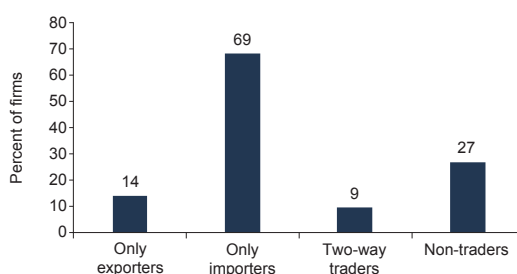
In summary, the macro-level evidence suggests that total non-energy exports are low and have declined relative to total exports. Moreover, non-energy exports are highly concentrated in a few markets and products, and a similar level of product and market concentration is observed at the firm level. The findings show that most products are missed opportunities, which means that Trinidad and Tobago is losing market share for products for which world demand is increasing. The next section reviews the literature and firm-level data on factors that influence a firm's export status and performance.

8.2 Firm-level Evidence

Not many firms in Trinidad and Tobago are exporters. Firms are classified into four groups (Seker 2009): firms that import material inputs or supplies and export (two-way traders); firms that only export (only-exporters); firms that only import (only-importers); and firms that do not engage in international trade (non-traders). The data show that 9 percent of firms engage in two-way trade, 14 percent are only exporters, 69 percent are only importers, and 27 percent do not engage in foreign trade (Figure 8.7). Firms that are two-way traders and exporters report higher employment levels compared with importers and non-traders. With respect to performance, non-traders and importers report higher sales growth compared with other types of traders, while there is no significant difference for total factor productivity between traders and non-traders (Figure 8.8).

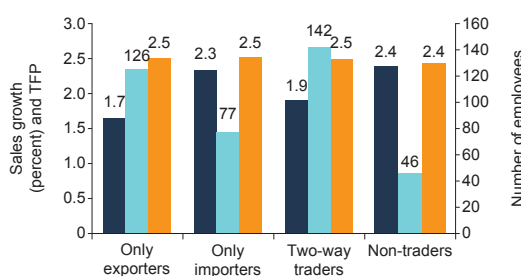
What influences entry into export markets? The literature suggests that firm-specific characteristics such as size, age, ownership status (foreign-owned), legal form (shareholding firms, publicly listed, or privately held), and sector of operation (manufacturing sector) are positively related to export participation and export performance (Amornkitvikai,

Figure 8.7: Trade Orientation



Source: Author's estimates based on the PROTEqIN Survey, 2014.

Figure 8.8: Trade Orientation and Performance



Source: Author's estimates based on the PROTEqIN Survey, 2014.

Note: TFP = total factor productivity.

Harvie, and Charoenrat 2013; Moore 2006). However, with respect to firm age, a recent study of 111 developing countries by Bangwayo-Skeete and Moore (2015) found a negative relationship between age and export participation in developing countries, contrary to previous studies (Aitken, Hanson, and Harrison 1997; Moore 2006; Roberts and Tybout 1997). Bangwayo-Skeete and Moore (2015) argued that young firms are more likely to penetrate export markets, as mature firms may have already captured a large share of the domestic market. Thus, to survive, younger firms enter foreign markets.

Apart from firm-specific characteristics, the literature has found that infrastructure affects firms' foreign market participation status. Specifically, Bangwayo-Skeete and Moore (2015) found that obstacles related to electricity supply, transportation, and access to land for expansion reduce the prospect of firms entering export markets (see also Francois and Manchin 2007). In contrast, government assistance, subsidies, and research and development have a positive effect on the export status of firms (Moore 2006). Young (1987) and Christensen (1991) found that lower trade barriers such as tariff rates and non-tariff barriers, which are associated with lower transaction costs, encourage greater levels of export activity.

The rest of this chapter examines firm- and macro-level data to determine how these factors—firm characteristics, customs and trade regulations, infrastructure, government assistance and subsidies, competitiveness, and innovation—are related to firms' export status and performance in general.

8.2.1 Firm Characteristics

Firm characteristics and sector concentration are not favourable in Trinidad and Tobago. The literature suggests that firms that are large, young, and foreign-owned and that operate in the manufacturing sector are more likely to engage in exports. However, most firms in Trinidad and Tobago are small and medium-sized enterprises, mature, locally owned, and operate in the service sector. Only a small share of Trinidad and Tobago firms engage in exports: 14 percent of firms report that a percentage of their sales came from direct exports. In addition, exports account for a small share of total sales for most exporters: 65 percent of exporting firms report that exports account for 25 percent or less of total sales, while only 4.32 percent of exporting firms report that more than 75 percent of total sales are from exports. The percentage of exporting firms is also lower in Trinidad and Tobago compared to other Caribbean countries (Figure 8.9). In terms of the characteristics of current exporters, 47 percent are large firms, 32 percent are medium-sized firms, and 21 percent are small firms (Figure 8.10). Regarding firm age, 89 percent of mature firms are exporters compared to 11 percent of young firms. With respect to the legal form of current exporters, 47 percent are privately held companies, 23 percent are limited partnerships, 11 percent are partnerships, and 19 percent

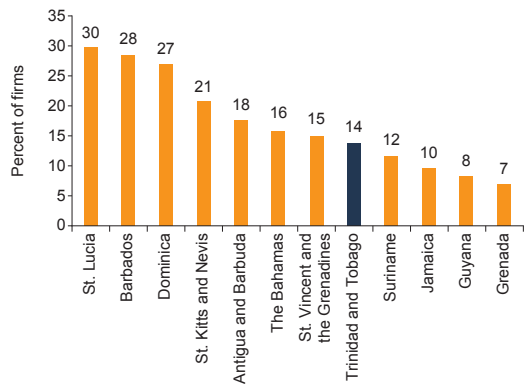
are sole proprietorships. Although the service sector accounts for 66 percent of all firms, consistent with the literature, the evidence shows that most exporters (64 percent) are from the manufacturing sector.

8.2.2 Customs and Trade Regulations

Customs and administrative procedures are one of the main non-tariff trade barriers that firms have to contend with in developing countries (Fliess and Lejarraga 2005). These barriers usually consist of complex

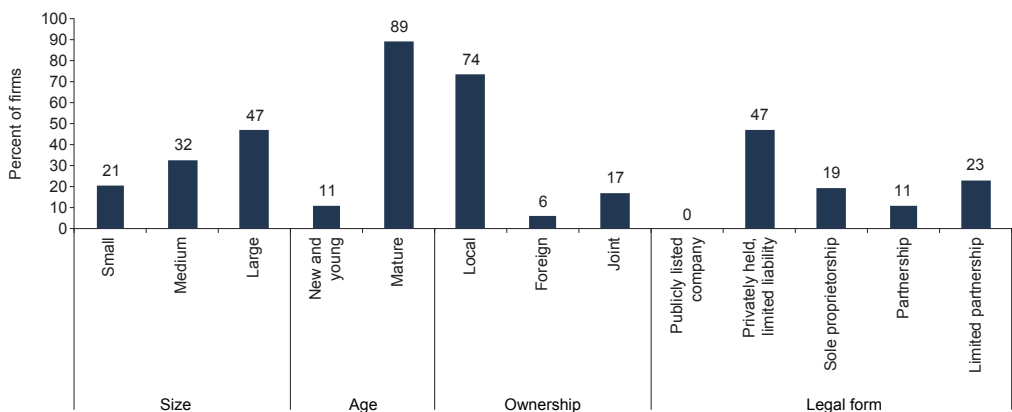
customs procedures and documentation requirements that impede the flow of goods across borders and often result in losses to traders. For example, weak and inefficient customs and administrative procedures can lead to indirect costs for businesses due to uncertainty in the delivery of goods. This in turn can add to storage costs and losses in business opportunities. Some of the most critical border issues are bottlenecks in trade-related infrastructure, ranging from transportation of cargo to the actual port-based handling of cargo. Indeed, studies such as OECD (2002) have shown that trade transaction costs account for as much as 2 to 15 percent of the value of goods and services that are traded in developed countries.

Figure 8.9: Share of Exporting Firms by Country



Source: Author's estimates based on the PROTEqIN Survey, 2014.

Figure 8.10: Characteristics of Exporting Firms in Trinidad and Tobago



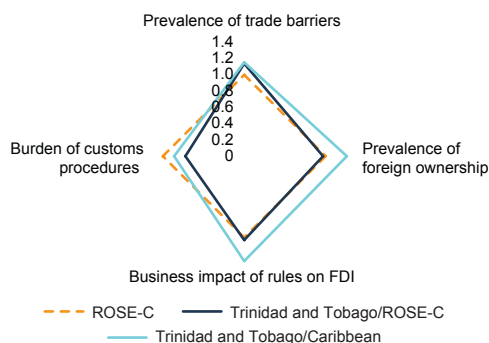
Source: Author's estimates based on the PROTEqIN Survey, 2014.

Table 8.2.: Transaction Costs in International Trade, Regional Average in 2014

Economy Name	Documents to Export (number)	Time to Export (days)	Cost to Export (U.S. dollars per container)	Documents to Import (number)	Time to Import (days)	Cost to Import (U.S. dollars per container)
East Asia and Pacific	6	20	864	7	22	896
High-income OECD countries	4	11	1,080	4	10	1,100
Trinidad and Tobago	5	11	843	10	14	1,260
Middle East and North Africa	6	19	1,166	8	24	1,307
CARICOM countries	6	16	994	7	16	1,685
Latin America and Caribbean	6	17	1,299	7	19	1,691
South Asia	8	33	1,923	9	34	2,118
Europe and Central Asia	7	24	2,155	8	26	2,436
Sub-Saharan Africa	8	31	2,201	9	38	2,931

Source: World Bank, World Development Indicators.

Note: CARICOM = Caribbean Community; OECD = Organisation for Economic Co-operation and Development.

Figure 8.11: Businesspersons' Perceptions of Trade Barriers

Source: World Economic Forum (2015).

Note: FDI = foreign direct investment; ROSE-C = rest of the small economies of the world that are commodity-dependent; values greater than unity indicate a better performance.

Are customs and administrative procedures a challenge? Trinidad and Tobago has good access to external markets through several trade agreements, and transaction costs do not appear to be a constraint to most exporters. Indeed, only 4.1 percent of firms identified customs and regulations as the most serious obstacle to performance (Chapter 3). The data show that Trinidad and Tobago performs better than other regions in terms of the main indicators of transaction costs outlined in Table 8.2, and this is generally consistent with the perception of businesspersons (Figure 8.11).

In terms of the documents and time required to export, Trinidad and Tobago ranks relatively high—just below the group of high-income Organisation for Economic Co-operation and Development (OECD) countries—with five documents,

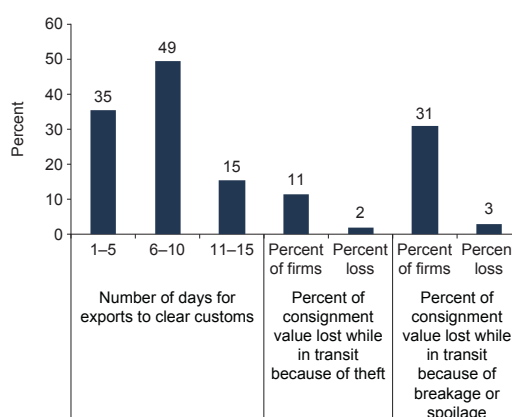
and equal to the average for Latin America and Caribbean countries. Trinidad and Tobago also ranks better in terms of the time it takes to export, which is about 11 days. The cost to export a container is also low for Trinidad and Tobago firms, below the OECD average. On the import side, however, the country performs relatively poorly in the cost of importing a container and the number of documents required to import.

Firm-level evidence from the Productivity, Technology and Innovation (PROTEqIN) Survey supports the finding that customs and trade regulations are not substantial barriers to exporters. The data show that most firms take less than 10 days to clear customs, lower than the average for other regions (Figure 8.12). However, firms experience losses of up to 5 percent of the consignment value due to theft and breakage or spoilage. The number of days to import is much higher, as most firms report longer than 6–10 days (Figure 8.13).

8.2.3 Infrastructure

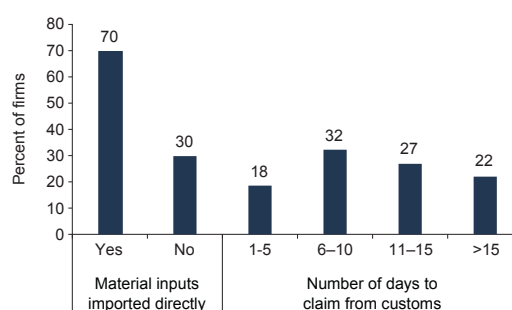
Access to reliable infrastructure, such as electricity supply, transportation, land, and telecommunications services, is important to a firm's performance and export status. Ample evidence suggests a strong relationship between infrastructure, firm performance, and exports. Celbis, Nijkamp, and Poot (2014) estimated the importance of infrastructure for trade and found that a 1 percent improvement in infrastructure raises a country's exports by 0.6 percent and imports by about 0.3 percent (see also Canning and Pedroni 2008, and Calderón and Servén 2004). At the firm level, Reinikka and Svensson (2002) found that unreliable and inadequate electricity supply reduces firm investment. Similarly, transportation infrastructure and

Figure 8.12: Customs Procedures Required to Export

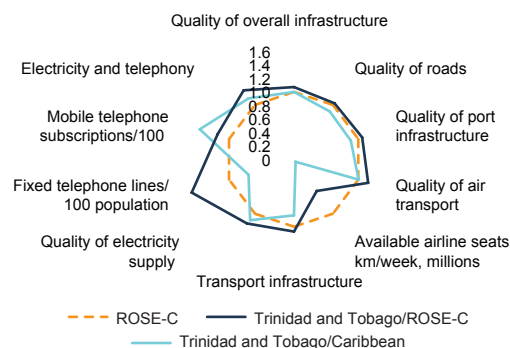


Source: Author's estimates based on the PROTEqIN Survey, 2014.

Figure 8.13: Customs Procedures Required to Import

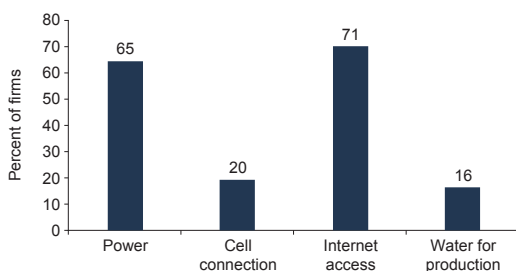


Source: Author's estimates based on the PROTEqIN Survey, 2014.

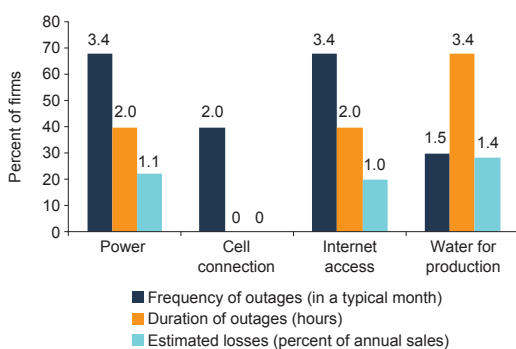
Figure 8.14: Businesspersons' Perceptions of Infrastructure

Source: World Economic Forum (2015).

ROSE-C = rest of the small economies of the world that are commodity-dependent; values greater than unity indicate a better performance.

Figure 8.15: Percentage of Firms Experiencing Interruptions

Source: Author's estimates based on the PROTEqIN Survey, 2014.

Figure 8.16: Frequency, Duration, and Estimated Loss Due to Interruptions

Source: Author's estimates based on the PROTEqIN Survey, 2014.

transportation costs are also important elements in improving market access for firms to expand (Bernard, Jensen, and Schott 2006; Goedhuys and Sleuwaegen 2009).

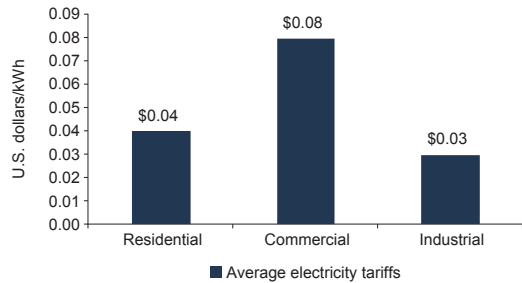
Is infrastructure a constraint? Perceptions of businesspersons about the quality of overall infrastructure are favourable relative to the rest of the small economies of the world that are commodity-dependent (ROSE-C) and the Caribbean (Figure 8.14). With respect to public services, the effect on firms can be through either cost or reliability of supply. With respect to the latter, a large share of firms report electricity outages (65 percent of firms) and Internet interruptions (71 percent of firms), with a frequency of five interruptions per month and an average duration of three hours per interruption (Figure 8.15). The literature notes that a high frequency and duration of outages increase a firm's operation and maintenance costs due to damage to product quality and setbacks in production and delivery schedules (Lai, Yik, and Jones 2008; Wang 2002). Trinidad and Tobago firms report losses of 1.5 percent of sales for electricity and water interruptions and 1 percent of sales for Internet interruptions (Figure 8.16). Given the importance of energy to firm performance, firms that experience problems of outages tend to substitute away from grid electricity

when shortages are severe (Alam 2013; Fisher-Vanden, Mansur, and Wang 2015). The data show that 33 percent of firms that experience power outages own or share a generator. Thus, the evidence suggests that reliability and quality of public services is an issue for firms.

Electricity and transportation costs are an important component of a firm's cost function. Studies have shown that high energy costs or increases in energy prices reduce firm competitiveness and exports. Bureau, Fontagné, and Martin (2013) estimated the effect of an increase in electricity prices on firm exports. They found that a 10 percent increase in the price of electricity reduces the value of exports and imports by an average of 1.9 and 1.1 percent, respectively. Therefore, firms that benefit from lower electricity and gas prices can have a relatively competitive advantage in export markets.

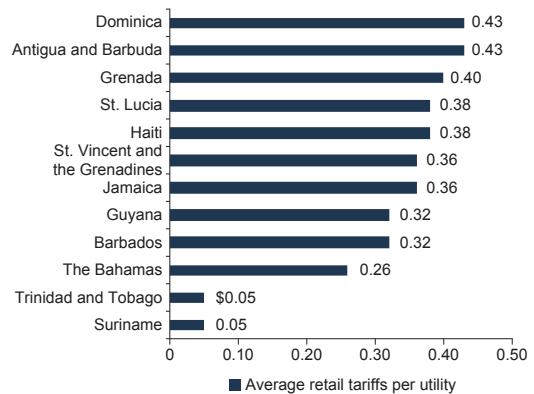
The cost of electricity and transportation does not appear to be a major problem for firms in Trinidad and Tobago. Firms benefit from generous energy subsidies that reduce their costs of operation through low electricity costs and fuel prices. The electricity subsidy is indirect and difficult to quantify. According to the World Trade Organization's 2006 World Trade Policy Review for Trinidad and Tobago, the subsidy is applied as follows: "The Trinidad and Tobago Electricity Commission (T&TEC) purchases bulk electrical power from independent generation companies and secures fuel supply for them from the National Gas Company. The prices paid by the T&TEC for the natural gas are based on costs of production; they are not publicly disclosed" (WTO 2006). The electricity subsidy therefore lowers firms' production costs relative to firms in other countries. Figures 8.17 and 8.18 show that the average retail electricity tariff in Trinidad and Tobago is the lowest in the Caribbean at \$0.05 per utility. The commercial and

Figure 8.17: Average Electricity Tariffs for Trinidad and Tobago

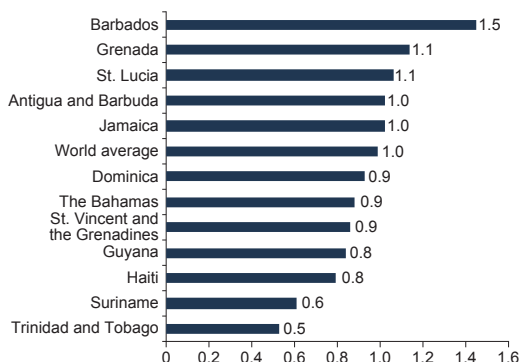


Source: Trinidad and Tobago Electricity Commission.

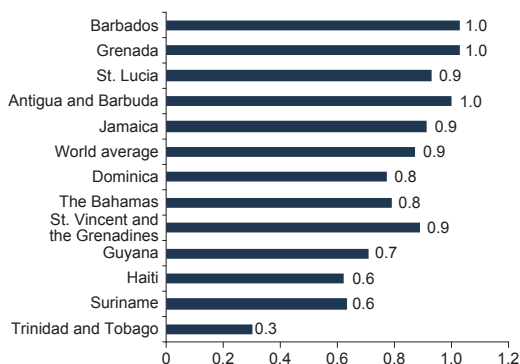
Figure 8.18: Average Retail Electricity Tariff by Country (U.S. dollars/kWh)



Source: Inter-American Development Bank.

Figure 8.19: Gasoline Prices (in U.S. dollars)

Source: Global Petrol Prices.

Figure 8.20: Diesel Prices (in U.S. dollars)

Source: Global Petrol Prices.

industrial tariff rates charged are also lower than the average retail tariffs in other Caribbean countries.

Trinidad and Tobago firms benefit from one of the lowest fuel prices in Caribbean (Figures 8.19 and 8.20). As discussed earlier, transportation cost has a positive effect on a firm's performance and export status—at least for those firms that intensively utilise domestic transportation. In Trinidad and Tobago, fuel prices (gasoline and diesel) are subsidised under the Petroleum Production Levy and Subsidy Act of 1974. This act facilitates the payment of a subsidy to persons involved in petroleum marketing whenever the reference price is above the controlled consumer price (retail price) for petroleum fuels. The reference price equals the ex-refinery price plus handling charges plus excise duties on oil plus the wholesaler's margin. The retail price (fixed) is set by the Ministry of Energy and Energy Affairs. The largest part of the fuel subsidy is the transport fuel

subsidy, of which roughly 60 percent goes to diesel. The fuel subsidy allows Trinidad and Tobago to have one of the lowest prices of gasoline and diesel in the Caribbean, with prices that are lower than the world average.

What is the cost at the firm level? Firm-level data reveal that Trinidad and Tobago firms have relatively lower fuel and electricity costs than the rest of the Caribbean. The average fuel cost (as a percent of sales) for firms in Trinidad and Tobago is almost 1.5 times lower than that of the rest of the Caribbean—i.e., 1.7 percent of total sales for Trinidad and Tobago compared with 2.4 percent for the rest of the Caribbean (Figure 8.21). With respect to electricity costs, the difference is much larger. Electricity costs for Caribbean firms average 6.2 percent of total sales compared with 1.9 percent of sales for Trinidad and Tobago firms. These lower costs provide a boost

to firm competitiveness, particularly for those firms that intensively use energy.

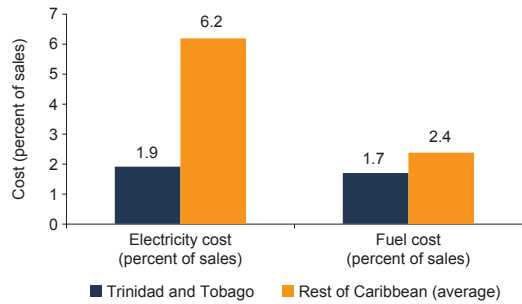
8.2.4 Government Assistance

ExporTT, Trinidad and Tobago's national export facilitation agency, has the mandate to promote and develop exports and provide support to the country's exporters. With respect to export development, ExporTT provides training programs, assists firms with implementation of quality and safety standards, provides co-financing for market entry costs such as shipping of samples, provides interpretation costs, assists with registration of brands and companies, and extends research and development grants. On the export promotion side, it facilitates market research missions to targeted markets, trade missions, trade shows, and market research.

Information for the first 10 months of fiscal year 2015 shows that ExporTT executed 30 training programs that benefited 381 companies. For the same period, 53 firms benefited from programs that helped with implementation of quality and safety standards. ExporTT offers its assistance to all sectors, including services. Some of the key measures undertaken to improve exporter competitiveness include making competitor information available to exporters. This includes providing information on where products are sold and distributed, size, prices, competitors, and labelling and packaging requirements. If firms have deficiencies in any of these areas, ExporTT provides support through co-financing, research and development grants, and implementation of standards to enable improvement.

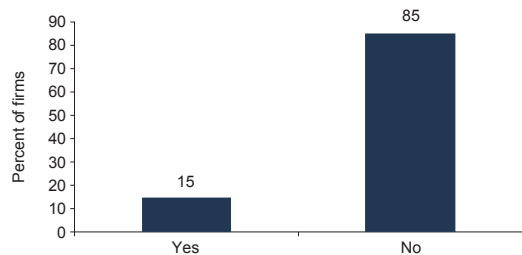
Firm-level data, however, show that most firms do not currently benefit from technical assistance programs and fall short of achieving goals related to export promotion and lowering cost per unit. As shown in Figure 8.22, 85 percent of firms report that they do not currently

Figure 8.21: Cost of Fuel and Electricity for Firms

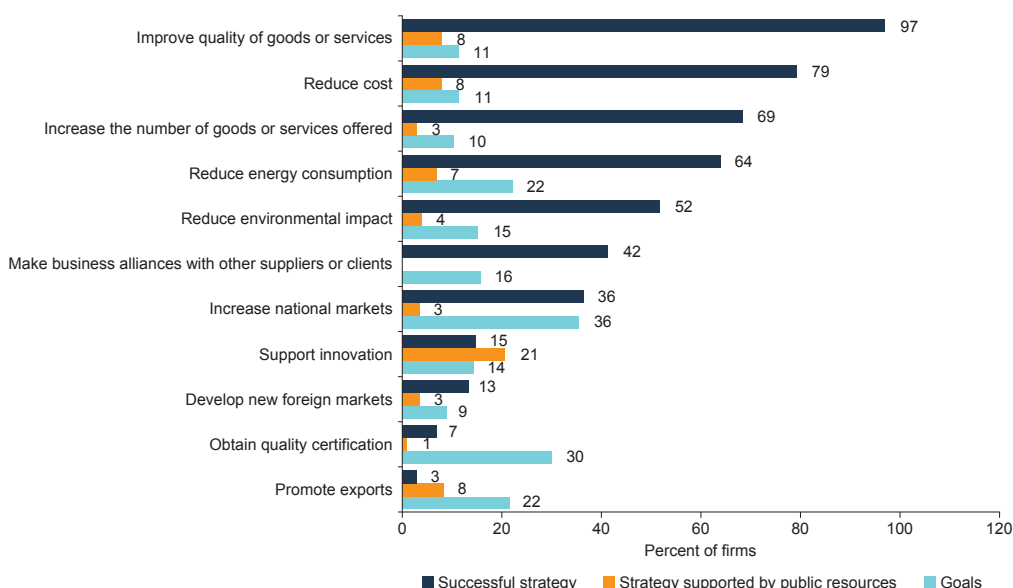


Source: Author's estimates based on the PROTEqIN Survey, 2014.

Figure 8.22: Firms that Benefit from Technical Assistance Programs



Source: Author's estimates based on the PROTEqIN Survey, 2014.

Figure 8.23: Business Strategy and Support Programs

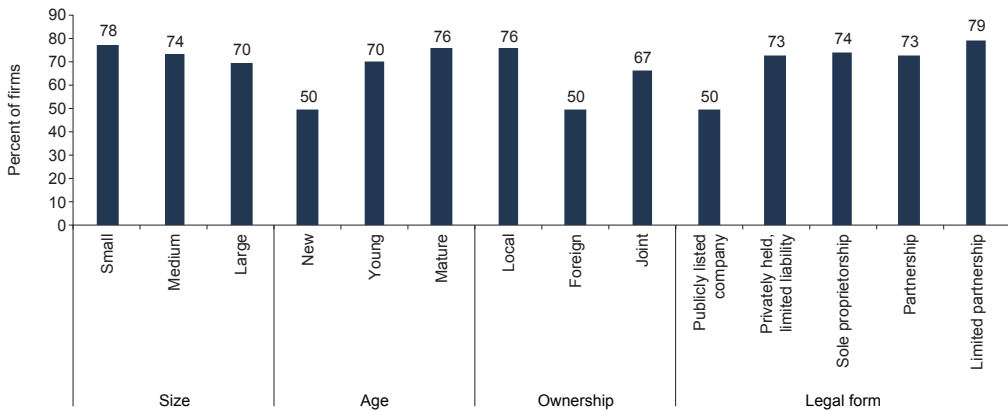
Source: PROTEqIN Survey, 2014.

benefit from technical assistance programs.³ Firms were asked to report on their goals in the previous two fiscal years, whether public resources were available to support their strategy, and if their strategy was successful. The top three goals as identified by most firms were to increase national market share (36 percent of firms), obtain quality certification (30 percent), and promote exports (22 percent) (Figure 8.23). Only a small share of firms received public support to achieve those goals: 3 percent of firms reported receiving support to increase national market share, 1 percent to obtain quality certification, and 8 percent to promote exports. Export promotion was the least successful strategy pursued by firms, with only 3 percent of firms reporting success. Of the top three goals, more firms were successful at increasing national market share (36 percent of firms) and obtaining quality certification (7 percent of firms).

8.2.5 Competition

The literature has found that although competition is good for growth and productivity, too much domestic competition among small firms in a domestic market can restrict firm growth and reduce the export potential of those firms. Moore (2006) showed that domestic competition has an effect on export status, but while one may hypothesize that a high level of domestic competition should make firms more productive

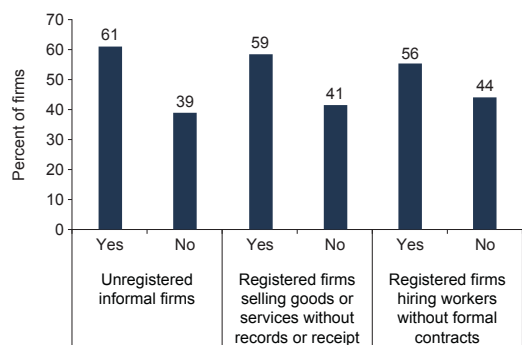
³ See Chapter 5 for further details on technical assistance programs that firms have accessed.

Figure 8.24: Characteristics of Firms that Face More than Five Competitors, 2014

Source: Author's estimates based on the PROTEqIN Survey, 2014.

and improve exports, intense domestic competition can restrict the size of firms, thus making them less likely to export. Firms in Trinidad and Tobago have identified competition as largely coming from local and foreign firms selling products via the Internet and via trade expos that allow foreign firms to display their products locally. Moreover, competition from informal firms is viewed as the most serious constraint by 7 percent of firms. Intense competition, including competition from informal firms, places downward pressure on retail prices, which can have an adverse effect on firms' profit margins (CBTT 2014). In the Trinidad and Tobago context—where most firms are small and medium-sized enterprises and where financing for firms' investments are largely sourced from retained earnings and profits (see Chapter 6)—one can see how the results of intense competition among small firms may restrict their ability to expand into foreign markets. The data show that most firms (74 percent) face more than five competitors. The characteristics of firms that face more competition are that they are small and medium-sized, mature, locally owned, and limited partnerships or sole proprietorships (Figures 8.24 and 8.25).

Informal competition, as mentioned above, can be harmful to

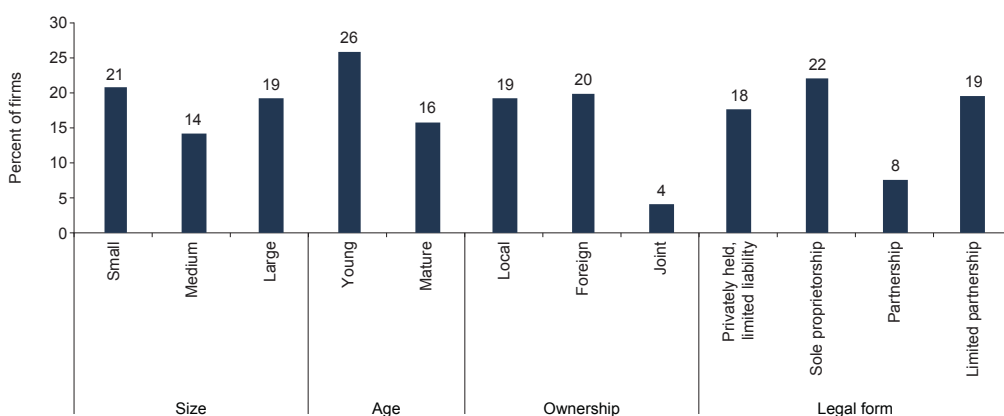
Figure 8.25: Firms that Compete against Informal Firms, 2014

Source: Author's estimates based on the PROTEqIN Survey, 2014.

formal firms. Most of the literature suggests that informal firms are unproductive and inefficient. Hence, the question typically asked is how the intensity of informal competition would affect the productivity of formal firms. Ali and Najman (2015) offer three explanations. The first relates to an onerous tax system and labour regulations that incentivise firms to enter the informal sector. As the size of the informal sector increases, government tax revenue is reduced, resulting in an increased tax burden on formal firms, thus making informal firms more competitive. Second is the creativity channel that relates to the managerial practices of informal firms. Informal firms are usually small sole proprietorships that have more relaxed communication strategies and flexible production processes. These characteristics enable them to be more responsive to demand and adjust their labour input and management to market shocks (Duchêne and Rusin 2002; Gülbitten and Taymaz 2000; Saviotti and Pyka 2008). The third explanation relates to the cost advantage that informal firms have over formal ones. According to Ali and Najman (2015), informal firms are less taxed, less regulated, and do not comply with competition law. As such, Schneider and Enste (2000) have argued that this cost advantage allows informal firms to operate more efficiently despite being less productive and inefficient.

Competition from informal firms is the fourth most serious obstacle affecting firm performance in Trinidad and Tobago, according to the 2014 PROTEqIN Survey. Although most firms (61 percent) report that they compete against informal firms, 71 percent identify the practices of informal firms as the most serious obstacle that affects performance. Figure 8.26 shows the distribution of firms that report informal competition as a constraint by firm-level characteristics. The share of small and medium-sized firms that have identified informal competition as the most serious obstacle to their performance

Figure 8.26: Characteristics of Firms that Report Informal Competition as Their Most Serious Obstacle

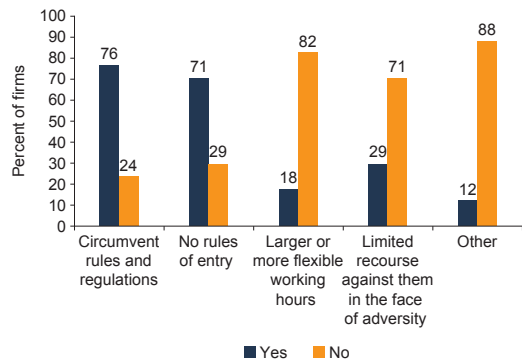


Source: Author's estimates based on the PROTEqIN Survey, 2014.

is 21 and 14 percent, respectively, compared with 19 percent for large firms. Regarding mature firms, 16 percent report informal competition as the greatest obstacle compared with 26 percent of young firms. More foreign and locally owned firms (20 percent and 19 percent) report informal competition as the most serious obstacle than do jointly owned firms (4 percent).

What are the practices of competitors in the informal sector that affect firms? As shown in Figure 8.27, the practices of informal firms that most hurt a formal firm's performance are when informal firms circumvent rules and regulations and when there are no rules of entry.

Figure 8.27: Practices of Competitors in the Informal Sector that Affect Firms



Source: Author's estimates based on the PROTEqIN Survey, 2014.

8.2.6 Innovation

The innovation literature suggests that innovation is one of the key determinants of a firm's export success.⁴ Several studies have shown that innovation, particularly product innovation, significantly increases a firm's probability to start exporting (Bocquet and Musso 2010), make investments in research and development (R&D) and worker training, and develop firm productivity (Aw, Roberts, and Xu 2009; Girma, Grg, and Hanley 2008; Yi, Wang, and Kafourous 2013). In assessing the determinants of export performance among manufacturing plants in Germany and the United Kingdom, Roper and Love (2002) found that product innovation is positively associated with the probability and propensity to export. Cassiman, Golovko, and Martínez-Ros (2010) examined the relationship between innovation, productivity, and exporting for a sample of Spanish firms and found strong evidence that product innovation, but not process innovation, induces small non-exporting firms to enter the export market (see also Becker and Egger 2013). In general, the literature suggests that small firms that invest

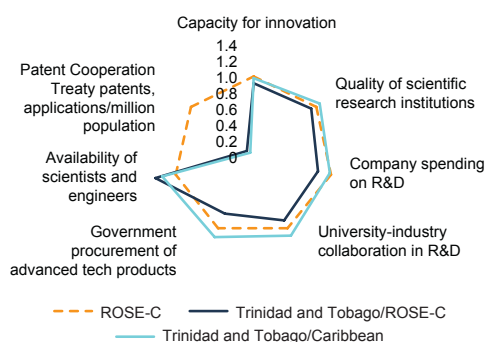
⁴ OECD (2005) identifies four different types of innovation: product, process, marketing, and organizational. Product innovation refers to the introduction of a product or service that is new or significantly improved. Process innovation is the implementation of a new or significantly improved production or delivery method. Marketing innovation is the implementation of a new marketing method involving significant changes in product design or packaging, product placement, product promotion, or pricing. Organizational innovation is the implementation of a new organizational method in the firm's business practices, workplace organization, or external relations.

in technological innovation and R&D and engage in export markets have higher performance indicators than firms with similar characteristics that do not innovate or export (Faustino and Matos 2015). In addition, small firms that undertake small innovations or do not have R&D departments are less likely to export (Faustino and Matos 2015).

8.3 What Does the Innovation Evidence Say for Trinidad and Tobago?

Research and development expenditure is low in Trinidad and Tobago, and the perception among businesspersons is very negative compared to the Caribbean and ROSE-C

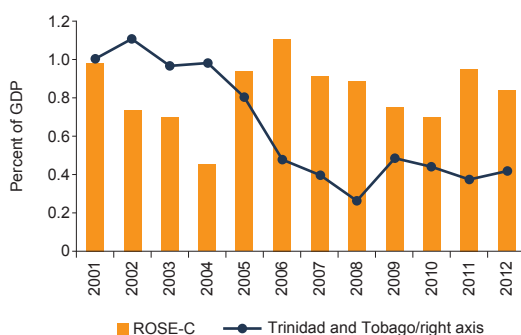
Figure 8.28: Businesspersons' Perceptions of Innovation Capacity



Source: World Economic Forum (2015).

Note: ROSE-C = rest of the small economies of the world that are commodity-dependent; R&D = research and development; values greater than unity indicate a better performance.

Figure 8.29: Expenditure on Research and Development (percent of GDP)



Source: Author's estimates based on the PROTEqIN Survey, 2014.

with respect to company spending on R&D, university-industry collaboration on R&D, government procurement of advanced technology products, patent applications, and the quality of scientific institutions (Figure 8.28).

This is also consistent with macro-level data, as Trinidad and Tobago's expenditure on R&D is 0.04 percent of GDP, significantly lower than the average for ROSE-C (1.2 percent) (Figure 8.29). At the firm level, expenditure on R&D averages 0.95 percent of sales for Trinidad and Tobago firms, compared with an average of 4.7 percent of sales for the rest of the Caribbean. Although 53 percent of firms report that they have planned some type of innovation activity for the next two years, the largest block of firms (37 percent) is focused on non-technological innovation (organizational and marketing innovation) (Figure 8.30).

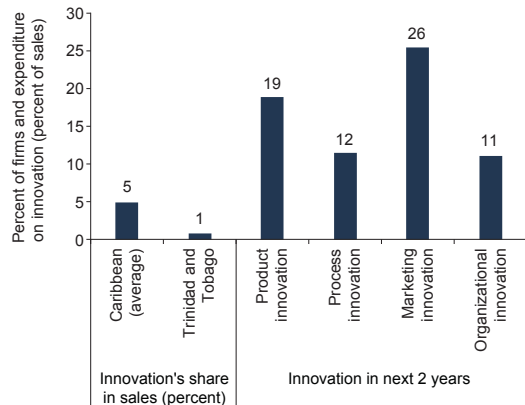
Firms that have a research department are more likely to be engaged in product innovation. The PROTEqIN Survey data show that only 5 percent of firms in Trinidad

and Tobago have a research department. This compares with an average of 11 percent of firms having a research department in the rest of the Caribbean (Figure 8.31). Of those firms in Trinidad and Tobago that have a research department, only 24 percent have introduced a new or improved product in the last two years, slightly higher than the Caribbean average of 22 percent.

Most firms have collaborated with a laboratory or research centre, university, or another company of the same sector (Figure 8.32). Firms also report that their financing for innovation activities came solely from their own resources, including loans.

Firm success with innovation originates mainly from adopting new machinery and the use of licenced technology, but the lack of flexibility among other companies for collaboration, protection against copycats, and direct public funding are presently affecting the innovation activities of firms. Most firms that introduced a new or improved product or service report that it was related to the purchase of new equipment (79 percent of firms), use of a licenced technology (60 percent), changes in the production process (55 percent), changes in organizational structure (45 percent), or packaging and presentation (25 percent) (Figure 8.33). The potential impact of innovation by firms is seen mostly in an improved ability

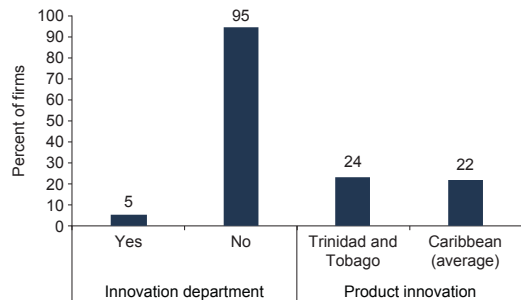
Figure 8.30: Expenditure on Innovation, 2014



Source: Author's estimates based on the PROTEqIN Survey, 2014.

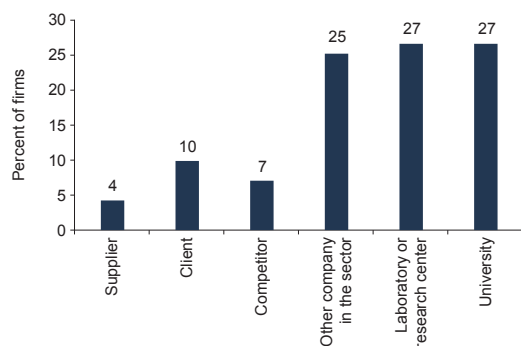
Note: See footnote 4 in the main text for an explanation of the four types of innovation.

Figure 8.31: Firms with a Research Department, 2014

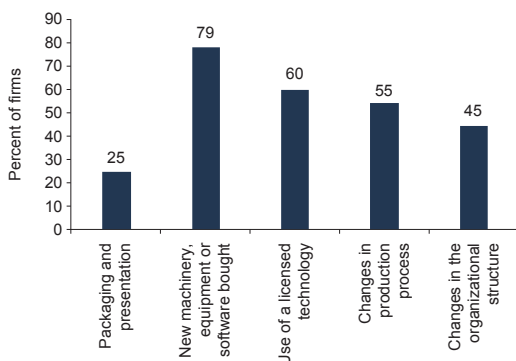


Source: Author's estimates based on the PROTEqIN Survey, 2014.

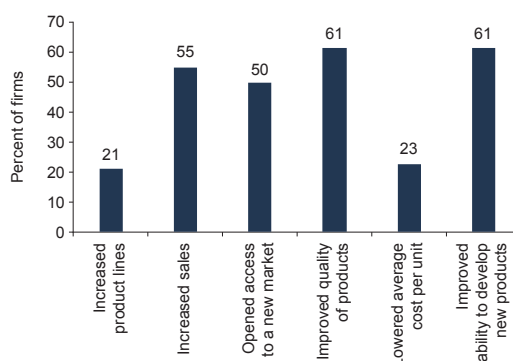
Figure 8.32: Category of Partner Involved in Innovation, 2014



Source: Author's estimates based on the PROTEqIN Survey, 2014.

Figure 8.33: Contributing Factors to Firm Success with Innovation, 2014

Source: Author's estimates based on the PROTEqIN Survey, 2014.

Figure 8.34: Effect of Innovation on Firm Performance, 2014

Source: Author's estimates based on the PROTEqIN Survey, 2014.

Table 8.3: Major Obstacles to Current Innovation Activities (percent of firms), 2014

	Percent of firms
Flexibility/openness of other companies of the sector for collaborative approaches	49
Protection against copycats	48
Level of available financial resources	44
Time to market	44
Flexibility/openness of laboratories/research centers for collaborative approaches	39
Qualification of employees	36
Compliance requirements to international standards	34
Level of information on new trends of the market	33
Technical uncertainties	32
Current organizational/managerial culture	25
Degree of self-confidence for innovation	23
Level of information on available technologies	18
Internal remuneration policy and incentive structure	12
Client flexibility/openness towards new goods or services	7
Level of public funding available or public incentive to support innovation:	
Direct public funding for innovation	47
Linkages with public universities/tertiary level institutions	29
Technical capacity in key institution responsible for innovation promotion	19
Investment/policy framework to foster innovation	15

Source: Author's estimates based on the PROTEqIN Survey, 2014.

to develop new products, improve the quality of products, increase sales, and open access to a new market (Figure 8.34). However, increasing product lines and lowering the average cost per unit, which is important for export growth, are the least successful innovations for most firms. The five major obstacles to current innovation activities are flexibility/openness of other companies to collaborative approaches (49 percent), protection against copycats (48 percent), direct public funding for innovation (47 percent), level of available financial resources (44 percent), and time to market (44 percent) (Table 8.3).

8.4 Conclusion

This chapter has examined the performance of the non-energy export sector in Trinidad and Tobago and the factors that constrain the entry of firms into export markets. The analysis found that non-energy exports are highly concentrated in a few products and markets. Performance metrics show that Trinidad and Tobago has lost comparative advantage in more non-energy products than it has gained. Most non-energy export products are also in stagnant sectors with a declining market share in dynamic export markets. Firm-level data suggest that only a small share of firms engage in exports, and their performance indicators are lower than non-exporters. Many factors could be influencing the export status and performance of firms. The literature has identified several, including firm characteristics, infrastructure, subsidies and government assistance, research and development, and customs and trade regulations.

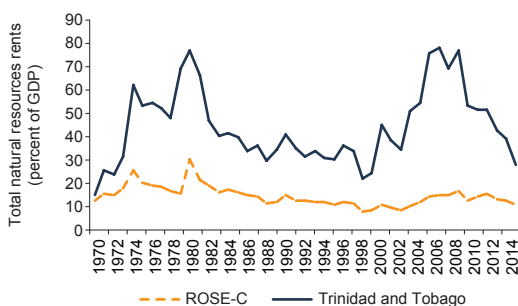
This report finds that improvements to the reliability of infrastructure are needed to support exporters in Trinidad and Tobago. Firms did not identify access to land or telecommunications as a major or severe constraint. However, on the reliability of electricity, firms reported losses from power outages, although the evidence shows that some firms are substituting away from grid electricity to mitigate this constraint. The indicators for customs and trade regulations also do not suggest a major constraint to exporters. Trinidad and Tobago has better trade facilitation indicators than other developing and developed regions. Only a small percentage of firms identify trade barriers as a serious constraint to exporting.

More effort is required to increase innovation and public support to exporters. Public support is provided to exporters, but the firm-level evidence suggests that most firms do not benefit from it and have great difficulty achieving export promotion targets. Innovation expenditure is also low, and this could weigh negatively on firms' productivity and export performance.

Is Government Good for Business?

Countries that are rich in natural resources, particularly developing countries, have the potential to be corrupt. This is because natural-resource-dependent countries are generally pre-disposed to rent seeking, especially when the quality of institutions is weak (Auty 2001; Gylfason 2001). “Rents” are usually defined as rewards in excess of effort and productivity that accrue to the owners of natural resources (such as the government). When economic agents engage in rent seeking, they distort good governance practices, engage in bribery and corruption, and transform potential entrepreneurs into rent seekers, thus lowering productivity and constraining sustainable economic growth (Dietz 2007; Mukum 2008; Tullock 1980). The state also becomes involved in rent seeking through its interaction with the private sector. If the business environment is unfavourable, for example, rent seeking can occur if the state administers legal restraints, regulations, subsidies, taxes, tariffs, or import quotas, or if it awards contracts through public procurement. For their part, private actors are incentivized to influence the decisions of public officials in their favour, usually at the expense of others (Oviedo 2012).

Hence, government policies, regulations, laws, and services are important elements of the business environment that can either promote or inhibit private sector growth. Inefficient public services and rigid laws and regulations can lead to constraints that affect firm performance. Some firms may engage in bureaucratic corruption and graft to overcome such constraints. The literature, however, does not provide a clear answer about the effects of corruption on firm performance. The ongoing debate on the consequences of corruption has two opposing views. One is the “greasing the wheels” hypothesis, which argues that corruption allows firms to overcome bureaucratic constraints and improve their performance, particularly in countries with weak institutions (De Vaal and Ebben 2011; Meón and Weill 2010). The other is the “sand in the wheels” hypothesis, which argues that corruption impedes growth because it entails rent seeking, misallocation of resources, increased transaction costs, and inefficient investment.

Figure 9.1: Total Natural Resource Rents

Source: World Bank, World Development Indicators, 2016.

Note: ROSE-C = rest of the small economies of the world that are commodity-dependent.

One may expect that the higher the “rents,” the greater the scope for rent seeking, especially in the presence of weak institutions. In the case of Trinidad and Tobago, opportunities for rent seeking may be high because, since 1974, its total natural resource rents have generally been much higher than the rest of the small economies of the world that are commodity-dependent (ROSE-C) (Figure 9.1). The country’s natural resource rents in 2014 were estimated at 17 percent of GDP. This

chapter considers the interaction between the government and private enterprises in Trinidad and Tobago, with a special emphasis on graft and unproductive rent seeking and its impact on the performance of firms.

9.1 Measuring Corruption

Corruption is usually analysed by indicators of perceptions, as objective data are generally scarce. The number of corruption perception measures available has grown significantly over the past decade and cover various dimensions of the issue. The most widely used include the Corruption Perceptions Index and the Bribe Payers’ Index produced by Transparency International; the World Bank’s Worldwide Governance Indicators; and a corruption index produced by the International Country Risk Guide, a private consulting company. These measures usually reflect the opinions of the general public and managers of firms regarding a country’s bureaucratic and corruption issues. There are also some area-specific tools, such as the Open Budget Index and the Central Bank Transparency Index that provide information about the transparency and independence of macroeconomic policy decisions.

The use of perception surveys for investigating the effects of corruption on growth and performance has produced mixed results. Some studies, using perception indicators, have found that corruption reduces economic growth and investment (Mauro 1995; Tanzi 1998). Other studies have found that corruption is positively related to growth, thus supporting the greasing the wheels hypothesis (Acemoglu and Verdier 1998).

Perception-based measures of corruption may be biased and are not without criticisms (Andersson and Heywood 2009; Hawken and Munck 2009; Heywood and Rose 2014). Olken (2009) noted that perceptions are biased either by the respondent’s

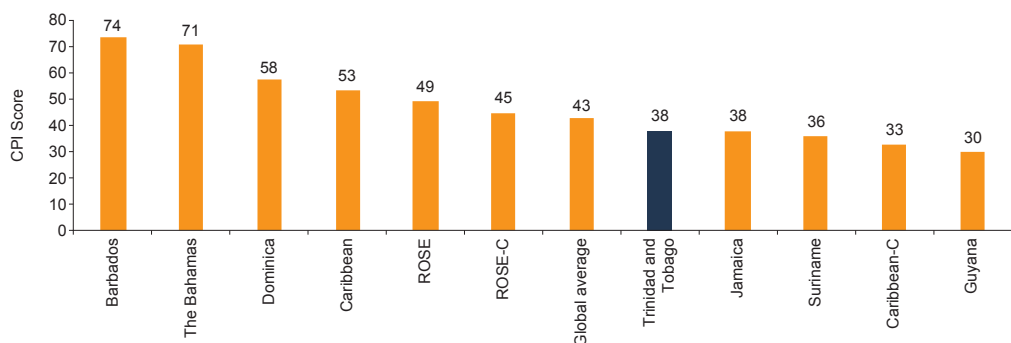
inability to detect some aspects of corruption or by the individual characteristics of respondents, such as one's level of education. One can potentially avoid such bias by using expert surveys, where responses are found to be highly correlated with actual data (Banerjee and Pande 2007). However, the researcher would have to identify the correct expert pool, and even then expert responses might be biased. For these reasons, researchers are moving to more direct measures of corruption such as surveys of bribe payers. This approach is considered to be more reliable since there is relatively little stigma associated with paying bribes (Svensson 2003).

9.2 What Does the Evidence Show?

Trinidad and Tobago ranks relatively low on the Corruption Perception Index, which covered 175 countries in 2014. The index measures the degree to which corruption is perceived by businesspersons and country analysts to exist among public officials and politicians. The score ranges between 100 (highly clean) and 0 (highly corrupt), so it is preferable to have a high score. Trinidad and Tobago's ranking on the Corruption Perception Index is low and dropped by one position from 39th in 2012 to 38th in 2014. Moreover, it is lower than the average for the world, ROSE, ROSE-C, and other Caribbean countries, excluding Guyana and Suriname (Figure 9.2).

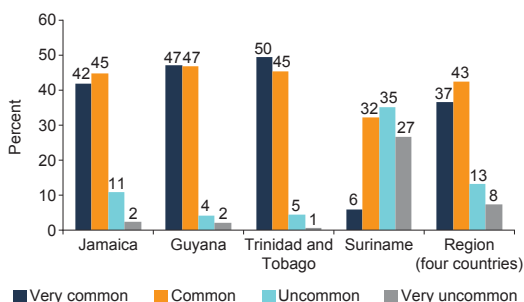
Citizens also see corruption as a problem. Figure 9.3 shows results from the Latin America Public Opinion Project (LAPOP) Survey, which provides information on households' perceptions of corruption. Specifically, this survey asks citizens to report if they had to pay a bribe to public officials when undertaking transactions and whether such bribes were justified. The survey found that 94 percent of respondents in Trinidad

Figure 9.2: Corruption Perception Index, 2014



Source: Transparency International, 2014.

Note: Scores on the index range between 100 (highly clean) and 0 (highly corrupt). CPI = Corruption Perception Index; Caribbean-C = commodity-dependent Caribbean economies; ROSE = rest of the small economies of the world; ROSE-C = rest of the small economies of the world that are commodity-dependent.

Figure 9.3: Citizens' Perception of Corruption in the Caribbean

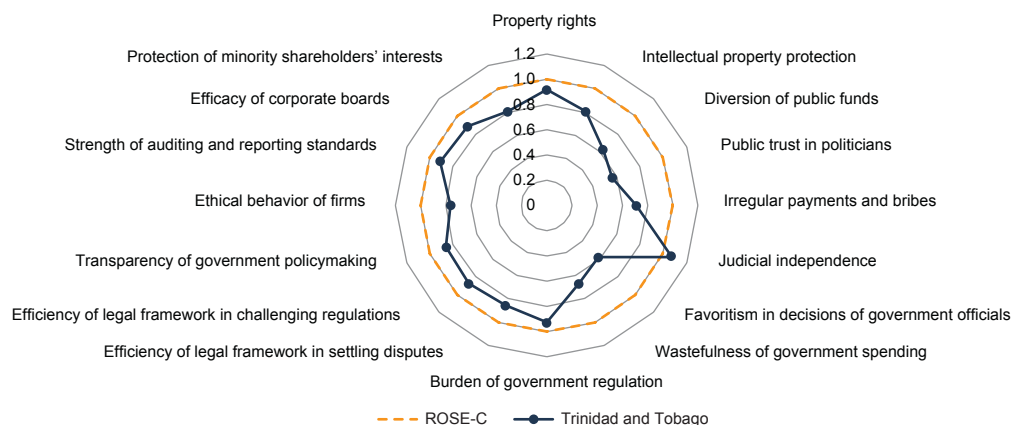
Source: Latin American Public Opinion Project Survey, 2012.

and Tobago perceive corruption as very common (49 percent) or common (45 percent). Similar responses were reported for other Caribbean countries included in the survey (Figure 9.3).

What drives corruption? Tanzi (1998, p. 3) noted that corruption is fuelled by factors that influence the demand for corrupt acts by the public and by the supply of corrupt acts by public officials. The most important demand factors in-

clude: (1) regulations and authorizations, (2) characteristics of tax systems, (3) certain spending decisions, and (4) provision of goods and services at below-market prices. The most important supply factors are: (1) bureaucracy; (2) the level of public sector wages; (3) penalty wages; (4) institutional controls; (5) the transparency of rules, laws, and processes; and (6) the examples set by leadership (see also Delavallade 2001).

Perception-based indicators show deficiencies in factors that can influence both the demand and supply of corrupt acts. With respect to institutional quality, the results show that Trinidad and Tobago performs well in only one area (judicial independence) compared to ROSE-C and other countries of the Caribbean (Figure 9.4). Public trust in politicians is extremely low and there is a perception of favouritism in decisions made

Figure 9.4: Businesspersons' Perceptions of the Government

Source: World Economic Forum (2015).

Note: ROSE-C = rest of the small economies of the world that are commodity-dependent; values greater than unity indicates better performance.

by government officials (usually perceived as favouring well-connected firms and individuals). Furthermore, the burden of government regulation, wastefulness of government spending, transparency of government policymaking, efficiency of the legal framework in challenging regulations, and the perception about the diversion of public funds are very negative, along with the occurrence of irregular payments and bribes. The judiciary represents the only set of institutions that perform relatively better when compared with the benchmark. The judiciary is widely perceived as being independent from the influence of members of government, citizens, and firms.

The World Bank's Ease of Doing Business indicators show a number of regulatory constraints affecting domestic small and medium-size enterprises (Figure 9.5). Overall, Trinidad and Tobago places relatively high on the Doing Business rankings (88th out of 189 economies), but the indicators point to several areas of regulatory inefficiency. ROSE-C performed better than Trinidad and Tobago in enforcing contracts, registering property, dealing with construction permits, trading across borders, and paying taxes. These deficiencies can negatively affect business operations and incentivise firms to engage in bureaucratic corruption.

Transparency of fiscal and monetary policymaking is also weak. The Open Budget Index rates countries on how open their budget books are to their citizens. The index placed Trinidad and Tobago 34th out of 100 countries. This score is lower than the global average and other regional comparators (Figure 9.6). Deficiencies were identified in key areas of the budgetary process, such as the production and publication of pre-budget statements, citizen's

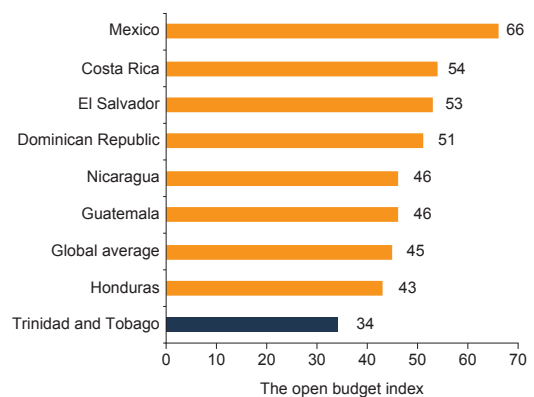
Figure 9.5: Ease of Doing Business Survey, 2016



Source: World Bank, Doing Business Project, 2016.

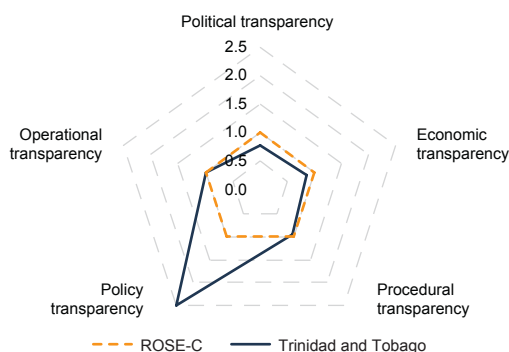
Note: ROSE-C = rest of the small economies of the world that are commodity-dependent.

Figure 9.6: The Open Budget Index, 2015



Source: International Budget Partnership Open Budget Initiative, 2015.

Figure 9.7: Quality of Institutions: The Central Bank Transparency Index, 2014



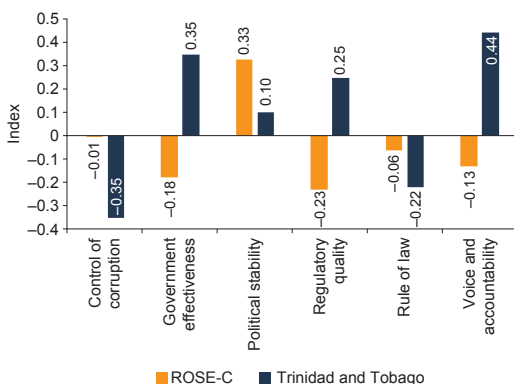
Source: Dincer and Eichengreen (2014).

Note: ROSE-C = rest of the small economies of the world that are commodity-dependent; values greater than unity indicates better performance.

budgets, in-year reports, mid-year reports, and year-end reports. Moreover, the monetary policy institution (the central bank) is ranked poorly according to the Dincer and Eichengreen (2014) transparency and independence indices (figure 9.7). Trinidad and Tobago ranks low in all of the categories—political, economic, procedural, policy, and operational transparency—considered by the transparency index, with the exception of policy transparency. However, some marginal improvements have been observed in political, policy, and economic

transparency since 2003. The four central bank independence indices show that Trinidad and Tobago is ranked very low: 77th out of 89 countries (Dincer and Eichengreen 2014). The rankings reflect the independence of the governor of the central bank, the independence of the bank in policy formulation, its objective or mandate, and the stringency of limits on its lending to the public sector.

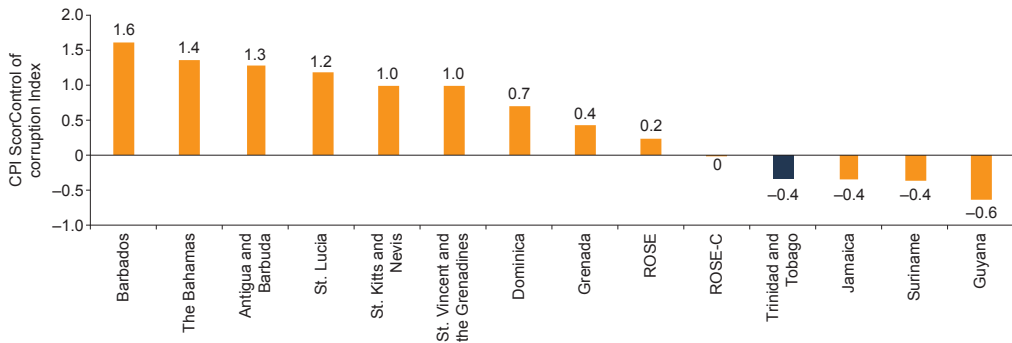
Figure 9.8: Kauffman, Kraay, and Mastruzzi Index: Control of Corruption and Five Other Indicators



Source: World Bank, World Development Indicators, 2016.

Note: The index ranges from approximately -2.5 (weak) to 2.5 (strong) for governance performance. ROSE = rest of the small economies of the world; ROSE-C = rest of the small economies of the world that are commodity-dependent.

The control of corruption in Trinidad and Tobago is weak. In addition to the measures of institutional quality and macroeconomic policy discussed above, the quality of governance is examined following Kaufmann, Kraay, and Mastruzzi (2005). The five indicators considered are: (1) voice and accountability (measures the extent to which citizens can choose their governments as well as other political rights and civil liberties, including freedom of the press); (2) political stability and absence of violence (indicates the likelihood of violent threats to or changes in government, including terrorism); (3) government effectiveness (measures the quality

Figure 9.9: Kauffman, Kraay, and Mastruzzi Index: Control of Corruption

Source: World Bank, World Development Indicators, 2016.

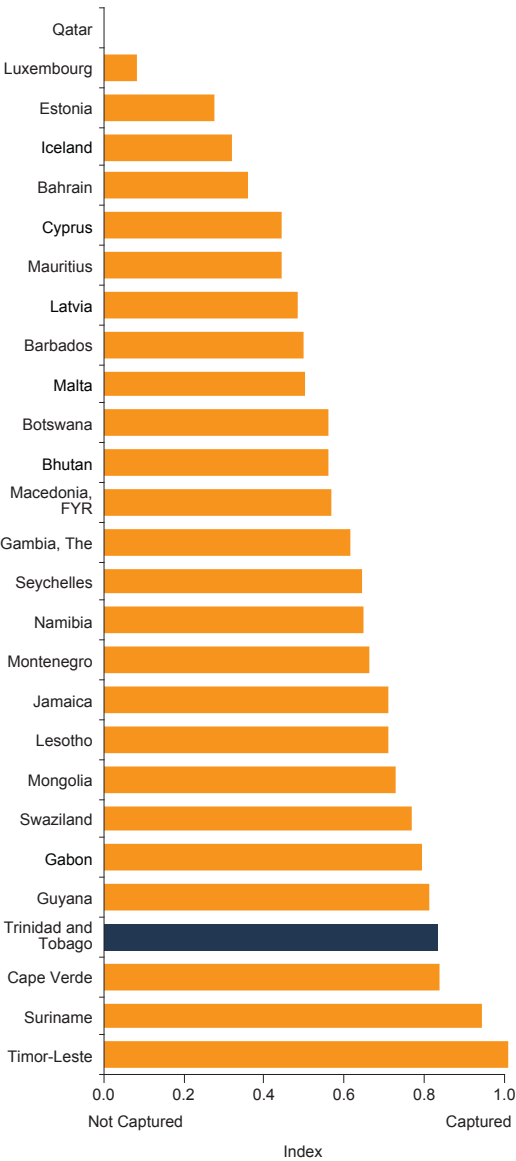
Note: The index ranges from approximately -2.5 (weak) to 2.5 (strong) for governance performance. ROSE = rest of the small economies of the world; ROSE-C = rest of the small economies of the world that are commodity-dependent.

of public service delivery and competence of the bureaucracy); (4) rule of law (assesses the quality of contract enforcement, the police, and the courts, as well as the likelihood of crime and violence); and (5) control of corruption (measures the exercise of public power for private gain, including petty and grand corruption and state capture). The indicators show that Trinidad and Tobago, when compared to ROSE-C, ranks relatively well in all the components except for the rule of law, control of corruption, and political stability (Figure 9.8). However, it is important to point out that Trinidad and Tobago's indicators showed a steady deterioration between 2005 and 2013 in the areas of corruption and the rule of law. Trinidad and Tobago also ranks lower than all its comparators except Guyana and Suriname in Figure 9.9. A State Capture Index suggests that Trinidad and Tobago is at the higher end of the spectrum (figure 9.10). State capture is defined as the efforts of firms to shape the laws, policies, and regulations of the state to their own advantage by providing illicit private gains to public officials. The State Capture Index ranges from zero (no capture) to unity (full capture) and is constructed by taking the average from three pillars of the World Economic Forum's Global Competitiveness Index: Pillar 1 (Institutions), Pillar 6 (Goods Market Efficiency), and Pillar 7 (Labour Market Efficiency). For each value, the minimum value (within small economies) is subtracted and then divided by the difference between the maximum and minimum values (Ruprah and Sierra 2016). The index value for Trinidad and Tobago shows that 80 percent of the state is captured.

9.3 Firm-level Evidence

This section turns to the firm-level analysis, where more objective data on corruption are available. The Productivity, Technology and Innovation (PROTEqIN) Survey provides information on the frequency of bribe requests for eight transactions that

Figure 9.10: State Capture Index



Source: Ruprah and Sierra (2016).

involve the government and that are crucial for businesses: construction permits, operating licenses, import licenses, water, telecommunications, electricity connections, tax inspections, and contracts. This scope of transactions allows us to determine a firm’s interaction with government officials, the level of bureaucracy that firms encounter, and the extent to which public officials request bribes to speed up transactions.

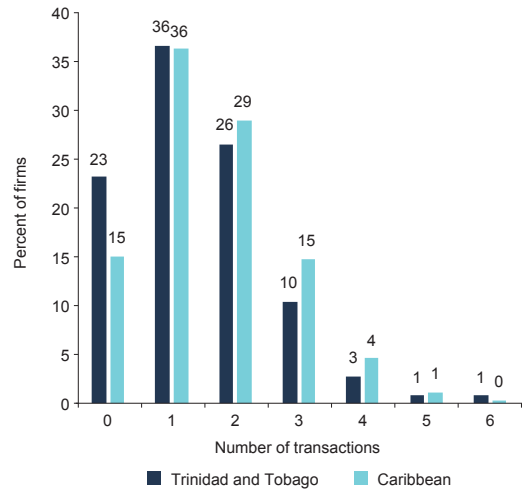
In Trinidad and Tobago, a high percentage of firms interact with the government, and the level of bureaucracy is relatively high: 77 percent of firms report transactions with the government. The largest share of firms (36 percent) report one transaction, 26 percent of firms report two transactions, and 10 percent report three transactions (Figure 9.11). The time spent by senior management dealing with government regulations is used as a proxy for bureaucracy. Figure 9.12 shows that senior management in Trinidad and Tobago firms spends 10 percent of its time dealing with government regulations, the second highest in the Caribbean after St. Kitts and Nevis.

Do illicit payments “grease” or “sand” the wheels in Trinidad and Tobago? To provide an answer to this

question, we examine data on how long firms have to wait for public services when a bribe is paid compared with when a bribe is not paid. If illicit payments grease the wheels, one would expect that the waiting time of bribe payers would be significantly less than that of non-bribe payers. Figure 9.13 shows the average time taken to get electricity, water, and telephone connections and an import license when firms pay or do not pay for

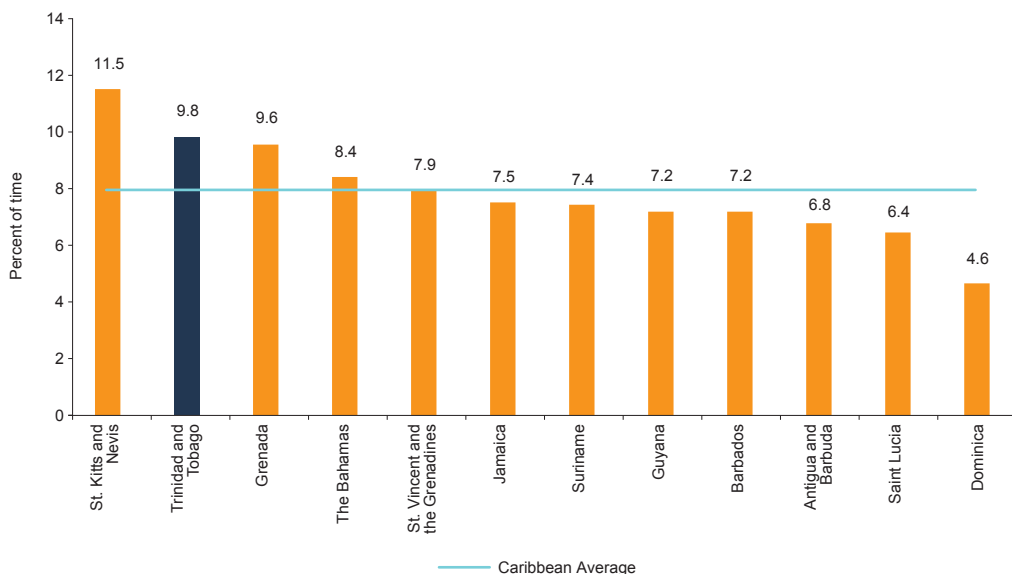
prompter service by public officials. For electricity, the average wait time is significantly higher for non-payers than bribe payers. Getting an electricity connection takes 35 percent less time with an illicit payment. For water connections, the results show that paying a bribe gets you a connection in 19 days compared with 23 days if no bribe is paid. Import licenses are received in nine days when payments are made, but firms that do not pay have to wait twice as long (18 days). Telephone connections take longer when a bribe is paid, which contradicts to our hypothesis. Lastly, most firms (90 percent) that secured or attempted to secure a government contract report that informal payments or gifts were not requested. However, in instances where informal payments were requested, the cost ranged from an average

Figure 9.11: Percentage of Firms with Transactions with the Government



Source: PROTEqIN Survey, 2014.

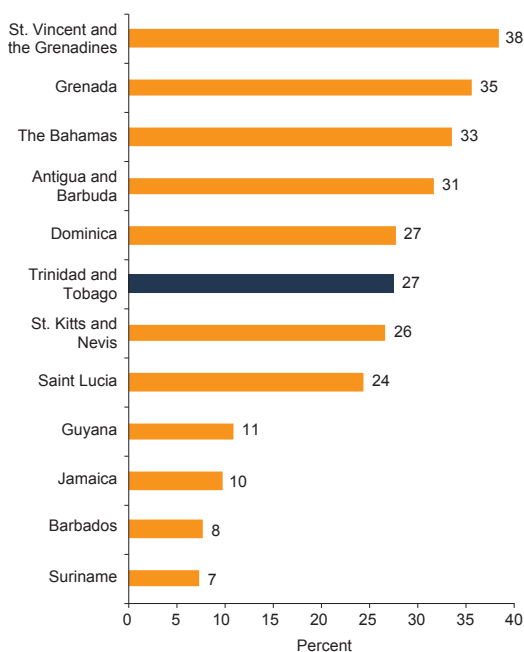
Figure 9.12: Percentage of Time Spent by Senior Management Dealing with Government Regulations in a Typical Week



Source: PROTEqIN Survey, 2014.

Figure 9.13: Time and Graft in Trinidad and Tobago, 2014

Source: PROTEqIN Survey, 2014.

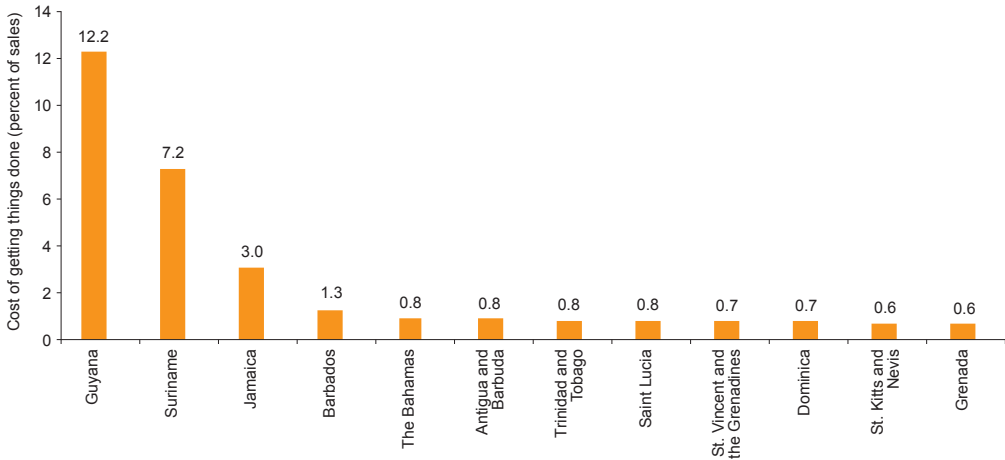
Figure 9.14: Graft Index in the Caribbean, 2014

Source: PROTEqIN Survey, 2014.

of 5 to 25 percent of the value of the contract. A graft index is constructed to reflect the probability that a firm will be asked for a bribe conditional on the firm undertaking one of the aforementioned transactions with the government. The index shows the proportion of instances in which firms were requested to pay bribes over the total number of solicitations for a public service (Ruprah and Sierra 2016). The graft index ranks Trinidad and Tobago above the Caribbean average (23 percent) but below six Caribbean countries (Figure 9.14).

The cost of “getting things done” is relatively lower in Trinidad and Tobago. The cost of corruption is measured by the amount that firms pay (as a percent of annual sales) in informal payments or gifts to public

officials to “get things done.” Firms in Trinidad and Tobago report that the average cost of getting things done represents 0.8 percent of annual sales compared to the

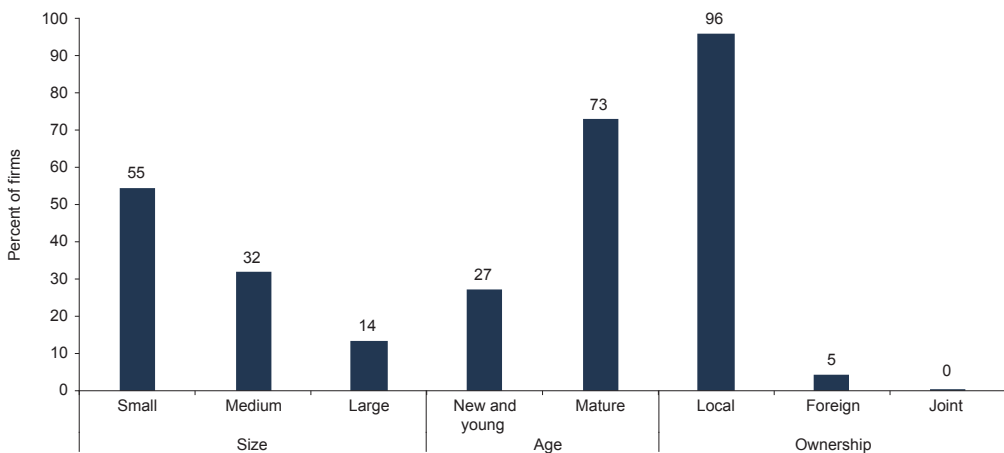
Figure 9.15: Cost of Getting Things Done, 2014

Source: PROTEqIN Survey, 2014.

Caribbean average of 2.6 percent (Figure 9.15). This is relatively low, but to put it into context, it is almost the same amount spent by firms on innovation (0.95 percent of sales). So although bribery appears to be greasing the wheels, it diverts resources from more productive use.

9.4 Who Pays Bribes?

The firms that report paying bribes to get things done are generally small and medium-sized enterprises that are locally owned and mature. Of the firms that report paying bribes, 73 percent are mature firms and 27 percent are young firms (Figure 9.16). The

Figure 9.16: Who Pays Bribes? 2014

Source: PROTEqIN Survey, 2014.

ownership status of bribe-paying firms is heavily skewed towards local ownership (95 percent). Moreover, 86 percent of bribe-paying firms are small (55 percent) and medium-sized enterprises (32 percent).

9.5 Conclusion

The findings in this chapter suggest that Trinidad and Tobago is less pro-business than its counterparts in the Caribbean and ROSE-C. The business environment, as set by government policies, regulations, laws, and the efficiency with which public services are delivered, is less conducive to business growth. The perception of corruption is high among various segments of society, including businesspersons, country analysts, and citizens. Moreover, the level of bureaucracy is relatively high. This creates an incentive for public officials to request bribes from firms to process transactions in a more timely manner. Finally, the chapter has found evidence that graft does indeed help to “grease the wheels” in Trinidad and Tobago.

Bringing It Together: Prioritizing Constraints and Identifying Policy Options

The previous chapters showed that the private sector in Trinidad and Tobago has to contend with an unfavourable macroeconomic environment, including a number of microeconomic constraints. The task for policymakers is to reinvigorate a declining private sector so it can play an enhanced role in increasing domestic investment, employment, and non-energy exports and revenues that are needed to boost overall economic growth in a sustainable way. To better understand this task, this chapter tackles three questions: What are the priority areas? What types of productive development policies should be adopted? What is the governance (public-private) framework and action plan required for policy intervention?

10.1 Priority Areas

This section prioritizes the constraints posed by microeconomic factors. It should be noted that this is not the first attempt to do so. The 2014 Compete Caribbean Private Sector Assessment of Trinidad and Tobago Report (PSAR) outlined priority areas and put forth an action plan. The key challenges for private sector development as identified by the PSAR include the registration of property; crime, theft, and disorder; access to finance; an inadequately trained workforce; labour regulation; infrastructure (water and transportation); gender; and the environment. These findings were based on data from the World Economic Forum and World Bank Enterprise Survey.

The approach used to rank constraints in this chapter is different than that used in the PSAR. Rather than providing an exhaustive list of constraints based on the perceptions of businesspersons or benchmarking exercises, this report estimates the effect of each constraint on firm performance (sales growth). The contribution of each factor to predicted sales growth is then used to rank constraints. This approach has the advantage of more objectively identifying obstacles and better guiding policymakers

to take a course of action that can potentially yield the “biggest bang for the development buck.”

Simple regressions of sales growth on firm characteristics, microeconomic constraints, and sector-specific dummy variables are employed to identify their importance to sales growth. Two regressions are estimated using separate datasets. The first is based on the 2010 World Bank Enterprise Survey. Although the Enterprise Survey was not the primary data source used here, it is the most comprehensive in terms of country coverage (though dated) that includes Trinidad and Tobago. The regression model includes all small economies. A small country is one with a population size of less than 3 million.¹ Hence, it allows us to estimate the difference between the performance of firms in Trinidad and Tobago and firms in small countries. The following model is estimated (see Annex 5 at the end of this volume for a description of variables):

$$\begin{aligned}
 \text{Sales growth} = & \beta_0 + \beta_1 \text{Age} + \beta_2 \text{Age}^2 + \beta_3 \text{Size} + \beta_4 \text{Size}^2 + \beta_5 \text{Foreign owned} \\
 & + \beta_6 \text{Joint owned} + \beta_7 \text{Privately held} + \beta_8 \text{Sole Proprietorship} \\
 & + \beta_9 \text{Partnership} + \beta_{10} \text{Limited Partnership} + \beta_{11} \text{Exporter} + \beta_{12} \text{Importer} \\
 & + \beta_{13} \text{Female Owned} + \beta_{14} \text{Female Manager} + \beta_{15} \text{Crime Constraint} \\
 & + \beta_{16} \text{Labor Constraint} + \beta_{17} \text{Finance Constraint} + \beta_{18} \text{New Product} \\
 & + \beta_{19} \text{New Process} + \beta_{20} \text{Gift} + \beta_{21} \text{Gift}^2 + \beta_{22} \text{Outages} \\
 & + \beta_{23} \text{Outages - generator} + \beta_{24} \text{Ease of Doing Business Index} \\
 & + \beta_{25} \text{Macroeconomic environment} + \beta_{26} \text{Corruption Perception Index} \\
 & + \beta_{27} \text{Trinidad and Tobago dummy} + \theta_s + \phi_c + \varepsilon
 \end{aligned}$$

The country-specific effect for Trinidad and Tobago is negative. A dummy variable is used to capture whether country-level characteristics are unfavourable for Trinidad and Tobago compared with firms in small countries. The variable, *Trinidad and Tobago dummy*, takes a value of 1 (one) for Trinidad and Tobago and 0 (zero) for small economies. It captures the country-specific fixed effect. If the coefficient $\beta_{27} < 0$ (> 0), then it means that characteristics at the country level have a negative (positive) relationship with the performance of firms. The regression results reported in Annex 1 at the end of this volume show that the coefficient of the *Trinidad and Tobago dummy* variable is negative (-0.12^{**}) and statistically significant at the 1 percent level, indicating that Trinidad and Tobago firms are already at a disadvantage, on average.

¹ Small economies include Antigua and Barbuda, Armenia, The Bahamas, Barbados, Belize, Bhutan, Botswana, Cape Verde, Dominica, Estonia, Fiji, FYR Macedonia, Gabon, Grenada, Guyana, Jamaica, Kosovo, Latvia, Lesotho, Lithuania, Mauritius, Mongolia, Montenegro, Samoa, Slovenia, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, Timor Leste, Tonga, Trinidad and Tobago, Uruguay, and Vanuatu.

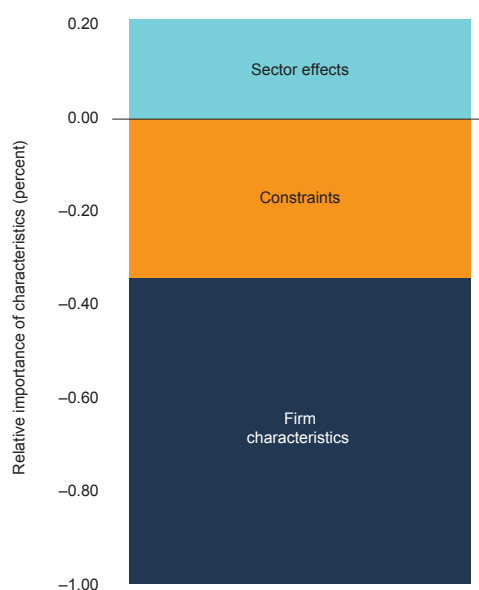
A second model specification is estimated using the 2014 Productivity, Technology and Innovation (PROTEqIN) Survey. This model is estimated for Trinidad and Tobago firms only and is a sub-sample of the 2010 Enterprise Survey. It includes explanatory variables that measure microeconomic constraints, firm characteristics, and sector-specific fixed effects. These results are used to quantify the contribution of microeconomic factors to predicted sales growth. The following model is estimated:

$$\begin{aligned}
 \text{Sales growth} = & \beta_0 + \beta_1 \text{Age} + \beta_2 \text{Age}^2 + \beta_3 \text{Size} + \beta_4 \text{Size}^2 + \beta_5 \text{Foreign owned} \\
 & + \beta_6 \text{Joint owned} + \beta_7 \text{Privately held} + \beta_8 \text{Sole Proprietorship} \\
 & + \beta_9 \text{Partnership} + \beta_{10} \text{Limited Partnership} + \beta_{11} \text{Exporter} + \beta_{12} \text{Importer} \\
 & + \beta_{13} \text{Female Owned} + \beta_{14} \text{Female Manager} + \beta_{15} \text{Crime Constraint} \\
 & + \beta_{16} \text{Labor Constraint} + \beta_{17} \text{Finance Constraint} + \beta_{18} \text{New Product} \\
 & + \beta_{19} \text{New Process} + \beta_{20} \text{Gift} + \beta_{21} \text{Gift}^2 + \beta_{22} \text{Infrastructure} \\
 & + \beta_{23} \text{Macroeconomic and political environment} + \theta_s + \varepsilon
 \end{aligned}$$

Firm characteristics contribute more negatively to performance than microeconomic constraints and sector-specific fixed effects. Firm characteristics such as age, size, legal form, gender, ownership, and trade (export or importer) are the largest negative contributors to sales growth. Microeconomic constraints—which include access to finance, crime, corruption, infrastructure, innovation, and labour—are the second largest negative contributor to sales growth. Sector-specific fixed effects show a positive contribution to sales growth (Figure 10.1).

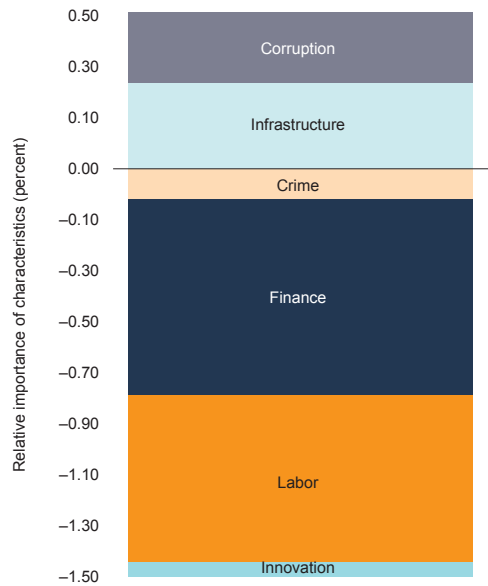
Access to finance, an inadequately educated workforce, and crime are the three largest negative contributors to sales growth, in that order (Figure 10.2). These constraints differ from the perceptions of businesspersons, but only in the order of priority. In terms of the contribution of each constraint to sales growth, the access to finance constraint contributes -82 percent, the labour constraint contributes -56 percent, and the crime constraint contributes -14 percent. Surprisingly, innovation contributes -0.04 percent,

Figure 10.1: Contribution to Predicted Sales Growth



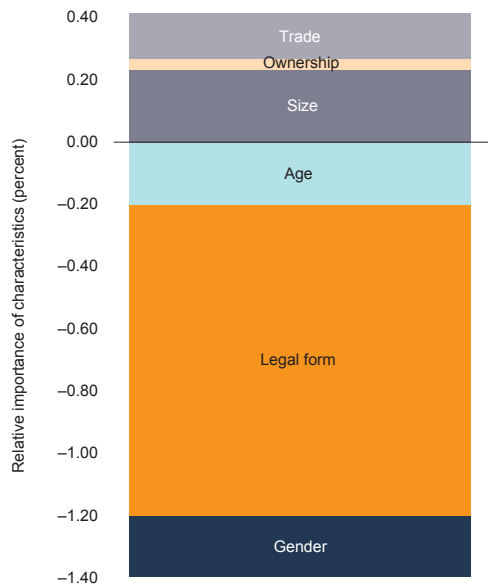
Source: Author's estimates based on regression results shown in Annex 7.

Figure 10.2: Relative Importance of Firm Constraints on Sales Growth



Source: Author’s estimates based on regression results shown in Annex 7.

Figure 10.3: Relative Importance of Firm Characteristics on Sales Growth



Source: Author’s estimates based on regression results shown in Annex 7.

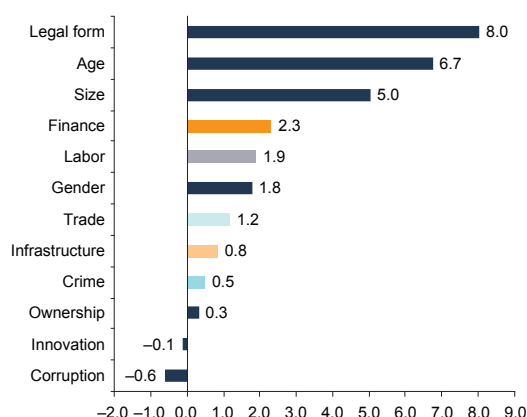
but when disaggregated further, process innovation is a positive while product innovation is a negative contributor. Although the literature suggests that innovation can positively affect a firm’s growth, this is not the case in Trinidad and Tobago. One possible explanation is that the relatively low level of innovation, as noted earlier in this report, is not sufficient given economy-wide and microeconomic constraints. Note though that this result is not to be interpreted as a causal effect, and in fact, if one regresses 2014 sales growth on expenditure on research and development in 2010, a positive effect is found, although it is statistically insignificant. Graft is a positive contributor to sales growth. This fits with the earlier hypothesis that graft helps to “grease the wheels.” Infrastructure, which includes transportation, electricity, and water, also contributes positively to sales growth, which may be a reflection of heavily subsidized electricity and transportation fuel.

The legal structure of firms, age of the firm, and the gender of managers and ownership negatively contribute to sales growth (Figure 10.3). Legal form is represented here as sole proprietorships, privately held companies, and partnerships. The coefficient of age is negative while age squared is positive, thus indicating that firms contribute more positively to sales growth as they get older, contrary to what is found

in the literature. Although the aggregate measure of gender is negative, female-managed firms positively contribute to predicted sales growth, while female-owned firms negatively contribute. Size of the firm, the firm being foreign-owned or jointly owned, and trade are positive contributors to performance. It should be noted, however, that the trade estimate in Figure 10.2 is the sum of importer and exporter dummy variables. The importer positively contributes but, surprisingly, the exporter negatively contributes to sales growth.

Another way to determine priorities is to estimate the returns to predicted sales growth if each constraint is reduced, *ceteris paribus*. Figure 10.4 shows the resulting increase in predicted sales growth when the mean of each constraint is reduced by 10 percent. The results show that an improvement in firms' characteristics would yield the highest return. With respect to constraints, improvements in the areas of finance, labour, and infrastructure would improve sales growth more than other factors.

Figure 10.4: Returns to Reducing Constraints on Predicted Sales Growth



Source: Author's estimates based on regression results shown in Annex 7.

Note: The figure shows the resulting increase in predicted sales growth when the mean of each constraint is reduced by 10 percent.

10.2 Productive Development Policies

Thus far, this report has highlighted the importance of both macroeconomic and microeconomic constraints. The question of which one to tackle is not as important as finding an appropriate policy mix of productive development policies along the spectrum of non-intervention to pre-selected firms or sectors. Thus, it is useful to establish a conceptual framework to evaluate potential productive development policy options. Available policy options can be evaluated using two dimensions: scope and types of interventions (Crespi, Fernandez-Arias, and Stein 2014). The scope defines policy interventions as horizontal (broad-based) or vertical (sector-specific), while the type of intervention relates to the mechanism of support, which can take the form of public or market support. These two dimensions give a 2x2 matrix that separates productive development policies into four quadrants (Table 10.1): (1) horizontal public inputs, (2) horizontal market interventions, (2) vertical public inputs, and (4) vertical market

Table 10.1: Typology of Productive Development Policies

	Horizontal Policies	Vertical Policies
Public inputs	Horizontal public inputs	Vertical public inputs
Market interventions	Horizontal market interventions	Vertical market interventions

Source: Crespi, Fernández-Arias, and Stein (2014).

interventions. Horizontal public inputs provide benefits to the broad economy and are provided by the public sector. Examples include measures to reduce the cost of doing business, and to improve the overall quality of education and infrastructure. Horizontal market interventions benefit certain activities but are not aimed at specific sectors. They usually include tax breaks, subsidies for job training, investment in machinery, and subsidized credit to firms (Crespi, Fernández-Arias, and Stein 2014). Vertical public inputs generate benefits for specific sectors. Examples include measures such as phyto-sanitary controls. These policies are selective, only favour some sectors, and are usually associated with strategies that “pick winners.” Vertical market interventions are sector-specific and aimed at changing the incentive structure to boost a certain vertical segment of the economy.

One reason why this classification matters is because rent seeking is an important aspect of the business environment. Rent-seeking problems, as argued by Crespi, Fernández-Arias, and Stein (2014), would be higher for vertical-market-based interventions and hence would be highest in the quadrant of vertical-market-based programs. These types of policies, because they generate concentrated benefits to a few, create strong and politically powerful constituencies that lobby for continuation of support and facilitate sustained lobbying.

The government of Trinidad and Tobago has historically played an active role in several economic sectors (i.e., vertical policies; see Mottley 2008 and Moya, Mohammed, and Sookram 2010). Its approach has generally been one of a provider or key decision-maker taking away this responsibility from the private sector (Moya, Mohammed, and Sookram 2010). More recent productive development policies have taken a modern approach that emphasises diversifying the economy and increasing the weight of the non-energy sector in GDP, employment, and exports. From the findings in this report, an attempt is made in Table 10.2 to fill out the productive development policy matrix for Trinidad and Tobago. Note, though, that in some areas policy measures may have already been proposed or are ongoing. A thorough assessment of those policies is beyond the scope of this book, as such, so the matrix should be taken as a general guide.²

² See Moya, Mohammed, and Sookram (2010) for a critical review of productive development policies in Trinidad and Tobago.

Table 10.2: Typology of Productive Development Policies for Trinidad and Tobago

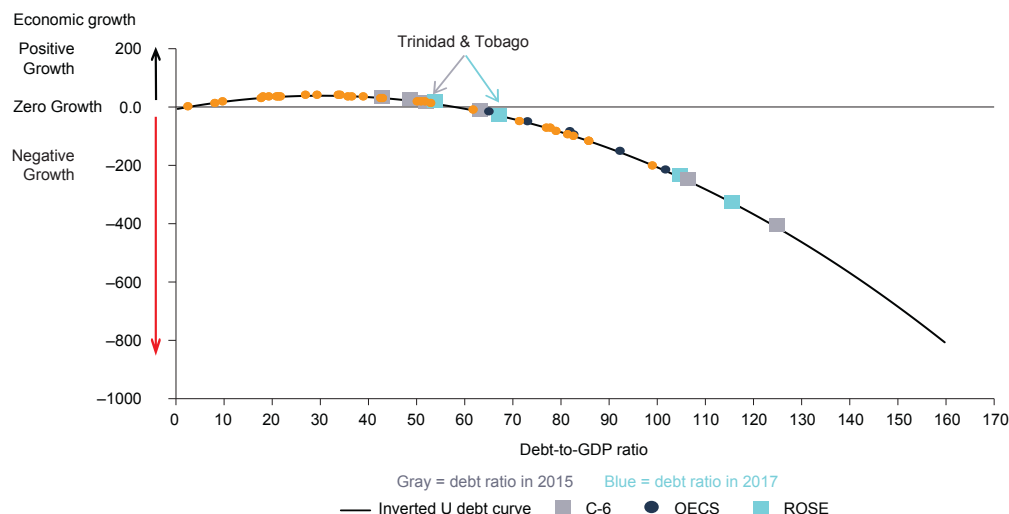
	Horizontal	Vertical
	<i>Broad and not aimed at specific sectors</i>	<i>Intended to benefit specific sectors</i>
Public	Macroeconomic stability	Infrastructure to enhance non-energy sector: roads, traffic congestion, ports, etc.
<i>State provision of goods or services to enhance performance of the private sector</i>	Overvalued exchange rate: Dutch disease	
	Improved business environment	
	Education and training/gender issues	
	Human capital development/emigration	
	Improved governance framework	
	Crime and security	
Market	Research and development incentives	Sectors targeted for development
<i>Subsidies, tax breaks or tariffs as incentives for the private sector</i>	Improved financing opportunities for firms	
	Incentives for firms to innovate	Vision 2030
	Incentives to attract foreign firms	
	Incentives for firms to invest in new technology	

Source: Prepared by the author based on Crespi, Fernández-Arias, and Stein (2014).

Most macroeconomic and microeconomic interventions are located in the horizontal public inputs quadrant, followed by the horizontal market inputs quadrant. The public inputs/horizontal quadrant shows the need for policies that can provide a favourable macroeconomic and business environment for firms in the non-energy sector. Issues relating to labour and training, human capital, migration, and crime and security are important constraints to the private sector. The market inputs/horizontal quadrant suggests measures to improve research and development, access to financing, innovation, and incentives to attract investments from foreign firms, as well as to encourage firms to invest in new technology. Vertical public inputs should primarily focus on continuously improving the quality and reliability of infrastructure to support the non-energy sector.

10.3 Financing Policy Reforms

Many of the programs outlined in Table 10.2 require public expenditure or tax incentives. This may not be feasible given the country's worsening macroeconomic outlook. Thus, an important question is how to finance the much-needed policy reforms. Financing policy reforms is always a challenge, particularly during periods of fiscal retrenchment. Trinidad and Tobago is facing a challenge of limited fiscal space mainly due to the commodity price shock that has significantly reduced government revenue. Widening fiscal deficits and a rising debt-to-GDP ratio, along with low economic growth, are

Figure 10.5: Debt-to-GDP Ratio and Economic Growth, 2015 (percent)

Source: Author's calculations; IMF (2013).

Note: C-6 = The Bahamas, Barbados, Guyana, Jamaica, Suriname, and Trinidad and Tobago; OECS = Organisation of Eastern Caribbean States; ROSE = rest of the small economies of the world.

expected to continue over the medium term. This can limit the government's ability to undertake substantial policy reform to improve the private sector's performance. The option of continued borrowing will most likely push the country to the "dark side" of the debt-growth threshold (Figure 10.5).³

One option available to governments with limited fiscal space is public-private partnerships (PPPs). We now turn to discussing the benefits and drawbacks of such partnerships, Trinidad and Tobago's experience with them, and what measures should be implemented to improve their implementation.

PPPs are essentially a procurement modality. They engage the private sector in the financing, design, construction, and management of public infrastructure and related services. Such partnerships can take the form of long-term contracts between public and private parties, private sector design, financing, construction, and management of public infrastructure.

PPPs offer the benefit of allocating risks (usually related to operations and cost management) between the public and private sectors. They can be attractive to both the government and the private sector. For the public sector, financing from the private

³ A debt benchmark is usually derived from the estimated relationship between debt and economic growth. This is shown in Figure 10.5. The inverted U-shape relation captures that for a debt-to-GDP ratio lower than 30 percent; any increase has a positive marginal and average effect on economic growth. However, above that level (the turning point on the inverted U curve), any further increase has a negative marginal effect, and above 60 percent, the impact (marginal and average) becomes negative.

sector can take pressure off government to increase borrowing and debt. In addition, better management of projects by the private sector can translate into better-quality and lower-cost services. For its part, the private sector benefits through new business opportunities in areas where it may have been previously excluded (IMF 2004).

However, PPPs can create large fiscal contingencies that can be very costly and opaque. As discussed in IDB (2016b), governments may attract private actors by offering minimum revenue or demand guarantees, creating a potentially large and opaque fiscal liability. The larger these liabilities, the more counter-productive are the use of PPPs as a tool to relieve the fiscal burden of governments. Thus, the design of PPPs is critical to achieving desired outcomes.

Trinidad and Tobago has experience with a diverse array of PPP investments. However, in many cases the government retained financing costs and risks that are traditionally transferred to private providers (see IDB 2016b for examples of cases). Moreover, given current weaknesses in institutional and technical capacity, along with the experience with PPPs, investment in training and skills development must be prioritized to advance the use of PPPs to achieve value for money via appropriate risk allocation, transfer of responsibility for project financing to private partners, linking of payments to quality/performance standards, and contract management and monitoring of value derived. Additional factors that require consideration include political support, investment in transaction advisory services, and technical capacity-building.

10.4 Governance Framework

Even if constraints are identified and financing to enact reforms is available, public-private dialogue is a critical element when defining and implementing policies and programs. Public-private dialogue provides a structured, participatory, and inclusive approach to policymaking (Bettcher, Herzberg, and Nadgrodkiewicz 2015). It is particularly directed at improving the governance framework and the business environment. Promoting dialogue has the advantage of improving the information flow with respect to proposed policies and programs. Public-private dialogue facilitates feedback and collaboration among various actors, which helps build legitimacy into the policy process and overcome obstacles to transparency when decisions are made on interventions to remedy market failures (Bettcher, Herzberg, and Nadgrodkiewicz 2015). Hence, public-private dialogue is essential to positive policy outcomes.

10.5 Conclusion

This chapter has looked at prioritizing policy constraints and identifying policy options. In general, firms in Trinidad and Tobago show an inferior level of performance

compared to firms in other small economies. Firm characteristics contribute more negatively to sales growth than microeconomic constraints and sector-specific effects.

The ranking of constraints in order of priorities identifies the top three as access to finance, an inadequately educated workforce, and crime. Simulation results also show that if constraints are reduced by 10 percent, the returns to performance largely concur with the priority areas identified. With respect to productive development policies, most policy interventions are located in the horizontal public inputs quadrant, followed by the horizontal market inputs quadrant. The public inputs/horizontal quadrant shows the need for policies that can provide a favourable macroeconomic and business environment for firms in the non-energy sector. Some of the main constraints include labour and training, human capital, and crime and security. The market inputs/horizontal quadrant suggests measures to improve research and development, access to financing, innovation, and incentives to attract investments from foreign firms, as well as to encourage firms to invest in new technology. Vertical public inputs should primarily focus on continuously improving the quality and reliability of infrastructure to support the non-energy sector.

Financing policy reforms is identified as a major challenge given the country's limited fiscal space and worsening macroeconomic environment. One option available to governments to circumvent this challenge is the use of public-private partnerships. However, given current weaknesses in institutional and technical capacity and the country's experience with PPPs, investment in training and skills development in Trinidad and Tobago must be prioritized to advance the use of PPPs to achieve value for money.

Conclusions and the Way Forward

This report has been organized around three main questions: How does the performance of firms in Trinidad and Tobago compare to that of firms in other Caribbean countries? What are the key factors that affect firm performance? What are the key issues that should be considered in a private sector development strategy?

11.1 Performance of the Non-energy Sector

The performance of Trinidad and Tobago's non-energy sector has declined considerably since the 2008 global financial crisis. Non-energy real GDP growth fell by an average of 5 percentage points for the seven years after the crisis compared to a similar period before the crisis. Underlying this under-performance has been declining labour productivity and low private investment. The data show that Trinidad and Tobago firms invest roughly one quarter (27 percent) of what firms in the rest of the small economies of the world that are commodity-dependent (ROSE-C) invest. Foreign direct investment (FDI) in the non-energy sector is also very small—constituting only one-tenth of total FDI—compared to the energy sector. In addition, labour productivity has sharply declined since the crisis, and some important non-energy sectors are contributing negatively to overall labour productivity.

If performance of firms is measured by sales growth and the level of total factor productivity (TFP), Trinidad and Tobago performs worse than the Caribbean average. The data suggest that average sales growth for Trinidad and Tobago firms is lower than that of four Caribbean countries and the regional average. TFP for Trinidad and Tobago firms is the second lowest in the Caribbean and is below the average of the rest of the Caribbean. Moreover, using sales growth as a performance metric, 82 percent of firms are classified as either stagnant or declining. This is a worrisome finding, particularly because the country's energy sector—its main driver of growth—has contracted significantly, and its outlook over the medium term is grim. At the same time,

the analysis shows that as it stands today, the private sector in Trinidad and Tobago is not up to the challenge of supporting economic growth, creating employment, contributing to government revenues in a significant way, or improving the economic welfare of the nation's citizenry.

11.2 Key Factors Affecting Firm Performance

To answer why performance is low, this report examined four sets of possible constraints: (1) macroeconomic constraints, (2) firm profile, (3) laments of businesspersons or microeconomic constraints, and (4) the business environment.

11.2.1 The Macroeconomic Environment

Changes to the exchange rate regime are required to provide a favourable macroeconomic environment for firms to expand. Countries such as Trinidad and Tobago that are highly dependent on hydrocarbon exports are inclined to have an overvalued exchange rate, which adversely affects private sector competitiveness, particularly its non-energy tradable component. This report finds that Trinidad and Tobago's real exchange rate is highly overvalued and has been appreciating since the early 2000s. In this type of environment, all firms have to contend with a more appreciated real exchange rate, which makes non-oil and non-gas tradables less competitive internationally. At the same time, producers for the domestic market face competition from relatively cheaper imports. Although firms in Trinidad and Tobago do benefit from energy subsidies, which can partly offset the effects of an overvalued exchange rate, there is empirical evidence of an inverse relationship between the real effective exchange rate and non-energy GDP, the non-energy trade balance, and the number of non-energy export products. If the private sector is to move out of its state of stagnation, state policies that can create a more conducive macroeconomic environment—such as a real devaluation of the exchange rate—are critical.

11.2.2 Profile of Firms

The profile of firms in Trinidad and Tobago is not encouraging. Firms are mostly small and medium-sized, old, locally owned, privately held, sole proprietorships, and less open to international trade. The empirical literature typically finds that small and young firms perform better than large and old firms, while foreign-owned firms show higher productivity levels than domestic firms. With these characteristics and an unfavourable macroeconomic environment, the poor performance of firms should be no surprise. In fact, firm characteristics are found to contribute more negatively to sales growth than other microeconomic factors.

11.2.3 Microeconomic Constraints

When businesspersons in Trinidad and Tobago were asked to rank the most serious obstacles to their performance, they cited, in order of importance: an inadequately educated workforce (41 percent), access to finance (20 percent), crime (13 percent), practices in the informal sector (7 percent), macroeconomic environment (4 percent), customs and trade regulations (4 percent), corruption (4 percent), cost of finance (4 percent), tax rates (1 percent), electricity (1 percent), and telecommunications (1 percent). Ruprah and Sierra (2016) found that these complaints are generally correlated with objective indicators and reflect a reality faced by private firms in the Caribbean.

11.2.3.1 *Is an Inadequately Educated Workforce a Problem?*

An inadequately educated workforce is a major obstacle to firm performance. Firms in Trinidad and Tobago identified an inadequately educated workforce as the most important obstacle that affects their performance. Country-level indicators from the World Economic Forum show that businesspersons' perceptions of the availability of scientists, quality of education, staff training, and capacity to attract and retain talent are not necessarily bad or significantly different from the Caribbean ROSE-C. However, the objective data do not support this view. Instead, they point to three problems that affect a firm's ability to access an adequately educated workforce. The first relates to a lower quality of education, the second to a skill/education mismatch across most professions, and the third to a high level of emigration (particularly persons with tertiary education). Although enrolment rates have increased at all levels (primary, secondary, and tertiary), the quality of education in Trinidad and Tobago is lower and in some cases has declined relative to the Caribbean and ROSE-C. There is also a skills gap across most job types and education levels. This skills gap is largely a reflection of educational outcomes that are not in sync with labour market demand. In addition, a worrying trend is emerging at the tertiary level, where it is becoming increasingly difficult for graduates to find jobs, and this is occurring predominantly in areas of study where the present stock of enrolment is relatively high. If this situation persists, the already-high levels of emigration of tertiary-educated persons will only increase.

11.2.3.2 *Is Financing a Problem?*

Improved financing conditions are necessary to support private sector growth. Businesspersons in Trinidad and Tobago identified access to finance and the cost of finance as the second and seventh most serious constraints, respectively. The country-level evidence from the World Economic Forum shows that businesspersons' perceptions of financial market development, regulation of securities and exchange, soundness of banks, ease of access to loans, financing through equity markets, availability of financial

services, and affordability of financial services are less favourable than in the Caribbean and ROSE-C. Objective data largely support findings of low financial development and lack of access to credit. Note, though, that the cost and availability of financing is favourable, as evidenced by relatively low lending interest rates, high domestic savings, and high liquidity in commercial banks. Firm-level data suggest that firms were denied credit because of incomplete applications, bad credit history, and high existing debt.

11.2.3.3 *Is Crime a Problem?*

Reducing the negative effects of crime on business operations can improve private sector performance. Businesspersons in Trinidad and Tobago identified crime as the third most serious constraint to firm performance. The country-level evidence shows that businesspersons' perceptions of crime as it relates to the reliability of police services, the effects of organized crime, and the business costs of crime and violence are very negative relative to the Caribbean and ROSE-C. Objective data support this finding. Although there has been a recent marginal decline in the incidence of violent crimes in Trinidad and Tobago, there has been a long-term increasing trend of violent crimes alongside a sharp drop in detection rates. It is believed that this has led to a general increase in the fear of crime, with adverse spillover effects on the business environment. Vandalism, theft, attempted robbery, and robbery are the four main types of crimes committed against firms. With the exception of theft, most firms do not report these crimes to the police. The reasons for not reporting include the small loss incurred, a possible increase in insurance costs, and the unavailability of police. The cost of crime to firms is estimated to be 4 percent of annual sales, including 2 percent spent on security and 2 percent in losses. The cost of crime for firms amounts to four times more than what they spend on innovation.

11.2.3.4 *Is Informal Competition a Problem?*

Practices of competitors in the informal sector are the fourth most serious obstacle affecting firm performance. However, only a small share of firms (7.1 percent) identified this as a constraint. The affected firms are generally small, young, and locally owned. The practices of informal firms that most hurt formal firm performance are informal firms circumventing rules and regulations and the lack of rules of entry.

11.2.3.5 *Is Customs and Trade Regulation a Problem?*

Customs and trade regulations are not major impediments to exporters. Customs and trade regulation is the sixth most serious problem affecting firms in Trinidad and Tobago, according to businesspersons. Country-level indicators from the World Economic Forum show that the perceptions of businesspersons about customs and trade

regulation are more favourable compared to the Caribbean and ROSE-C. This finding is supported by objective data, including firm-level data. In fact, Trinidad and Tobago performs better than other regions in terms of the main indicators of transaction costs/time to export (days), documents to export (number), and cost to export (U.S. dollar). However, exporters experience losses of up to 2 and 3 percent of the consignment value due to theft and breakage or spoilage. Also, the country performs relatively poorly in the cost of importing a container and the number of documents required to import.

11.2.3.6 *Is Infrastructure a Problem?*

The reliability of key infrastructure should be improved to support private sector performance. Although perceptions of businesspersons in Trinidad and Tobago about the quality of overall infrastructure are favourable relative to the Caribbean and ROSE-C, objective data suggest otherwise. The effect of infrastructure-related constraints on firms can occur either through cost or reliability of supply. In terms of reliability of supply, there is room for improvement. Electricity outages and Internet interruptions occur with relatively high frequency—five interruptions per month and an average duration of three hours per interruption. As a result, firms experience losses of up to 1.5 percent of annual sales due to electricity and water interruptions and 1 percent of annual sales due to Internet interruptions. On the other hand, the cost of electricity and transportation does not appear to be a major problem. Firms benefit from generous energy subsidies. Average retail electricity tariffs and fuel prices in Trinidad and Tobago are the lowest in the Caribbean. In fact, the share of fuel costs in total sales is almost 1.5 times lower than the Caribbean average. With respect to electricity costs, the difference is much larger. An average electricity cost for Caribbean firms is 3 times higher than Trinidad and Tobago firms.

11.2.3.7 *Is Innovation a Problem?*

Investments in innovation should be increased to support private sector growth. Country-level indicators from the World Economic Forum show that the perceptions of businesspersons are very negative in Trinidad and Tobago relative to the Caribbean and ROSE-C with respect to company spending on research and development (R&D), university-industry collaboration on R&D, government procurement of advanced technology products, patent applications, and the quality of scientific institutions. Objective data support this finding both at the firm and country levels. Trinidad and Tobago's expenditure on R&D (as a percent of GDP) is 30 percent lower than the average for ROSE-C. At the firm level, while 5 percent of firms in Trinidad and Tobago have a research department, only 24 percent of them have introduced a new or improved product in the last two years. A lack of flexibility of other companies to collaborate,

protection against copycats, and direct public funding were identified as the most important obstacles affecting firms' current innovation activities.

11.2.4 Business Environment

Firms face a rough business environment in Trinidad and Tobago. Government policies, regulations, laws, and public services are important elements of the business environment that can either promote or hinder private sector growth. Country-level indicators from the World Economic Forum show that the perceptions of businesspersons are very negative relative to the Caribbean and ROSE-C with respect to public trust in politicians, favouritism in decisions made by government officials, the burden of government regulation, wastefulness of government spending, transparency of government policymaking, efficiency of the legal framework in challenging regulations, diversion of public funds, and the occurrence of irregular payments and bribes. In addition, the World Bank's Ease of Doing Business indicators show a number of regulatory constraints affecting small and medium-sized enterprises. Objective data at the firm level are largely consistent with these perceptions. Firms in Trinidad and Tobago have to contend with a relatively higher level of bureaucracy—measured as the time spent by top management dealing with government regulations—than do firms in some other Caribbean countries. Moreover, public officials often request “gifts” from firms to speed up transactions, which adds to the cost of doing business. Although the cost of “getting things done” in Trinidad and Tobago is much lower than in other countries, firms that engage in “gift giving” tend to benefit from prompter services. This suggests that illicit payments help to “grease the wheels.” Note, though, that this does not imply that graft should be increased or encouraged, but rather that policies aimed at reducing bureaucracy should be pursued.

11.3 The Way Forward: Prioritizing Policy Intervention and Policy Options

To define the way forward, this report tackled three key questions: What are the priority areas? What types of productive development policies should be adopted? What is the governance (public-private) framework and action plan required for policy intervention?

11.3.1 Priority Areas

Priority areas are defined using two approaches. The first involves using regression analysis to estimate the contribution of each factor to predicted sales growth. The second is a simulation exercise whereby the change in predicted sales is estimated when the mean of each constraint is reduced by 10 percent. The results are summarized below.

The unfavourable profile of firms is found to be the largest negative contributor to predicted sales growth, followed by limited access to financing, labour constraints, and crime constraints. Although firms identified corruption and infrastructure-related factors as important constraints, those are positively related to predicted sales growth. The results from simulation exercises are largely consistent with these findings (see Chapter 10).

11.3.2 Productive Development Policies

These indicative results, along with the analysis in previous chapters, are used to map out a broader productive development policy strategy to revive a declining private sector (see Chapter 10). The findings show that most macroeconomic and micro-economic interventions are in the horizontal quadrants of public inputs and market reforms. The public inputs show the need for policies that can provide a favourable macroeconomic and business environment for firms in the non-energy sector. Moreover, issues relating to labour and training, human capital, and crime and security are important constraints that the government needs to address. The market reforms quadrant suggests the need for measures to improve research and development, access to financing, innovation, and incentives to attract investments from foreign firms and encourage firms to invest in new technology. Alongside these measures, focus should be placed on continuously improving the quality and reliability of infrastructure to support the non-energy sector.

11.3.3 Financing Reforms and Establishing the Governance Framework Required for Policy Intervention

A major challenge confronting the government is the financing of policy reforms in a time of fiscal retrenchment. Although borrowing is an option, Trinidad and Tobago runs the risk of pushing its debt-to-GDP ratio to the “dark side” of the debt-growth relationship. One option available in this environment is the use of public-private partnerships, which offer benefits in terms of allocating risks between the public and private sectors and taking pressure off government to increase borrowing and debt. However, the current weaknesses in institutional and technical capacity to properly execute such partnerships must be addressed in order to achieve value for money (see Chapter 10).

Setting up a governance framework that can facilitate a structured, participatory, and inclusive approach is critical to effective policymaking and implementation. Hence, the establishment of working groups among various public-private actors to facilitate feedback and collaboration can help build legitimacy into the policy process when decisions are made on interventions to remedy market failures.

Trinidad and Tobago has been here before. After the crash in oil prices in the 1980s, the country recorded persistent negative growth from 1983 to 1992. But through a

program of reforms during the 1980s and 1990s—including structural reforms—the economy recovered and transitioned into a period of relatively balanced growth. After the recent energy boom and bust, the economy is once again at a similar crossroads, and decisive action is required.



Annexes

Annex 1 Data

The Inter-American Development Bank (IDB), in collaboration with Compete Caribbean, launched a PROductivity, TEchnology and INnovation Survey (PROTEqIN) in 2014 in Barbados, Belize, Jamaica, Guyana, Suriname, Antigua and Barbuda, Dominica, Grenada, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, The Bahamas, and Trinidad and Tobago. This survey was used partly as a panel survey of the Caribbean Enterprise Survey (CES), which was conducted as part of Latin American and Caribbean Enterprise Survey (LACES).¹ Many new sections were added to cover issues of innovation, demand-side skills, crime, public program support needs, and perception of efficacy, to name a few. The PROTEqIN Survey targeted 1,680 respondents drawn from the recently completed LACES. It aimed to provide feedback from enterprises that participated in the previous round of surveys in 2011 and to capture additional information on firm performance; finance; gender of ownership and management; use of productive development programs; and issues related to management style, innovation, and crime.

Table A1.1 presents the final sample for PROTEqIN 2014 and LACES 2011. As mentioned earlier, the total sample for LACES 2011 was 2,421 firms, whereas for PROTEqIN 2014 it was 1,966. Among the PROTEqIN total, 1,890 were related to the LACES Survey and 76 were new respondents. The PROTEqIN Survey did not include 531 firms surveyed in LACES.

¹ The CES 2011 was carried out in 2010–2011 as part of LACES 2011. The initiative was a joint effort between the IDB, Compete Caribbean, and the World Bank. The instrument is a firm-level survey that is a representative sample of a country's private sector. The survey was stratified at the industry and firm levels.

Table A1.1: Final Sample for LACES 2011 and PROTEqIN 2014

Country	LACES 2011 Final Sample	PROTEqIN included in LACES Final Sample
Barbados	150	123
Belize	150	122
Guyana	165	70
Jamaica	376	242
Suriname	152	94
Antigua and Barbuda	151	131
Dominica	150	126
Grenada	153	129
St. Lucia	150	128
St. Kitts and Nevis	150	125
St. Vincent and the Grenadines	154	133
Trinidad and Tobago	370	340
The Bahamas	150	127
Total	2,421	1,890

Note: See the Technical Note on the survey prepared by Compete Caribbean, the IDB, UKaid, the Government of Canada, and the Caribbean Development Bank. Available at: <https://goo.gl/5p8wBv>.

LACES = Latin-American and Caribbean Enterprise Survey; PROTEqIN = Productivity, Technology and Innovation Survey.

Both datasets can be downloaded from the World Bank's Enterprise Survey website at <http://www.enterprisesurveys.org> and Compete Caribbean's PROTEqIN website at <http://competecaribbean.org/proteqin/>.

Annex 2 Distribution of Firms (percent)

		Size			Age			Ownership			Legal Status				
		Small	Medium	Large	New	Young	Mature	Local	Foreign	Joint	Public	Private	Sole Prop.	Partnership	Limited Partnership
Complete sample		41%	35%	24%	1%	23%	77%	87%	3%	10%	1%	44%	27%	8%	21%
	Age														
	New	1.4													
Ownership	Young	25.9	20.3	20.5											
	Mature	72.7	79.7	79.5											
	Local	91.4	83.1	86.4	50.0	85.5	88.1								
	Foreign	2.9	4.2	1.2		5.3	2.3								
	Joint	5.8	12.7	12.3	50.0	9.2	9.6								
Legal status	Publicly listed company			2.4			0.8	0.7							
	Privately held, limited liability	24.5	17.1	67.5	50.0	49.4	41.8	41.7	70.0	48.5					
	Sole proprietorship	46.0	7.1	4.8	50.0	28.6	26.4	30.5	20.0						
	Partnership	6.5	2.1	12.0		3.9	8.8	8.1		6.1					
	Limited partnership	23.0	8.5	13.3		18.2	22.2	19.0	10.0	45.5					
Sector	Other manufacturing	11.5	7.6	12.0		7.8	11.1	9.8	30.0	6.1		8.8	8.7	19.2	12.5
	Food	5.0	3.4	13.3		2.6	7.7	6.8		6.1		6.8	4.3	19.2	4.2
	Textiles														
	Garments	2.2	4.2			3.9	1.9	2.0		6.1		0.7	2.2	3.8	5.6
	Chemicals	2.2	5.9	6.0		0.0	5.7	4.7	10.0		50.0	6.8	1.1	3.8	2.8

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Distribution of Firms (percent) *(continued)*

	Size			Age			Ownership			Legal Status			
	Small	Medium	Large	New	Young	Mature	Local	Foreign	Joint	Public	Private	Sole Prop.	Partnership
Plastics and rubber	0.7	1.7	2.4		0.0	1.9	1.7				2.0	1.1	1.4
Non-metallic mineral products	1.4	0.8	3.6		1.3	1.9	1.0		9.1		1.4		4.2
Basic metals	2.9	2.5			1.3	2.3	2.0		3.0		0.7	2.2	2.8
Fabricated metal products	2.9	4.2	2.4		5.2	2.7	3.1	20.0			2.7	5.4	2.8
Machinery and equipment	0.7	0.8	1.2			1.1	1.0					1.1	1.4
Electronics	0.7	0.8	2.4		1.3	1.1	1.0		3.0		0.7		4.2
Construction	7.2	5.9	10.8		15.6	5.4	7.8	10.0	3.0		10.8	5.4	6.9
Motor vehicle services	7.2	1.7	2.4	50.0	3.9	3.8	4.4		3.0		4.7	4.3	4.2
Wholesale	5.8	9.3	8.4		9.1	7.3	8.5		3.0		11.5	3.3	6.9
Retail	34.5	36.4	19.3	50.0	32.5	31.0	32.9		30.3		25.0	48.9	30.6
Hotels and restaurants	6.5	6.8	10.8		7.8	7.7	6.4	20.0	15.2	50.0	7.4	4.3	5.6
Transportation	7.2	6.8	3.6		6.5	6.1	6.1	10.0	6.1		8.1	7.6	2.8
Information technology	1.4	0.8	1.2		1.3	1.1	0.7		6.1		2.0		1.4

Source: PROTEqIN (2014).

Annex 3 Trade Competitive Analysis of Nations (TradeCAN) Methodology

The basic TradeCAN variables that can be used to classify the export competitiveness of commodities are:

1. Market share: M_{ij} / M_i
2. Percentage of exports: M_{ij} / M_j
3. Specialization:

$$\frac{M_{ij}}{M_i} \bigg/ \frac{M_j}{M}$$

where M refers to the value of total imports, i is a commodity, j is the exporter country, M_j refers to imports from exporter country j , M_i refers to imports of commodity i , and M_{ij} refers to imports of commodity i originating from the exporting country j .

The TradeCAN classification is dependent on which variable is measured on the vertical axis. In the case where market share is used, the following criteria must be satisfied for the various classifications:

Rising stars. A rising star refers to an export commodity that gains market share in a dynamic commodity market, that is, where the share of world demand has increased from a base year ($()^{by}$) to a final year ($()^{fy}$) in relation to other commodities. It is measured as follows:

$$\frac{M_i^{fy}}{M^{fy}} \bigg/ \frac{M_i^{by}}{M^{by}} \text{ and } \frac{M_{ij}^{fy}}{M_i^{fy}} \bigg/ \frac{M_{ij}^{by}}{M_i^{by}}.$$

Declining stars. A declining star refers to an export commodity that gains market share in a stagnant commodity market. It is measured as follows:

$$\frac{M_i^{fy}}{M^{fy}} \bigg/ \frac{M_i^{by}}{M^{by}} \text{ and } \frac{M_{ij}^{fy}}{M_i^{fy}} \bigg/ \frac{M_{ij}^{by}}{M_i^{by}}.$$

Missed opportunities. A missed opportunity refers to an export commodity that loses market share in a dynamic commodity market. It is measured as follows:

$$\frac{M_i^{fy}}{M^{fy}} \bigg/ \frac{M_i^{by}}{M^{by}} \text{ and } \frac{M_{ij}^{fy}}{M_i^{fy}} \bigg/ \frac{M_{ij}^{by}}{M_i^{by}}.$$

Retreats. A retreat refers to an export commodity that loses market share in a stagnant commodity market. It is measured as follows:

$$\frac{M_i^{fy}}{M^{fy}} \bigg/ \frac{M_i^{by}}{M^{by}} \text{ and } \frac{M_{ij}^{fy}}{M_i^{fy}} \bigg/ \frac{M_{ij}^{by}}{M_i^{by}}.$$

The same principle applies for the other variables in the competitiveness matrix (ECLAC (1999). This information can also be summarized into a consolidated matrix, as is done in Table A3.1.

Table A3.1: Consolidated Competitiveness Matrix

	Stagnant Sectors	Dynamic Sectors
Market Share Gain	Declining star	Rising star
Market Share Loss	Retreats	Missed opportunities

Annex 4 TradeCAN Competitiveness Matrix

SITC 3 digit	Description	Category	SITC 3 digit	Description	Category
11	Meat, fresh, chilled or frozen	Rising star	25	Eggs	Missed opportunities
24	Cheese and curd	Rising star	42	Rice	Missed opportunities
41	Wheat, including spelt and meslin	Rising star	45	Cereals, unmilled, excluding wheat, rice	Missed opportunities
44	Maize or corn unmilled	Rising star	46	Meal and flour of wheat	Missed opportunities
47	Meal and flour of cereals, except wheat	Rising star	48	Cereal preps and preps of flour	Missed opportunities
282	Iron and steel scrap	Rising star	51	Fruit, fresh, and nuts	Missed opportunities
283	Ores and concentrates of non ferrous metals	Rising star	52	Dried fruit, including artificially	Missed opportunities
284	Non ferrous metal scrap	Rising star	53	Fruit, preserved and fruit preparation	Missed opportunities
285	Silver and platinum ores	Rising star	54	Vegetables, roots & tubers, fresh	Missed opportunities
671	Pig iron, spiegeleisen, sponge iron	Rising star	61	Sugar and honey	Missed opportunities
678	Tubes, pipes and fittings of iron ores	Rising star	71	Coffee	Missed opportunities
685	Lead	Rising star	72	Cocoa	Missed opportunities
687	Tin	Rising star	73	Chocolate and other food preparations	Missed opportunities
718	Machines for special industries	Rising star	75	Spices	Missed opportunities
723	Equipment for distributing electricity	Rising star	81	Feed. Stuff for animals	Missed opportunities
1	Live animals	Retreats	91	Margarine and shortening	Missed opportunities
12	Meat, dried, salted, or smoked	Retreats	99	Food preparations, n.e.s.	Missed opportunities
31	Fish, fresh and simply preserved	Retreats	111	Non alcoholic beverages, n.e.s.	Missed opportunities
32	Fish, in airtight containers, n.e.s	Retreats	221	Oil seeds, oil nuts and oil kernels	Missed opportunities
43	Barley, unmilled	Retreats	231	Crude rubber, including synthetic	Missed opportunities
55	Vegetables, roots and tubers	Retreats	267	Waste materials from textile fabric	Missed opportunities

(continued on next page)

TradeCAN Competitiveness Matrix *(continued)*

SITC 3 digit	Description	Category	SITC 3 digit	Description	Category
62	Sugar confectionery, sugar preps.	Retreats	274	Sulphur and unroasted iron pyrites	Missed opportunities
112	Alcoholic beverages	Retreats	281	Iron ore & concentrates	Missed opportunities
242	Wood in the rough or roughly square	Retreats	411	Animal oils and fats	Missed opportunities
243	Wood, shaped or simply worked	Retreats	421	Fixed vegetable oils, soft	Missed opportunities
263	Cotton	Retreats	422	Other fixed vegetable oils	Missed opportunities
265	Vegetable fibres, except cotton	Retreats	431	Anim./veg. Oils & fats, processed	Missed opportunities
266	Synthetic and regenerated artificia	Retreats	621	Materials of rubber	Missed opportunities
271	Fertilizers, crude	Retreats	629	Articles of rubber, n.e.s.	Missed opportunities
291	Crude animal materials, n.e.s.	Retreats	656	Made up articles, wholly or chiefly	Missed opportunities
292	Crude vegetable materials, n.e.s.	Retreats	663	Mineral manufactures, n.e.s.	Missed opportunities
612	Manuf. of leather or of artif.	Retreats	667	Pearls and precious and semi precious	Missed opportunities
632	Wood manufactures, n.e.s.	Retreats	673	Iron and steel bars, rods, angles	Missed opportunities
633	Cork manufactures	Retreats	676	Rails & railway track constr. material	Missed opportunities
642	Articles of paper, pulp, paperboard	Retreats	679	Iron steel castings forgings unwork	Missed opportunities
651	Textile yarn and thread	Retreats	682	Copper	Missed opportunities
652	Cotton fabrics, woven	Retreats	691	Finished structural parts	Missed opportunities
653	Text fabrics woven	Retreats	692	Metal containers for storage	Missed opportunities
654	Tulle, lace, embroidery, ribbons	Retreats	693	Wire products ex electric & fenc	Missed opportunities
655	Special textile fabrics and related	Retreats	694	Nails, screws, nuts, bolts, rivets	Missed opportunities
657	Floor coverings, tapestries, etc.	Retreats	698	Manufactures of metal, n.e.s.	Missed opportunities
661	Lime, cement and fabr. bldg.material	Retreats	712	Agricultural machinery and implement	Missed opportunities

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TradeCAN Competitiveness Matrix *(continued)*

SITC 3 digit	Description	Category	SITC 3 digit	Description	Category
662	Clay and refractory construction	Retreats	719	Machinery and appliances	Missed opportunities
664	Glass	Retreats	724	Telecommunications apparatus	Missed opportunities
665	Glassware	Retreats	725	Domestic electrical equipment	Missed opportunities
666	Pottery	Retreats	726	Elec. apparatus for medic.purposes	Missed opportunities
674	Universals, plates and sheets	Retreats	731	Railway vehicles	Missed opportunities
677	Iron and steel wire, excluding wire	Retreats	734	Aircraft	Missed opportunities
686	Zinc	Retreats	735	Ships and boats	Missed opportunities
689	Miscell.non ferrous base metals	Retreats	812	Sanitary, plumbing, heating & light	Missed opportunities
695	Tools for use in the hand	Retreats	831	Travel goods, handbags and similar	Missed opportunities
696	Cutlery	Retreats	893	Articles of artificial plastic mate	Missed opportunities
697	Household equipment of base metals	Retreats	897	Jewellery and gold/silver smiths wa	Missed opportunities
711	Power generating machinery, other t	Retreats	899	Manufactured articles	Missed opportunities
714	Office machines	Retreats	941	Animals, n.e.s. incl.zoo animals	Missed opportunities
717	Textile and leather machinery	Retreats	74	Tea and mate	Declining star
722	Electric power machinery and switch	Retreats	122	Tobacco manufactures	Declining star
729	Other electrical machinery and appa	Retreats	211	Hides & skins, exc.fur skins undres	Declining star
732	Road motor vehicles	Retreats	251	Pulp & waste paper	Declining star
733	Road vehicles other than motor vehicle	Retreats	262	Wool and other animal hair	Declining star
821	Furniture	Retreats	273	Stone, sand and gravel	Declining star
841	Clothing except fur clothing	Retreats	275	Natural abrasives incl. industrial	Declining star
851	Footwear	Retreats	276	Other crude minerals	Declining star

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TradeCAN Competitiveness Matrix *(continued)*

SITC 3 digit	Description	Category	SITC 3 digit	Description	Category
862	Photographic and cinematographic	Retreats	611	Leather	Declining star
864	Watches and clocks	Retreats	631	Veneers, plywood boards	Declining star
891	Musical instruments, sound recorder	Retreats	641	Paper and paperboard	Declining star
892	Printed matter	Retreats	672	Ingots & other primary forms	Declining star
894	Perambulators ,toys, games, and sport	Retreats	681	Silver and platinum group metals	Declining star
895	Office and stationery supplies, n.e.s.	Retreats	683	Nickel	Declining star
951	Firearms of war and ammunition	Retreats	684	Aluminium	Declining star
13	Meat in airtight containers n.e.s	Missed opportunities	715	Metalworking machinery	Declining star
22	Milk and cream	Missed opportunities	861	Scientific, medical, optical, meas.	Declining star
23	Butter	Missed opportunities	863	Developed cinematographic film	Declining star
			896	Works of art, collectors pieces	Declining star
			961	Coin other than gold	Declining star

Source: Author's estimates based on data from the World Integrated Trade Solution database.

Note: SITC = Standard International Trade Classification; TradeCAN = Trade Competitive Analysis of Nations; n.e.s.= not elsewhere specified.

Annex 5 Description of Variables

- **Sales growth.** Firm-level outcome (sales growth, purchasing power parity adjusted).
- **Age.** Firm age in years.
- **Age².** Firm age in years squared.
- **Size.** Number of employees.
- **Size².** Number of employees squared.
- **Foreign owned.** Dummy equal to one if firm is predominately foreign-owned.
- **Joint owned.** Dummy equal to one if firm is owned jointly by local and foreign entities.
- **Privately held.** Dummy equal to one if firm is a private limited liability company.
- **Sole proprietorship.** Dummy equal to one if firm is a sole proprietorship.
- **Partnerships.** Dummy equal to one if firm is a partnership.
- **Limited partnerships.** Dummy equal to one if firm is a limited partnership.
- **Female owned.** Dummy equal to one if firm is owned by a female.
- **Female manager.** Dummy equal to one if firm is managed by a female.
- **Exporter.** Dummy equal to one if firm is an exporter.
- **Importer.** Dummy equal to one if firm is an importer.
- **Gift.** Graft index constructed in Chapter 9.
- **Gift².** Graft index squared.
- **Outages.** Dummy equal to one if firm reported outages.
- **Outages-generator.** Interaction term that accounts for firms that experienced an outage and owned or shared a generator.
- **New product.** Dummy equal to one if firm introduced significantly improved products.
- **New process.** Dummy equal to one if firm introduced a significantly improved process for producing or supplying products.
- **Crime constraint.** Dummy equal to one if firm reports losses (percent of sales) due to crime.
- **Labour constraint.** Dummy equal to one if firm identified labour as a major problem and provided training to its employees.
- **Credit constraint.** Dummy equal to one if firm's application for credit was rejected.
- **Trinidad and Tobago dummy.** Dummy equal to one for Trinidad and Tobago firms.
- **Macroeconomic environment.** Dummy equal to one for firms in countries with a macroeconomic environment index value less than or equal to 3. The macroeconomic environment index ranges from 1-7 (best).
- **Ease of Doing Business Index.** This index is normalized to vary between 0 (more business-friendly regulations) and 1 (less business-friendly regulations). The dummy is equal to one for firms in countries with a value greater than 0.4

- **Corruption Perception Index.** Dummy equal to one for firms in countries with a Corruption Perception Index value less than 6. The index ranges from 1-10 (highly clean).
- **Infrastructure.** Dummy equal to one if firm identified electricity, telecommunications, and transportation as a major problem.
- **Macro and political environment.** Dummy equal to one if firm identified the macroeconomic and political environment as a major problem.

θ_s sector-specific fixed effects.

μ_c country-specific fixed effects.

Annex 6 Regression Results Using the Full Sample of Small Economies

Dependent Variable: Sales Growth (PPP adjusted)	Small Economies
Trinidad and Tobago dummy	-0.128**
Ease of doing business index	-0.10
Macroeconomic environment	-0.269***
Corruption perception index	0.260***
New product	0.105*
New process	-0.151**
Crime constraint	0.02
Labor constraint	-0.05
Financing constraint	-0.0920**
Age	-0.0114**
Age ²	0.0000832*
Foreign owned	-0.01
Joint owned	-0.05
Female owned	-0.06
Female manager	0.0439**
Size	0.00
Size ²	0.00
Privately held	0.05
Sole proprietorship	0.04
Partnerships	0.01
Limited partnerships	0.02
Exporter	0.05
Importer	0.01
Gift	0.06
Gift ²	-0.11
Outages	-0.02
Outages-generator	-0.03
Constant	0.184*
Number of observations	2,271
Sector fixed effects	Yes
Country fixed effects	Yes

Source: IDB staff estimates based on the World Bank Enterprise Survey (2010).

Note: PPP = purchasing power parity.

*p<0.05, ** p<0.01, *** p<0.001.

Annex 7 Regression Results Using a Sample of Trinidad and Tobago Firms

Dependent Variable: Sales Growth (PPP adjusted)	Trinidad and Tobago
Macro and political environment	-0.014882
Age	-0.000345
Age ²	0.000005
Size	0.000097
Size ²	0.000000
Female manager	0.001689
Female owned	-0.0100248*
Privately held	-0.016276
Sole proprietorship	-0.021704
Partnerships	-0.005860
Limited partnerships	-0.017901
Foreign owned	0.008207
Joint owned	0.006710
New process	0.006411
New product	-0.004294
Crime constraint	-0.005912
Labor constraint	-0.010014*
Financing constraint	-0.007955
Exporter	-0.011335
Importer	0.005733
Gift	0.064924
Gift ²	-0.072931
Infrastructure	0.004259
Constant	0.0419
Number of observations	147
Sector fixed effects	Yes

Source: Staff estimates from Proteqin Survey (2014). IDB staff estimates based on the World Bank Enterprise Survey (2010).

Note: PPP = purchasing power parity.

*p<0.05, ** p<0.01, *** p<0.001.



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