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# **Measuring the Competitiveness of Selected CARICOM Countries**

## **The Findings of the Global Competitiveness Index 2009–2010**

**Margareta Drzeniek-Hanouz, Irene Mia  
and Eva Trujillo Herrera**

**World Economic Forum**

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### Table of Contents

Introduction .....	5
The Global Competitiveness Index’s Methodological Framework .....	6
1. Institutions .....	7
2. Infrastructure .....	7
3. Macroeconomic Stability.....	7
4. Health and Primary Education .....	8
5. Higher Education and Training.....	8
6. Goods Market Efficiency.....	8
7. Labor Market Efficiency .....	9
8. Financial Market Sophistication .....	9
9. Technological Readiness .....	10
10. Market Size .....	10
11. Business Sophistication.....	10
12. Innovation.....	11
A Comparative Analysis of CARICOM Countries’ Competitive Landscape.....	13
A Deep-Dive in CARICOM Competitiveness: Identifying the Competitive Strengths and Weaknesses of Barbados, Guyana, Jamaica, Suriname, and Trinidad and Tobago.....	18
Barbados.....	18
Guyana.....	21
Jamaica.....	24
Suriname.....	27
Trinidad and Tobago.....	30
Conclusions .....	33
References.....	35
Annex 1: Structure of the Global Competitiveness Index 2009–2010 .....	37

### Introduction

The World Economic Forum (WEF) views competitiveness as the potential of a country to grow in a sustained way over the medium to long term and thus create prosperity for its citizens. The Global Competitiveness Index (GCI), developed by Professor Xavier Sala-i-Martin of Columbia University together with the WEF, represents a powerful tool to shed light on the complex set of factors, policies, and institutions that determine the level of national productivity and therefore the diverging growth experiences of countries. Identifying the long-term drivers of economic growth becomes even more relevant in the current context of global economic downturn, in which short-term urgencies tend to dominate political debate and political agendas. In this situation, policymakers neglect the longer-term view at their peril, since economies displaying strong competitiveness fundamentals are able to better weather business cycle downturns and ensure that mechanisms enabling solid economic growth going into the future are in place.

The small and open Caribbean Community (CARICOM) economies have by and large been significantly affected by the global economic and financial crisis through falling export demand, reduced tourism receipts and the liquidity crunch observed worldwide. Additionally, for the commodity-exporting economies, the crisis-related external shock has been aggravated by lower commodity prices. Table 1 shows that half of the countries in the region are likely to register negative growth rates for 2009 as projected by the International Monetary Fund (IMF).

**Table 1: CARICOM Economies' Projected Growth Rates, 2009**

	%
Antigua and Barbuda	-2.0
Bahamas, The	-4.5
Barbados	-3.5
Belize	1.0
Dominica	1.1
Grenada	-0.7
Guyana	2.6
Haiti	1.0
Jamaica	-2.6
St. Kitts and Nevis	-1.2
St. Lucia	-1.4
St. Vincent and the Grenadines	0.1
Suriname	2.8
Trinidad and Tobago	0.5

Note: Of the 15 CARICOM members, the IMF does not cover Montserrat.  
Source: IMF, 2009

In this context, an assessment of the competitive strengths and weaknesses of CARICOM economies appears particularly timely to help policymakers and all relevant national stakeholders prioritize policies and design effective strategies to recover from the crisis and beyond, ensuring lasting and increasing prosperity for the region.

This paper provides a comprehensive overview of the competitiveness landscape of the five most developed CARICOM countries, namely Barbados, Guyana, Jamaica, Suriname, and Trinidad and Tobago. It builds on the findings of the most recent GCI, featured in the World Economic Forum's *Global Competitiveness Report 2009–2010* (Sala-i-Martin et al., 2009). The remaining

## Measuring the Competitiveness of Selected CARICOM Countries

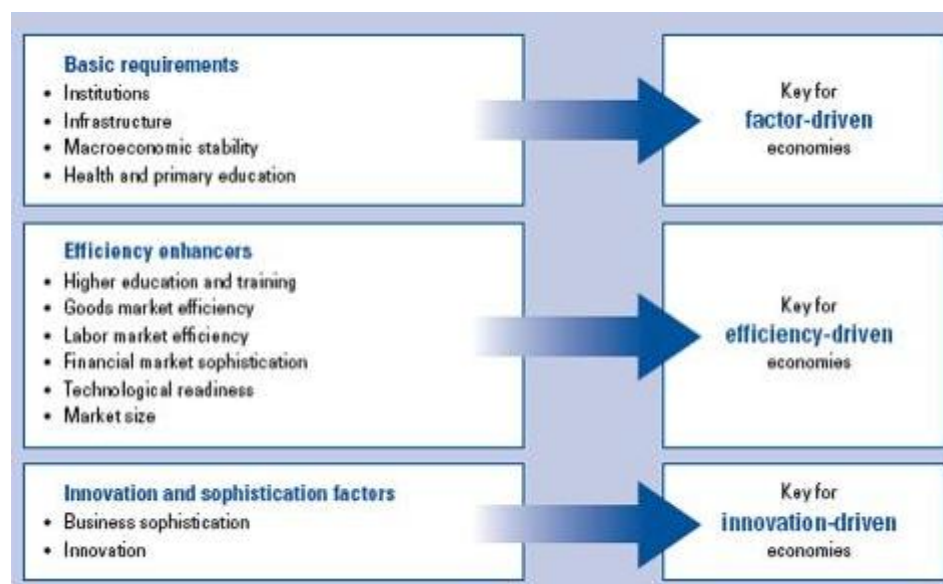
CARICOM members are not covered in this analysis as they were not included in the report.<sup>1</sup> Through the lens of the GCI, areas that should be prioritized in the design of national competitiveness strategies will be highlighted.

This paper begins with a brief outline of the GCI methodological framework. We then describe the regional context by looking at the evolution of the CARICOM economies since their inclusion in the GCI in 2007–08. We also review their respective current performances in the GCI and its pillars, and compare them to some relevant countries and regions. The last part of the paper provides an in-depth appraisal of the competitiveness of Barbados, Guyana, Jamaica, Suriname, and Trinidad and Tobago, and identifies areas requiring improvement for each of the five countries.

## The Global Competitiveness Index's Methodological Framework

The WEF has been at the forefront of national competitiveness analysis for the past three decades, working with leading academics and continuously incorporating relevant new findings of theoretical and empirical economic literature into its work. Designed in cooperation with Professor Xavier Sala-i-Martin from Columbia University, the GCI was introduced in 2004 as a state-of-the-art, comprehensive methodological framework to assess *the set of institutions, policies, and factors that determine national levels of productivity* across more than 130 economies. (For a more detailed analysis of the GCI, see Sala-i-Martin et al., [2009] and Annex 1 of this paper.) The Index identifies a large number of macro- and microeconomic drivers of growth, analyzing a total of 113 indicators. The GCI builds on the awareness that competitiveness is a complex phenomenon that cannot be explained by one or two factors exclusively. On the contrary, competitiveness—and hence sustained growth—are driven by the inter-relationships of several diverse elements. The GCI methodological framework groups all these elements into *12 Pillars of Competitiveness*, as shown in Figure 1 and detailed below.

Figure 1: The 12 Pillars of Competitiveness in the GCI



Source: Sala-i-Martin et al., 2009

<sup>1</sup> For the purpose of this paper, the term CARICOM economies/members or countries will refer only to the five more developed members as explained above.

### 1. Institutions

The institutional environment provides the framework within which national actors interact to generate income and prosperity in a given economy. Institutions conducive to competitiveness and long-term growth must ensure respect for property rights and contract enforcement and conduct their day-to-day activities in an efficient and transparent manner. They should also stimulate entrepreneurship, maintain macroeconomic stability, manage risk-taking by financial intermediaries, and enhance participation and accountability.

At the same time, fair and competent private institutions have a key role to play, alongside public ones, in establishing a pro-growth environment. The recent global financial crisis and corporate scandals have dramatically highlighted the importance of adequate accounting and reporting standards and transparency for preventing fraud and mismanagement, ensuring good governance, and maintaining investor and consumer confidence. Businesses run in a transparent manner and abiding by strong ethical standards in their dealings with the government, other firms, and the public are a necessary element of any competitiveness-friendly institutional environment.

The institutions pillar gauges the quality of both public and private institutions in two separate subpillars, accounting for three-fourths and one-fourth of the final pillar score respectively. The *public institutions* subpillar assesses the general legal framework, public ethics standards, efficiency of public administration, and overall security situation (an important part of the general environment in which businesses can prosper) in a given economy. In turn, the *private institutions* subpillar includes elements of corporate ethics and accountability.

### 2. Infrastructure

Efficient and extensive infrastructure represents a basic condition for the efficient functioning of economies, supporting economic activities, exchanges, and production specialization, as well as connecting national actors to international and regional markets. Various studies have highlighted infrastructure's contribution to private sector productivity and investment rates.<sup>2</sup> Moreover, well-developed infrastructure contributes to reduced inequality and poverty by enabling poor and remote communities to access markets and basic services, including education, drinking water, and sanitation services. A study found that approximately 40 percent of the growth differential between low- and high-growth countries could be traced to differences in the effective use of infrastructure (Hulten, 1996).

The infrastructure pillar measures the quality and extensiveness of roads, railroads, air transport, and telecommunications, as well as the efficiency of port and electricity supply.

### 3. Macroeconomic Stability

A strong macroeconomic environment is a key element for businesses to operate and for the economy to grow in a sustainable manner. Indeed, governments cannot properly perform their functions and efficiently provide services to the citizens if they are burdened by high levels of indebtedness, and economic actors and citizens cannot take a long-term view in their activities when inflation is out of control. Governments running sustained fiscal deficits are then less able to react and smooth business cycles, as the current economic slowdown has shown for some countries.

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<sup>2</sup> See for example Borensztein (1998) on the crucial role of good-quality infrastructure, in particular in transportation and telecommunications, for attracting foreign direct investment (FDI).

## Measuring the Competitiveness of Selected CARICOM Countries

The macroeconomic stability pillar captures a number of hard data indicators, notably the government budget balance and debt, inflation, the interest rate spread, and the national savings rate. Elements relative to macroeconomic management are captured instead in the public institutions subpillar described above.

### 4. Health and Primary Education

A healthy and literate workforce is another basic requirement for enhancing national productivity and long-term competitiveness. Good health standards coupled with quality and universal basic education enable workers to perform tasks in an efficient manner and to adapt to the changing needs of the production system. Examples of the positive relationship between measures of health and education (both enrollment rates and quality) and per capita income growth abound in the economic literature. Investment in the provision of health and basic education services is therefore critical for clear economic, as well as moral, considerations.

The health and primary education pillar comprises two subpillars: basic health standards and the quantity as well as quality of primary education.

### 5. Higher Education and Training

An efficient higher education and training system is essential to provide an adequate pool of skilled and trained labor, while setting the foundations for an innovation-friendly environment. This is especially true for countries that have reached higher development stages and for which low-cost production constitutes increasingly less of a competitive advantage. For these countries, it becomes more and more important to be able to count on human resources that are sufficiently flexible and trained to quickly adapt to the changing environment and to effectively perform increasingly elaborate tasks as firms move up in the value-chain and increasingly rely on more complex technologies. Quality math and science education, good management schools, and on-the-job training programs, among others, represent relevant building blocks. The importance of education for overall competitiveness is clear when one looks at the recent development history of countries that tend to perform well in the GCI rankings. Switzerland, the United States, Singapore, and the Nordic countries have all placed a strong focus on higher education throughout the years.

The higher education and training pillar includes two subpillars: one measures enrollment levels at the secondary and tertiary levels and the quality of higher education, and the other measures the extent of vocational and on-the-job training.

### 6. Goods Market Efficiency

Efficient markets for goods and services ensure that resources are allocated to their most appropriate uses, thus providing the economy with the right mix of products based on supply-and-demand conditions. This becomes particularly important for countries as they move up the development path and increasingly base their competitiveness on well-functioning production processes and markets. The principal underpinnings to efficient markets for goods and services include healthy standards for competition among economic (national and foreign) actors, and adequate demand conditions. Market structures that hinder competition result in higher prices and fewer choices for the society; they also discourage entrepreneurship and innovation, ultimately compromising socioeconomic progress.



## Measuring the Competitiveness of Selected CARICOM Countries

Moreover, customers' orientation and preferences can be important factors behind firms' competitiveness, since more sophisticated and demanding buyers force firms to be more innovative and adaptable, contributing to their overall efficiency.

In this spirit, this pillar is divided into two subpillars, analyzing respectively the extent to which government interventions create distortions (including through agricultural policies, anti-monopoly policies, taxation, and red tape) and the intensity of competition, as well as the quality of demand conditions (including customer orientation and buyer sophistication).

### 7. Labor Market Efficiency

Flexible and well-functioning labor markets ensure the efficient allocation of workers in the economy, providing them with incentives to give their best effort in their jobs. In today's challenging economic environment, national production systems require continuous adjustments to remain competitive and for workers to shift rapidly and with little cost from one activity to another, allowing wages to fluctuate without large social disruption (Almeida and Carneiro, 2009; Amin, 2009; and Kaplan, 2009). Efficient markets also make use of all available talent, for example by fully integrating women into the labor force.

Last but not least, labor markets can also play a major role in reducing poverty and fostering social equality by simply providing employment and a steady source of income. This is especially relevant for some CARICOM countries characterized by unequal income distribution and widespread hardship.

This pillar assesses the flexibility of the labor market in each country and the extent to which it fosters the efficient use of talent.

### 8. Financial Market Sophistication

The recent global financial crisis has underlined the importance of efficient financial markets for the healthy functioning of national economies. A deep and sound financial system is associated with economic growth, physical capital accumulation, and improvements in economic efficiency (De la Torre and Schmuckler, 2007; and Levine et al., 2000). Efficient financial systems contribute to better resource allocation, and ultimately economic growth, by reducing the costs of acquiring and processing information, helping investors diversify risks, and reducing monitoring costs. Financial intermediaries can also encourage innovation by helping to identify entrepreneurs with the best and potentially most profitable ideas and products, and by channeling financial resources to these projects.

In view of the above, sophisticated financial markets are needed to make capital available for private-sector investment from various sources. The recent liquidity crunch experienced by both developing and developed countries in the aftermath of the collapse of global financial markets has had a major negative impact on economic activities and countries' growth prospects in the short to medium term. The economic crisis has also underscored the importance of confidence in and transparency of the banking sector, and how financial markets require appropriate regulation to protect investors and economic actors at large.

The financial market sophistication pillar consists of two subpillars that gauge first the efficiency of the financial system and second its soundness and trustworthiness. It analyzes variables such as the ease of obtaining bank loans, the soundness of banks, the ease of raising money on the local stock market, and the availability of venture capital.

### 9. Technological Readiness

Technology is increasingly becoming an essential element for firms to compete and prosper in today's rapidly changing economy. Countries and firms must be sufficiently agile to adopt existing technology and adapt it to the needs of their local productive systems and markets. In this context, whether the technology used has or has not been developed within national borders is irrelevant: the central point is that the economic actors operating in the country have access to advanced products and blueprints (notably through foreign direct investment [FDI]) and the ability to use them. The GCI distinguishes this capacity to adopt existing technology (technological readiness) from the ability to innovate and generate new technology (innovation, pillar 12).

Given its impact on production and processes across different sectors and industries, information and communication technologies (ICT) play a key role in boosting national productivity and economic growth, not to mention in reducing economic and social divides within and among countries (Geiger and Mia, 2009). ICT has evolved into an essential infrastructure for any efficient economy and an important tool to foster social and economic inclusiveness.

The technological readiness pillar measures the extent to which countries leverage technologies and knowledge available in the country irrespective of their origin, with a special emphasis on ICT penetration and usage.

### 10. Market Size

A sufficiently large market allows firms to benefit from economies of scale, which in turn encourages them to invest in research and development (R&D) and continuously improve their processes and products. In this sense, the size of the market is central in fostering productivity.

Traditionally, the markets available to domestic businesses have been constrained by national borders. Globalization has made international markets a substitute and a complement for domestic markets, especially for small countries such as the CARICOM members. There is vast empirical evidence showing that trade openness is positively associated with growth, especially for small economies. Thus, exports can be seen as a substitute for domestic demand in determining the size of the market for the firms of a country. In the context of the open CARICOM economies, recovery from the present downturn could be eased by increased trade and export demand.

The market size pillar includes both domestic and foreign markets, therefore giving credit to export-oriented economies and geographic areas (such as the European Union or the CARICOM Single Market and Economy [CSME]) that comprise many countries but have one common trade policy and market.

### 11. Business Sophistication

Business sophistication leads to higher efficiency in the production of goods and services, contributing to a healthy and competitive economy. Sophisticated operations, strategies, and business networks help firms achieve greater efficiency in the production of goods and services.

The business sophistication pillar measures micro-economic factors that are particularly important for firms and countries high on the value chain and close to the technological frontier. Important elements include the quantity and quality of suppliers, the presence of deep and efficient clusters, well-developed production processes, the nature of a firm's competitive advantage (where it is producing on the value chain), and control of international distribution and marketing.

### 12. Innovation

The capacity to generate endogenous innovation is widely seen as a strategic driver of national competitiveness in the long run. Innovation does not suffer from diminishing rates of return, unlike other factors of production. Thus it represents the main source of competitive advantage for countries as they approach the technological frontier. For these countries, the generation of new and cutting-edge products or processes becomes crucial for sustained growth. While less advanced economies can still grow by absorbing exogenous technology, any national development strategy with an eye to the future should work at the establishment of an environment that is friendly to and encourages innovation. Such an environment requires sufficient investment in R&D, especially by the private sector, the development of high-quality scientific research institutions, close collaboration in research between universities and industry, and the protection of intellectual property, among others. The innovation pillar captures these measures of the innovation potential of a given country, as well as a measure of innovation outputs (the number of registered utility patents per capita).

The 12 pillars of competitiveness play an important role as drivers of competitiveness for all countries, but their relevance differs according to the stage of development a given country is in. Different aspects affect different countries in different ways. The elements driving productivity, and therefore competitiveness, change as countries progress along the development path. Accordingly, the GCI classifies countries into three specific stages of development: *factor-driven*, *efficiency-driven*, and *innovation-driven*. (The classification adopted by the GCI is a slightly modified version of Michael Porter's theory of stages of development [Porter, 1990]. For further details, see Sala-i-Martin et al. [2009]).

Table 2 lists the CARICOM economies, together with relevant comparators, by stage of development, according to the classification included in *The Global Competitiveness Report 2009–2010*.

**Table 2. Classification of CARICOM Countries and Selected Economies into Stages of Development**

	CARICOM countries and comparators	Other countries in this stage	Important areas for competitiveness
<b>Stage 1 (factor-driven)</b> Income of less than US\$2,000	<b>Guyana</b>	India, Madagascar, Honduras, Nigeria, Pakistan, Philippines	Basic requirements (critical) and efficiency enhancers (very important)
<b>Transition from 1 to 2</b> Income of US\$2,000-US\$3,000	<b>Jamaica</b>	Algeria, Egypt, Guatemala, Paraguay, Saudi Arabia, Venezuela	Basic requirements (critical) and efficiency enhancers (increasingly important)
<b>Stage 2 (efficiency-driven)</b> Income of US\$3,000-US\$9,000	<b>Suriname</b> , Costa Rica, Dominican Republic, Panama, Mauritius	Argentina, Brazil, Peru, South Africa, Thailand	Basic requirements (very important) and efficiency enhancers (critical)
<b>Transition from 2 to 3</b> Income of US\$9,000-US\$17,000	<b>Barbados</b>	Chile, Croatia, Mexico, Russian Federation, Turkey, Uruguay	Same as above, but innovation factors become increasingly important
<b>Stage 3 (innovation-driven)</b> Income more than US\$17,000	<b>Trinidad and Tobago</b> , Cyprus, Ireland, Malta	Hong Kong SAR, Iceland, Israel, Taiwan, China, United States	All three areas important: basic requirements, efficiency enhancers and innovation factors

Source: Sala-i-Martin et al., 2009

In the factor-driven stage, countries and firms compete based on their factor endowments, primarily low-cost labor and natural resources, and their economies are centered on commodities and/or basic manufactured products. Efficient public and private institutions (pillar 1), extensive and well-functioning infrastructure (pillar 2), good macroeconomic fundamentals (pillar 3), and a healthy and literate labor force (pillar 4) are critical elements for national competitiveness at this stage.

## Measuring the Competitiveness of Selected CARICOM Countries

As economies move up the development path to the intermediate, efficiency-driven stage, long-term growth increasingly depends on efficient factor markets and production processes and practices at the firm level. Key competitiveness drivers in this stage are quality higher education and training systems (pillar 5), efficient markets for goods and services (pillar 6), flexible labor markets (pillar 7), sophisticated and sound financial markets (pillar 8), a large domestic and/or foreign market that allows for economies of scale (pillar 9), and the ability to leverage existing technologies, notably ICT, in the national production system (pillar 10).

In the third and most advanced innovation-driven stage of development, competitiveness is still driven to a large extent by efficient markets and production processes; however the capacity to produce new and innovative products by using sophisticated processes becomes increasingly important. At this point, a large innovation potential (pillar 12) and the use of sophisticated production processes (pillar 11) are the crucial competitiveness enhancers.

As shown in Table 2, economies are allocated to the different stages of development according to their GDP per capita at market exchange rates, which is used as a proxy for wages. This criterion is then complemented by a second one measuring the extent to which countries are factor driven, using as a proxy the share of exports of mineral products as a share of total exports (goods and services) over the 2003–07 period. We assume that countries that export more than 70 percent of mineral products are to a large extent factor driven. The countries falling between two of the three stages are defined as “in transition.”

CARICOM economies are each in a different stage of development, with Guyana, Suriname, and Trinidad and Tobago in stages 1, 2, and 3, respectively, and Jamaica and Barbados in transition from stage 1 to 2 and 2 to 3, respectively. Hence, despite their geographic proximity, the factors driving their competitiveness are quite different depending on the specific economy.

The GCI methodological framework integrates the concept of development stages in a two step process:

- It organizes the 12 pillars into three subindexes, according to their importance for each of the stages of development referenced above. Pillars 1 through 4 are then considered *basic requirements of competitiveness*, particularly relevant for countries in the factor-driven stage but also preconditions for any competitive economy. Pillars 5 through 10 are defined as *efficiency enhancers*, crucial for efficiency-driven economies. Pillars 11 and 12 are the *innovation and sophistication factors*, key for countries in the innovation-driven stage.
- It assigns a different relative weight to each subindex in the overall GCI computation according to the specific development stage of a country. These weights have been derived from a maximum likelihood regression of GDP per capita. Table 3 provides full details of the weighting of the subindexes based on stages of development. For countries “in transition,” the weights change smoothly as they evolve, putting progressively more emphasis on the drivers becoming more important at the higher stage and giving credit to the countries that are preparing for it.

## Measuring the Competitiveness of Selected CARICOM Countries

**Table 3: Weighting of GCI Subindexes at Each Stage of Development**

Subindex	Factor-driven stage	Efficiency-driven stage	Innovation-driven stage
Basic requirements	60%	40%	20%
Efficiency enhancers	35%	50%	50%
Innovation and sophistication factors	5%	10%	30%

Source: Sala-i-Martin et al., 2009

Within the CARICOM countries, the overall GCI score for Guyana (stage 1), Suriname (stage 2), and Trinidad and Tobago (stage 3) is the result of an average of the three subindexes but with different weights according to the stage of development. For instance, the basic requirements would account for 60 percent, 40 percent, and 20 percent of the overall score for Guyana, Suriname, and Trinidad and Tobago, respectively.

The GCI builds on a combination of hard and survey data to capture as comprehensively as possible the determinants of competitiveness. Hard data are indicators capturing quantitative dimensions of competitiveness, such as inflation rates, personal computer penetration, and life expectancy. These data are collected by international organizations, including the IMF, the World Bank, and various United Nations agencies. Survey data capture competitiveness fundamentals that tend to be more qualitative in nature and for which hard data are often not available for the sample of countries included in the GCI. They include critical dimensions such as the protection of property rights, independence of the judiciary, and the quality of the educational system. Survey data come from the Executive Opinion Survey, conducted by the WEF annually in over 130 economies worldwide, accounting for approximately 98 percent of global GDP in 2009. For a detailed description of the GCI structure and the 113 variables included in it, see Annex 1: Structure of the Global Competitiveness Index 2009–2010 at the end of this paper. Browne and Geiger (2009) provide an in-depth analysis of the Survey's process and methodology.

## A Comparative Analysis of CARICOM Countries' Competitive Landscape

This section provides a comparative snapshot of the competitiveness of CARICOM countries, drawing on the findings of the GCI 2009-2010. To provide benchmarks relevant to CARICOM countries' progress and challenges ahead, comparisons are made to select neighboring and/or relevant countries and regions.<sup>3</sup> The GCI rankings for CARICOM economies for the last three years are included. This analysis provides a useful context for the next section's detailed assessment of the competitive strengths and weaknesses of the five countries covered and helps to identify best practices and general problematic areas in need of corrective policies and actions at the regional level.

<sup>3</sup> The economies chosen for the comparative sample are Costa Rica, Dominican Republic, and Panama in the region, and relevant non-regional comparators Cyprus, Malta, and Mauritius. The regional average score for Latin America and the Caribbean is also taken into account.

## Measuring the Competitiveness of Selected CARICOM Countries

Table 4 traces the evolution in the GCI of CARICOM economies over the past three years,<sup>4</sup> while Tables 5 and 6 show rankings and scores for CARICOM economies and selected countries/regions in the overall GCI 2009–2010, as well as for each subindex and pillar.

**Table 4: CARICOM Countries in the GCI, Evolution 2007–09**

	2009-2010		2008-2009		2007-2008	
	Rank	Score	Rank	Score	Rank	Score
Barbados	44	4.35	47	4.40	50	4.32
Guyana	104	3.56	115	3.47	126	3.25
Jamaica	91	3.81	86	3.89	78	3.95
Suriname	102	3.57	103	3.58	113	3.40
Trinidad and Tobago	86	3.91	92	3.85	84	3.88

Source: WEF, various years

**Table 5: GCI 2009–10 and its Subindexes for CARICOM Economies and Selected Comparators**

	Global Competitiveness Index 2009-2010		Subindex A: Basic requirements		Subindex B: Efficiency enhancers		Subindex C: Innovation and sophistication	
	Rank	Score	Rank	Score	Rank	Score	Rank	Score
Barbados	44	4.35	31	5.16	60	4.11	49	3.81
Guyana	104	3.56	105	3.69	107	3.40	110	3.06
Jamaica	91	3.81	101	3.74	73	3.95	83	3.39
Suriname	102	3.57	75	4.26	126	3.14	118	2.94
Trinidad and Tobago	86	3.91	48	4.67	79	3.90	79	3.42
Costa Rica	55	4.25	62	4.44	58	4.13	37	4.08
Cyprus	34	4.57	21	5.43	41	4.45	32	4.18
Dominican Republic	95	3.75	98	3.82	88	3.77	82	3.41
Malta	52	4.30	41	4.97	48	4.31	48	3.83
Mauritius	57	4.22	51	4.63	72	4.01	65	3.59
Panama	59	4.21	55	4.54	70	4.04	54	3.73
Latin America and the Caribbean average	–	3.92	–	4.20	–	3.82	–	3.41

Source: WEF, 2009

<sup>4</sup> The time series we are considering in this paper is unfortunately rather short given that the five CARICOM countries have featured together in the *Global Competitiveness Report* series only since 2007.

## Measuring the Competitiveness of Selected CARICOM Countries

**Table 6: The GCI's 12 Pillars of Competitiveness 2009–10: CARICOM Economies and Selected Comparators**

	Institutions		Infrastructure		Macroeconomic stability		Health and primary education		Higher education and training		Goods market efficiency		Labor market efficiency		Financial market sophistication		Technological readiness		Market size		Business sophistication		Innovation	
	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score
Barbados	20	5.18	21	5.37	115	3.80	9	6.28	26	4.91	72	4.12	48	4.58	38	4.67	41	4.44	126	1.92	58	4.20	47	3.43
Guyana	103	3.32	91	3.03	127	3.00	67	5.41	78	3.81	96	3.91	99	4.06	101	3.72	94	3.12	129	1.78	94	3.60	121	2.52
Jamaica	82	3.70	67	3.84	131	2.25	88	5.14	77	3.83	69	4.18	72	4.33	46	4.58	50	3.90	100	2.90	79	3.82	82	2.96
Suriname	94	3.50	86	3.15	51	4.82	54	5.58	97	3.43	123	3.51	108	3.95	112	3.48	115	2.65	128	1.80	115	3.31	118	2.57
Trinidad and Tobago	80	3.72	54	4.09	23	5.35	62	5.50	63	4.05	92	3.93	81	4.27	34	4.70	67	3.55	102	2.87	75	3.90	87	2.95
Costa Rica	47	4.42	82	3.24	101	4.11	29	5.97	44	4.42	47	4.42	36	4.71	79	4.08	62	3.72	77	3.41	41	4.48	34	3.68
Cyprus	22	5.03	24	5.22	39	5.15	5	6.32	28	4.81	24	4.87	46	4.62	18	5.00	38	4.50	99	2.92	31	4.67	35	3.68
Dominican Republic	117	3.19	85	3.16	94	4.28	103	4.65	89	3.56	89	3.98	73	4.32	105	3.64	72	3.47	68	3.64	71	3.98	100	2.84
Malta	33	4.82	38	4.60	81	4.52	32	5.94	37	4.59	40	4.53	93	4.11	13	5.16	27	5.07	121	2.41	46	4.33	53	3.33
Mauritius	41	4.59	53	4.16	98	4.21	56	5.56	79	3.79	37	4.62	74	4.32	26	4.86	57	3.80	110	2.69	55	4.23	85	2.95
Panama	69	3.85	65	3.88	46	4.92	64	5.50	80	3.76	54	4.33	89	4.16	22	4.95	59	3.79	81	3.27	45	4.33	66	3.12
Latin American and the Caribbean average	-	3.56	-	3.49	-	4.38	-	5.36	-	3.80	-	3.96	-	4.04	-	4.06	-	3.47	-	3.57	-	3.91	-	2.91

Source: WEF, 2009

A look at the GCI rankings for 2009–10 (Table 5) highlights a very mixed competitiveness performance for the region. Of the five economies considered, only Barbados, at 44<sup>th</sup>, features in the top half of the rankings, second in the comparative sample only to Cyprus (34<sup>th</sup>) and largely outperforming the Latin American and Caribbean average (4.35 vs. 3.92). The remaining economies trail much behind in the rankings, with especially Suriname (102<sup>nd</sup>) and Guyana (104<sup>th</sup>) placing among the lowest-ranked 30 or so economies in the world for their competitiveness. Not surprisingly, Barbados also tops the regional rankings at the subindex level, placing 31<sup>st</sup>, 60<sup>th</sup>, and 49<sup>th</sup>, respectively, for the quality of its basic requirements, efficiency enhancers, and innovation and sophistication factors.

On a slightly more positive note, all countries, with the exception of Jamaica, seem to have improved their competitive fundamentals over the past three years (Table 4). In particular, regional laggards Suriname and Guyana have gained 11 and 22 places, respectively, over the period considered.

Table 6 gives a general overview of each economy's competitive advantages and disadvantages as gauged by the GCI's 12 pillars. Although an in-depth competitiveness analysis at the country level will be performed in the next section, Box 1 summarizes the main trends highlighted for each economy.

## Measuring the Competitiveness of Selected CARICOM Countries

### Box 1: Main Trends in CARICOM Competitiveness

#### ***Barbados***

Competitive advantages: institutions (20<sup>th</sup>), infrastructure (21<sup>st</sup>), health and primary education (9<sup>th</sup>), and higher education and training (26<sup>th</sup>).

Competitive disadvantages: macroeconomic stability (115<sup>th</sup>), goods market efficiency (72<sup>nd</sup>), market size (126<sup>th</sup>), and business sophistication (58<sup>th</sup>).

#### ***Guyana***

Competitive advantages: health and primary education (67<sup>th</sup>), and higher education and training (78<sup>th</sup>).

Competitive disadvantages: institutions (103<sup>rd</sup>), macroeconomic stability (127<sup>th</sup>), labor market efficiency (99<sup>th</sup>), financial market sophistication (101<sup>st</sup>), market size (129<sup>th</sup>), and innovation (121<sup>st</sup>).

#### ***Jamaica***

Competitive advantages: infrastructure (67<sup>th</sup>), goods market efficiency (69<sup>th</sup>), labor market efficiency (72<sup>nd</sup>), financial market sophistication (46<sup>th</sup>), and technological readiness (50<sup>th</sup>).

Competitive disadvantages: macroeconomic stability (131<sup>st</sup>), health and primary education (88<sup>th</sup>), and market size (100<sup>th</sup>).

#### ***Suriname***

Competitive advantages: macroeconomic stability (51<sup>st</sup>), and health and primary education (54<sup>th</sup>).

Competitive disadvantages: goods market efficiency (123<sup>rd</sup>), labor market efficiency (108<sup>th</sup>), financial market sophistication (112<sup>th</sup>), technological readiness (115<sup>th</sup>), market size (128<sup>th</sup>), business sophistication (115<sup>th</sup>), and innovation (118<sup>th</sup>).

#### ***Trinidad and Tobago***

Competitive advantages: infrastructure (54<sup>th</sup>), macroeconomic stability (23<sup>rd</sup>), and financial market sophistication (34<sup>th</sup>).

Competitive disadvantages: institutions (80<sup>th</sup>), goods market efficiency (92<sup>nd</sup>), market size (102<sup>nd</sup>), and innovation (87<sup>th</sup>).

Box 1 points to very diverse competitive landscapes within the CARICOM, with different strengths and areas of focus. Indeed, the only features CARICOM economies seem to share is the small size of their markets. Similarly, macroeconomic stability appears to be a concern for the region at large, with the exception of Suriname (51<sup>st</sup>) and Trinidad and Tobago (23<sup>rd</sup>), which can count on oil and gas export revenues.

Hence the building blocks of an enhanced competitiveness agenda for the CARICOM economies will have to vary across the region, from country to country, and include policies and actions tailored to each country's specificities and competitiveness diagnostics. Nevertheless, taking into account the regional context may prove useful for decision makers throughout the region in the design of their national strategies. While the GCI results highlight weaknesses and strengths at the national level, regional benchmarking against best performers allows decision makers to identify and learn from best practices in selected dimensions of competitiveness, gaining an additional tool to tackle their countries' competitiveness shortcomings. In this sense, while Barbados shows the way on well-functioning and transparent institutions, well-developed infrastructure, and quality education



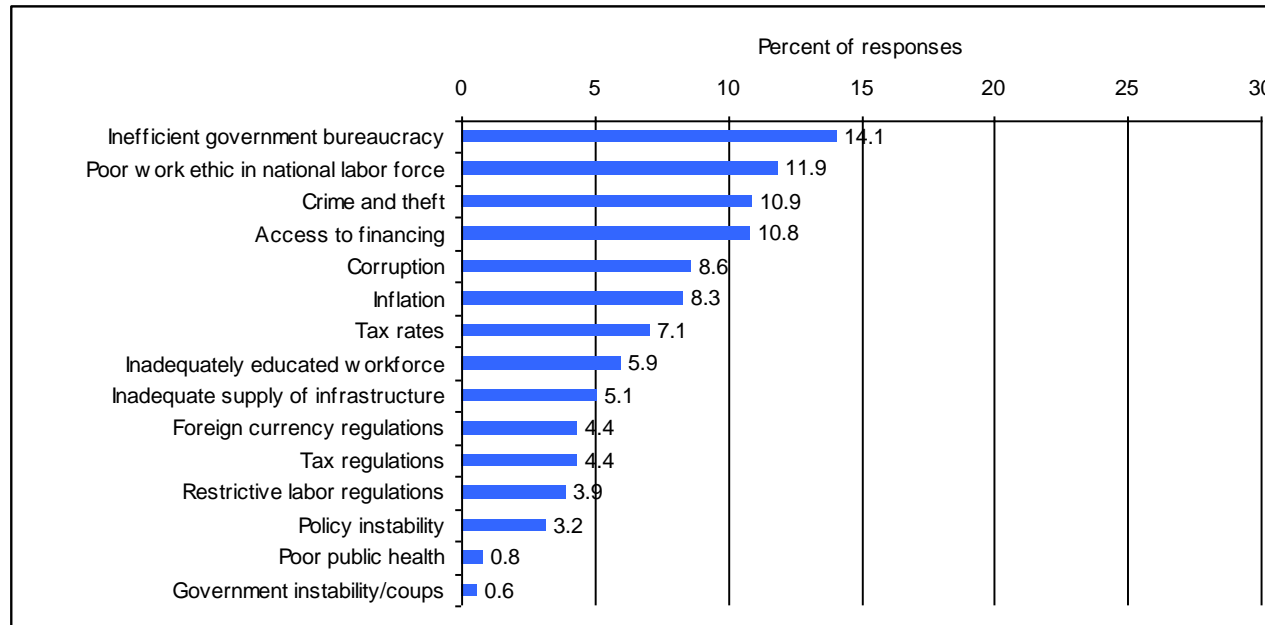
## Measuring the Competitiveness of Selected CARICOM Countries

at all levels, Trinidad and Tobago and Jamaica could provide important lessons for their sophisticated financial markets. Even laggards Guyana and Suriname are worth a careful look for their satisfactory health and primary education standards.

At the same time, CARICOM countries could greatly benefit from adopting a regional perspective and approach to common weaknesses as well as to areas of strength. Enhanced regional coordination and common strategies to enlarge the size of the market and improve macroeconomic stability are particularly timely in the current circumstances of reduced export demand and increased pressures on the budget in order to stimulate the economy, and may prove to be more effective than national strategies.

On a related note, Figure 2 displays the insights of the business communities in each of the five countries with respect to the most problematic factors they face in doing business in the CARICOM region, as captured by the WEF's Executive Opinion Survey. The CARICOM average for the 2009–10 period is shown for a survey question asking business leaders to select among 15 constraints the five that are most problematic for doing business in their respective country. While the country-level results will be analyzed in the next section for each CARICOM country, the regional average provides useful information on the factors that seem to be hindering businesses at the CARICOM level. In this respect, inefficient government bureaucracy is by far the most problematic factor at the regional level (14.1 percent of responses), followed by poor work ethic in national labor forces (11.9 percent), crime and theft (10.9 percent), and access to financing (10.8 percent). On the other hand, government instability and coups (0.6 percent) and public health (0.8 percent) do not represent major problems in the region.

**Figure 2: Most Problematic Factors for Doing Business in the CARICOM Region**



The question asked to the firms was: “Select among the above 15 constraints the five most problematic factors for doing business in your country.”

Source: WEF, Executive Opinion Survey 2008, 2009.

## Measuring the Competitiveness of Selected CARICOM Countries

These insights add to the granularity of the GCI's analysis and point to additional areas of focus that policymakers in the region will need to keep in mind in the design of national and regional strategies for increased competitiveness.

## A Deep-Dive in CARICOM Competitiveness

### Identifying the Competitive Strengths and Weaknesses of Barbados, Guyana, Jamaica, Suriname, and Trinidad and Tobago

This section provides a detailed assessment of the competitiveness landscapes of each of the five CARICOM countries, focusing on their areas of strength and weakness. This assessment complements the regional perspective taken above and further supports private and public stakeholders in the region in drawing effective roadmaps and policies to enhance growth potential going forward.

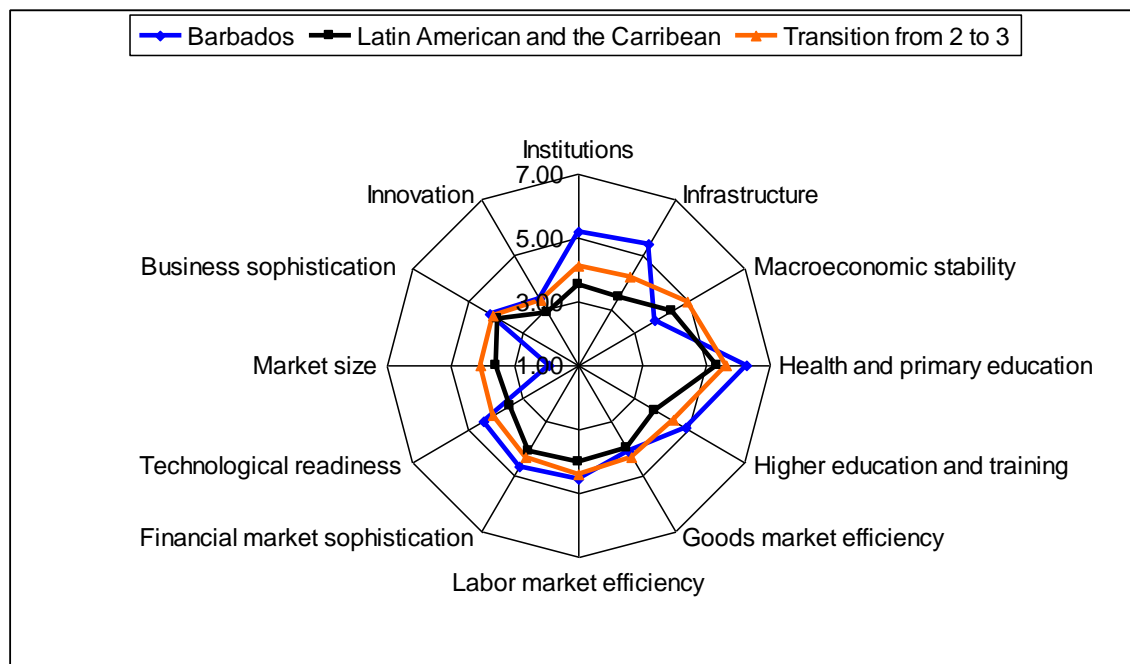
#### Barbados

Considering its small size and disadvantageous geographic situation, Barbados has reached a remarkable level of social and economic development. It is therefore hardly a surprise that Barbados is, at 44<sup>th</sup> position, the third most competitive economy in Latin America and the Caribbean, after Chile and Puerto Rico. Its consistent improvement in the rankings over the past three years reflects improvements to the country's competitiveness fundamentals.

Barbados particularly benefits from strong institutions (20<sup>th</sup>), high-quality infrastructure (21<sup>st</sup>), and highly developed health and education systems (ranked 9<sup>th</sup> for health and primary education and 26<sup>th</sup> for higher education and training), which place the economy on a strong footing. These relative strengths become even clearer when we benchmark Barbados against Latin America and the Caribbean and the relevant stage of development group averages.

## Measuring the Competitiveness of Selected CARICOM Countries

Figure 3: Barbados' Competitiveness at a Glance: Comparisons with the Latin American and the Caribbean and Transition Stage 2 to 3 Averages



Source: WEF, 2009

Barbados' solid institutional framework stands out positively, in particular when compared to the Latin America and Caribbean region. It even outperforms EU members Cyprus and Malta, at 22<sup>nd</sup> and 33<sup>rd</sup>, respectively. The country's good institutional basis is characterized by an efficient government (16<sup>th</sup>), well-defined and enforced property rights (27<sup>th</sup>), and an independent judicial system (20<sup>th</sup>). Moreover, politicians enjoy a high level of public trust (17<sup>th</sup>) and seem to act in a transparent manner (16<sup>th</sup>). However, the public sector is less successful when it comes to containing crime and violence and the related cost to business (87<sup>th</sup>). Finally, with an economy that relies heavily on offshore financial activities, it is no surprise that Barbadian policymakers have recognized the need for strict regulation of corporate governance and that domestic businesses adhere to some of the highest standards in the Caribbean region, ranked 20<sup>th</sup> overall.

Particularly when compared to many countries in the region, Barbados' workforce benefits from relatively well-developed health services, universally provided basic education, and good access to high-quality secondary and tertiary schooling. Indeed, the maintenance of high health standards is a priority of the government, and widely spread public services are free of charge and complemented by a well-developed private health sector. However, a few problems remain to be resolved. HIV/AIDS appears to have a significant impact on businesses in the country.<sup>5</sup> Although the prevalence rate is lower than in other countries in the region, it is fairly high on an international bases. Of the population aged 15 to 49, 1.2 percent are reported to be infected, which is similar to the situation in Thailand. This translates overproportionately into absenteeism and adds costs to training and hiring employees. Therefore, efforts to raise awareness and provide appropriate

<sup>5</sup> In their responses to the Executive Opinion Survey, business executives pointed out that the prevalence of HIV/AIDS imposes a considerable cost on the enterprise sector. The impact of HIV/AIDS prevalence on business is among the highest in the entire world, at 104<sup>th</sup> out of 133 countries.

## Measuring the Competitiveness of Selected CARICOM Countries

healthcare for people living with the virus need to be continued for clear economic, as well as ethical, reasons. Excellent progress has been made in improving educational outcomes at all levels, in terms of both quality and quantity, as reflected in the strong rankings on the related pillars. This provides a good basis for the country going forward. Overall, the country occupies an excellent 9<sup>th</sup> position with respect to health and primary education and is 26<sup>th</sup> on higher education and training, far ahead of any other CARICOM member covered by this paper.

Barbados' competitive disadvantages are mainly related to the country's small size and geographic position, which makes the economy highly dependent on external developments and therefore vulnerable. Over recent years, macroeconomic stability has deteriorated, and presently, most macro indicators lag behind the Latin America and the Caribbean average. Barbados places a low 115<sup>th</sup> out of 133 countries on the macroeconomic stability pillar. The budget deficit increased from 0.9 percent of GDP in 2007 to 4.0 in 2008 with debt almost hitting the value of the country's GDP. In 2008, high oil and food prices pushed inflation above 8 percent.<sup>6</sup> Looking forward, policymakers should make conservative fiscal management a priority because another significant deterioration in the budget figures could jeopardize the currency peg to the U.S. dollar and have strong repercussions throughout the economy.

Over the longer term, further opening up to international trade would help the country strengthen its competitiveness, as it would help to compensate for its small market size (126<sup>th</sup>) and also support diversification efforts. Currently, the Barbadian market for goods is sheltered from international competition by high trade barriers (123<sup>rd</sup>). This reduces the overall goods markets efficiency in Barbados, which is below levels found in the region on average.

Finally, some rigidities persist in the country's labor markets, with inflexible hiring and firing practices (70<sup>th</sup>) and rigid wage determination (94<sup>th</sup>). Problems related to labor markets are mirrored in the most problematic factors for Barbados, as assessed by the business community (see Figure 4). With over 17 percent of responses, the poor work ethic is identified as the most important obstacle to doing business in the country, followed by access to financing and inefficient government bureaucracy.

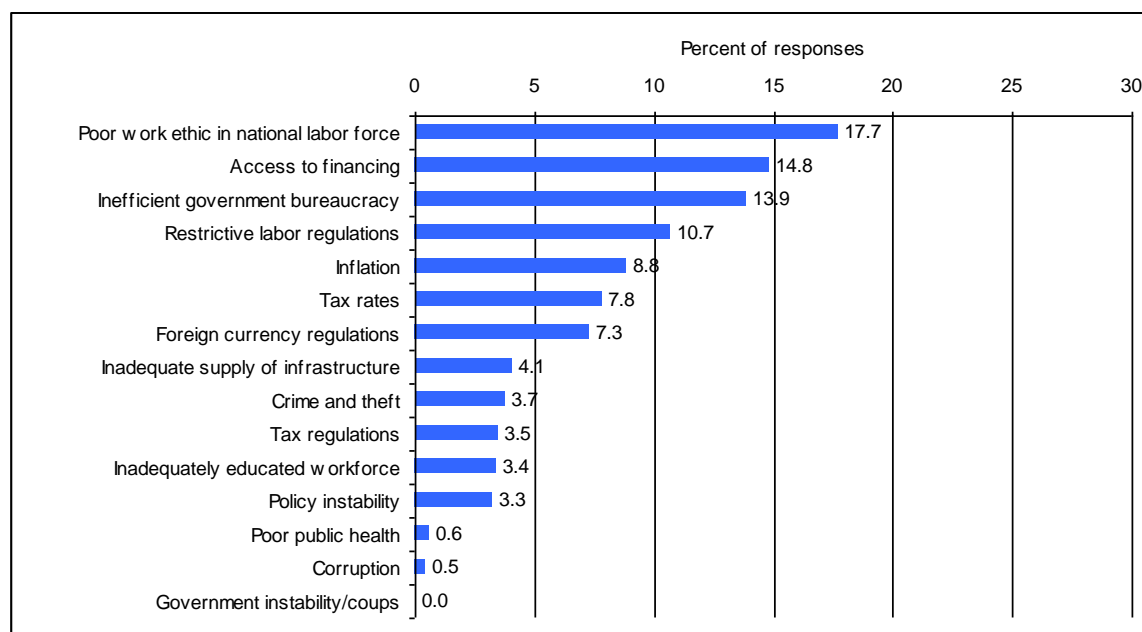
Overall, strong institutions, good infrastructure, and the excellent health and educational outcomes provide a good basis for the country's competitiveness. However, Barbados will have to reduce the budget deficit and public debt to better weather future external shocks, and also focus on other key areas related to labor markets and market opening.

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<sup>6</sup> Oil prices rose as a result of an adjustment in controlled prices.

## Measuring the Competitiveness of Selected CARICOM Countries

Figure 4: Most Problematic Factors for Doing Business in Barbados



The question asked to the firms was: *“Select among the above 15 constraints the five most problematic factors for doing business in your country.”*  
 Source: WEF, Executive Opinion Survey 2008, 2009.

## Guyana

At 104<sup>th</sup>, Guyana lags behind the rest of the region in competitiveness, although recent efforts to reform the economy have led to a significant improvement in the rankings from 126<sup>th</sup> in 2007. Since the early 1990s, significant progress has been achieved in privatizing and liberalizing the economy in the context of the Economic Recovery Programme, which marked the end of the period of “cooperative socialism.”<sup>7</sup> Market-oriented reforms and improvements in the institutional framework were put into place, while at the same time the macroeconomy was stabilized, and infrastructure, as well as health and education systems were strengthened.

As a result, Guyana’s competitiveness benefits from a fairly good educational system, flexible labor markets and high trade penetration, which contributes to relatively intense domestic competition. The country’s educational system is characterized by excellent results in terms of primary and secondary enrolment, where Guyana outperforms significantly more advanced economies, ranked 26<sup>th</sup> for primary and 12<sup>th</sup> for secondary enrolment. The high priority attributed to education in the country is also reflected in the high related spending as a share of GDP, where Guyana ranks 3<sup>rd</sup>. The quality of education appears to be adequate, in particular at the primary level (55<sup>th</sup>) but would benefit from more intense use of modern technologies in schools (112<sup>th</sup> for Internet access in schools).

In addition to a well-educated labor force, Guyana boasts flexible labor markets (47<sup>th</sup>). It is easy and not excessively costly to hire and fire employees, although business leaders point to somewhat disruptive relations between companies and employees (80<sup>th</sup>) and deem that the tax regime does not provide appropriate incentives to work and invest (118<sup>th</sup>). One of the biggest

<sup>7</sup> For a detailed account of Guyana’s recent economic history, see DaCosta, 2007

## Measuring the Competitiveness of Selected CARICOM Countries

challenges for the country's labor policy is to reverse the brain drain, which is currently assessed as the most pronounced out of all countries included in the GCI this year (133<sup>rd</sup>).

For a small country such as Guyana it is important to benefit from international trade to raise the efficiency of the domestic economy. Although sizeable trade barriers are in place, Guyana's economy is fairly open to international trade. Indeed, the country's openness appears to be beneficial for the efficiency of goods markets, which is satisfactory given the country's small size (ranked 82<sup>nd</sup> for domestic competition and 89<sup>th</sup> for foreign competition). Further gains could be realized by reducing the hassle associated with customs procedures, where Guyana currently ranks a low 126<sup>th</sup>. Since regulations are not perceived as burdensome in international comparison (43<sup>rd</sup>), this appears to be an isolated issue that could provide quick wins when addressed appropriately. Improvements in this area would also increase the profitability of exports, which could further compensate for the country's small domestic market (130<sup>th</sup>).

Against this progress stand a number of challenges related to the country's competitiveness, which become particularly clear when it is benchmarked against the Latin America and Caribbean average (see Figure 5). Most importantly, despite improvements in macroeconomic stability, the country continues to perform poorly in this category, ranking a very low 127<sup>th</sup> overall. A high budget deficit (7.9 percent of GDP in 2008), high public debt (92.5 percent), and high inflation are or could become a burden for the economy. At the same time, recent efforts to stabilize the economy are acknowledged in the GCI rankings: public debt has been reduced significantly since 2006 and inflation was brought down to single-digit numbers in 2008 after a surge in the previous year.

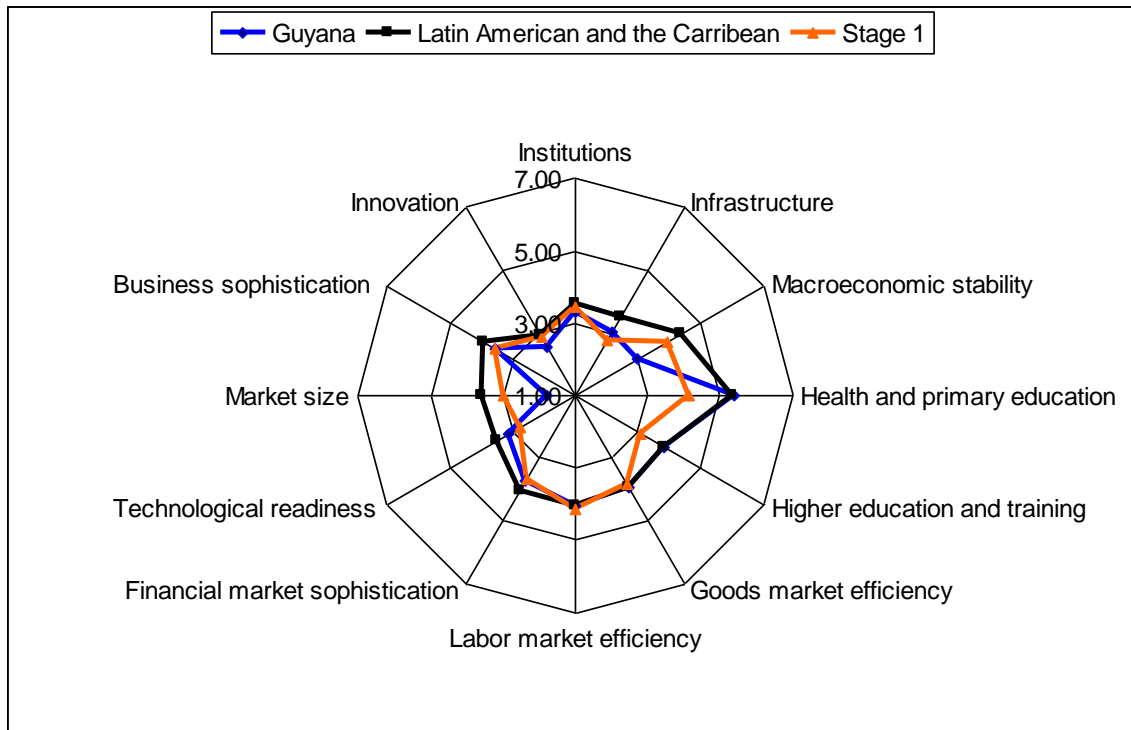
In addition to macroeconomic stability, Guyana's competitiveness would also benefit from upgrading the country's institutional framework, which is currently ranked 103<sup>rd</sup>. Among the concerns in this area is the lack of physical security, which stands out prominently. Crime and violence, and the threat of terrorism are considered costly for business (127<sup>th</sup> and 110<sup>th</sup>, respectively), and police services are seen as unreliable in providing protection (116<sup>th</sup>). Other issues businesses are struggling with include government favoritism (113<sup>th</sup>), inefficiencies in the legal framework (122<sup>nd</sup> in terms of efficiency for settling business disputes), and weakly defined property rights, in particular for intellectual property (123<sup>rd</sup>). On the other hand, government regulation is less burdensome than in many other countries, coming in at 43<sup>rd</sup> overall.

Another important challenge is related to the health of the population. Although somewhat concealed by the good performance in primary education, the second component of the pillar, which measures the health of the workforce, indicates an inability to provide healthcare for major parts of the population, which is a serious economic as well as moral issue (105<sup>th</sup>). The high prevalence of HIV/AIDS, tuberculosis, and malaria cause high costs to business, as reflected in the low rankings of 118<sup>th</sup>, 108<sup>th</sup> and 111<sup>th</sup>, respectively. The weak performance in this area is also reflected in high infant mortality (100<sup>th</sup>) and low life expectancy (108<sup>th</sup>).

Moving forward, tackling the basic challenges related to macroeconomic management, institutions, and health would enable Guyana to tap into its significant potential stemming from the well-educated, English-speaking labour force coupled with its geographic proximity to the United States.

## Measuring the Competitiveness of Selected CARICOM Countries

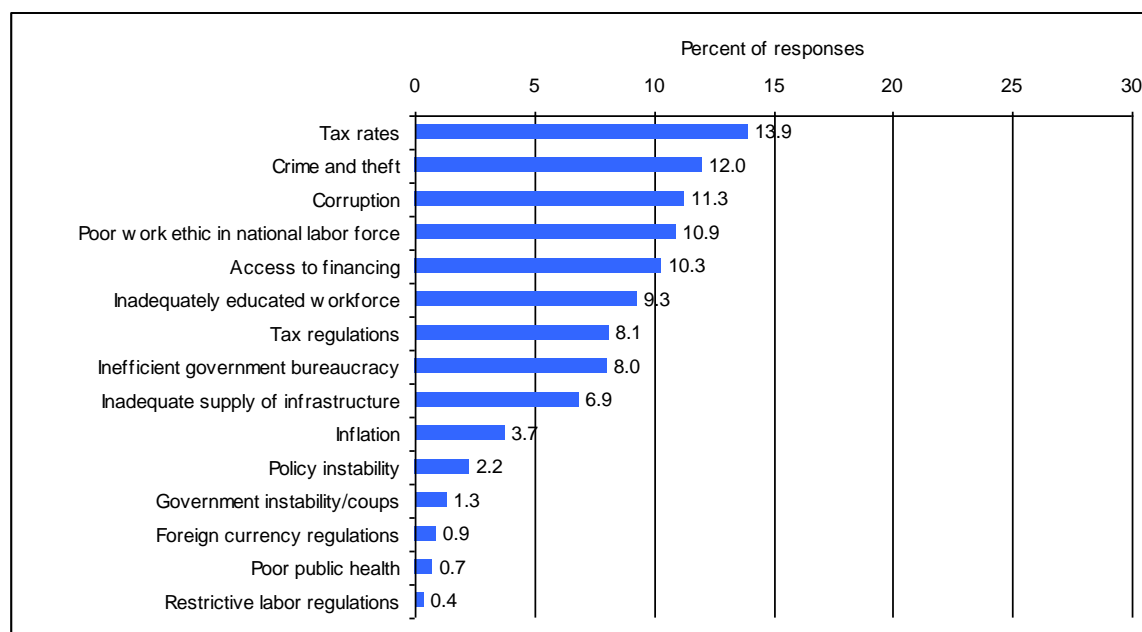
Figure 5: Guyana's Competitiveness at a Glance: Comparisons with the Latin American and the Caribbean and Stage 1 Averages



Source: WEF, 2009

## Measuring the Competitiveness of Selected CARICOM Countries

Figure 6: Most Problematic Factors for Doing Business in GUYANA



The question asked to the firms was: *“Select among the above 15 constraints the five most problematic factors for doing business in your country.”*  
 Source: WEF, Executive Opinion Survey 2008, 2009.

### Jamaica

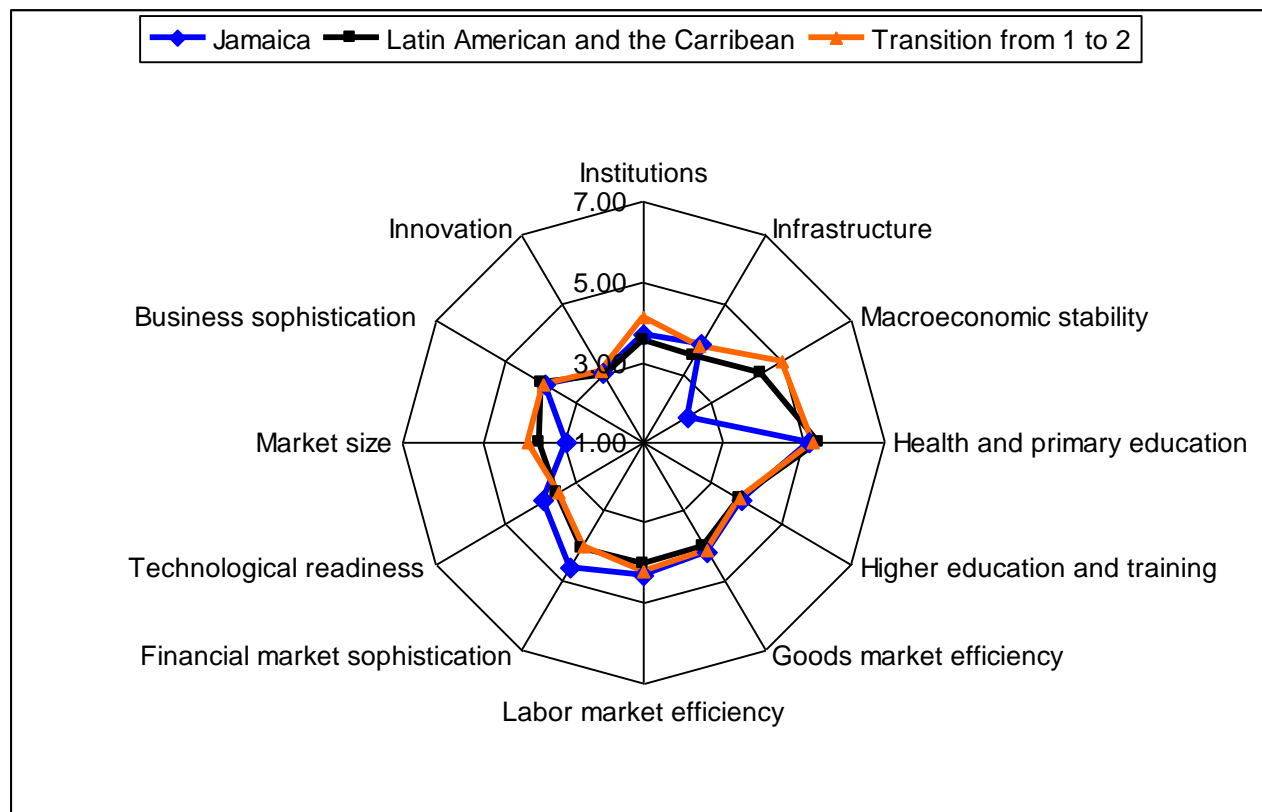
Jamaica is ranked 91<sup>st</sup> out of 133 economies covered in the GCI, losing some ground in competitiveness since 2007–08. High levels of violence and unemployment (especially among youth), along with macroeconomic instability, have been identified by many analysts as major challenges for Jamaica’s future competitiveness. Over recent years, the Jamaican government has worked toward improving key social indicators for the implementation of the Millennium Development Goals. For example, the government has adopted programs aimed at eradicating extreme poverty, increasing enrolment rates in primary schools, and controlling the spread of malaria. Recent studies show that Jamaica’s work on poverty reduction has resulted in a significant decline in the number of people living in poverty, with the rate declining to 19 percent of the population in 2003 (World Bank, 2009a).

Figure 7 shows that the area in which Jamaica’s performance lags behind most of the region and its peer group of the same development stage is macroeconomic stability, with a dismal 131<sup>st</sup> position in this pillar. This is mainly a reflection of Jamaica’s double-digit inflation (22 percent, ranked 124<sup>th</sup>) in 2008, worsened by the increase in global food and oil prices in 2008 (IMF, 2008a) and extremely high government debt (128 percent of GDP in 2008, ranked 130<sup>th</sup>).



## Measuring the Competitiveness of Selected CARICOM Countries

Figure 7: Jamaica's Competitiveness at a Glance: Comparisons with the Latin American and the Caribbean and Transition Stage 1 to 2 Averages



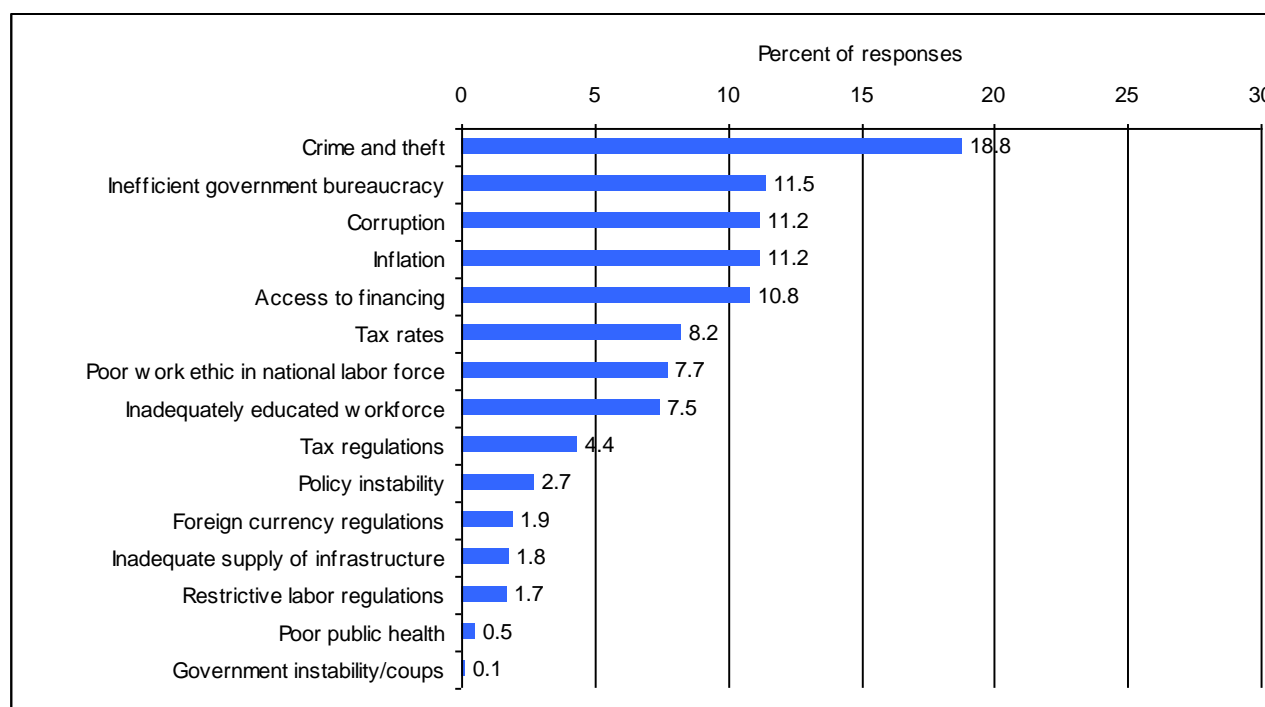
Source: WEF, 2009

Moreover, similar to many other Caribbean countries, crime is a significant problem in Jamaica (*The Economist*, 2008), as also highlighted in Figure 8, where crime and theft are identified as the most problematic factors to conducting business in the country (18.8 percent of the surveyed business leaders). Inefficient government bureaucracy (11.5 percent), corruption (11.2), and high inflation (11.8 percent) follow suit but with a measurably lower degree of concern. According to a recent study carried out by the World Bank, crime costs Jamaica about 4 percent of its GDP because of the resulting health expenses, loss of productivity, and public and private spending on security (World Bank, 2004). This is mirrored in the rankings for security-related indicators in the GCI: the country is ranked 128<sup>th</sup> and 130<sup>th</sup> for organized crime and business costs of crime and violence, respectively.

On a related note, although Jamaica has proven to be a stable democracy that peacefully transferred power from the People's National Party—in power for almost two decades—to the Labour Party in 2007, the general institutional environment at 82<sup>nd</sup> shows room for improvement. Particularly worrisome are institutional areas such as citizens' trust in politicians (93<sup>rd</sup>), wastefulness of government spending (103<sup>rd</sup>), and burden of government regulation (121<sup>st</sup>).

## Measuring the Competitiveness of Selected CARICOM Countries

Figure 8: Most Problematic Factors for Doing Business in Jamaica



The question asked to the firms was: “Select among the above 15 constraints the five most problematic factors for doing business in your country.”

Source: WEF, Executive Opinion Survey 2008, 2009.

As already mentioned, Jamaica is no exception to the regional trend by which young people are affected over-proportionately by social and economic problems given that they account for two thirds of the population in the Caribbean (World Bank, 2009a). In particular, Jamaican youth suffer from a much higher rate of unemployment, at 36 percent for people between the ages of 15 and 24 (compared to the overall rate of around 10 percent in 2004) (World Bank, World Development Indicators, online database). Education indicators also point to major challenges ahead for the youth population, with a primary education enrolment rate of 86 percent (105<sup>th</sup>) and a tertiary enrolment rate of only 18 percent (86<sup>th</sup>). Furthermore, given the gloomy outlook for finding employment in Jamaica, 80 percent of Jamaican college graduates leave the country (World Bank, 2004), creating a major brain drain problem (105<sup>th</sup>). This obviously depletes the national production sector of important human resources and skills. The government is aware of both the enrolment problem and the need to improve the quality of the education system (83<sup>rd</sup>), and it is making efforts to increase the efficiency of expenditure in education, currently standing at 5.4 percent of GDP (ranked 28<sup>th</sup>).

On a more positive note, Jamaica’s competitive advantages can be found mainly in the quality of its infrastructure (55<sup>th</sup>) and technological readiness (50<sup>th</sup>). Jamaica boasts somewhat developed roads (63<sup>rd</sup>) and good quality air transport facilities (38<sup>th</sup>) and ports (28<sup>th</sup>). Moreover, the country boasts good levels of ICT penetration, with 55 Internet users per 100 people (27<sup>th</sup>) and can count on a rather wide availability of the latest technology (46<sup>th</sup>). While the country seems to be leveraging technology coming from abroad to a rather satisfactory extent, its capacity for innovation still lags behind (103<sup>rd</sup>), with low company spending on R&D (77<sup>th</sup>) and with government procurement decisions that do not result in technological innovation (98<sup>th</sup>).

## Measuring the Competitiveness of Selected CARICOM Countries

Regarding the business environment, the latest World Bank data for *Doing Business* shows that generally CARICOM economies have improved the business environment during the past year (World Bank, 2009b). In the case of Jamaica, it takes eight days to start a business (20<sup>th</sup>) and requires completing six procedures (26<sup>th</sup>). The government has also given great priority to further improving the sophistication and soundness of the financial sector. In their assessment of Jamaica, the IMF “welcomed the positive indicators of banking sector soundness and encouraged the authorities’ intention to prevent unregulated investment schemes that are not in the public interest” (IMF, 2008a). Despite the crisis, Jamaica has demonstrated positive overall performance in financial market sophistication (46<sup>th</sup>) and soundness of banks (50<sup>th</sup>). However, as shown in Figure 8, access to financing remains a problem, an issue corroborated by the country’s 121<sup>st</sup> ranking in the ease of access to loans variable.

To improve its competitiveness in the future, Jamaica needs to significantly reduce crime and improve macroeconomic stability, while working on areas that directly affect youth, such as education, crime, and unemployment.

### Suriname

Suriname, at 102<sup>nd</sup>, is assessed as second to last in the region, before Guyana. Since its independence in 1975, Suriname’s turbulent history has severely constrained the country’s development and only the strong commodity prices of recent years—accompanied by sounder policies—put the country on a more favorable growth path. Presently, Suriname ranks at a fairly low 102<sup>nd</sup> position, but significant improvements have been realized in recent years, which enabled the country to move up from 113<sup>th</sup> in 2007.

Suriname’s strengths and weaknesses become particularly apparent when benchmarked against the averages of the two comparator groups of countries shown in Figure 9 - Latin America and those at the efficiency-driven stage of development. Suriname ranks 51<sup>st</sup> with respect to macroeconomic stability, the second best rating among the five CARICOM countries included in this analysis, after Trinidad and Tobago, the other resource exporting country under review. Aided by high commodity prices and sounder policies, the macroeconomic environment has gradually stabilized in recent years. Suriname’s public finances were put on sounder footing with the government running a budget surplus in 2007 (IMF, 2008b).<sup>8</sup> This was achieved by containing spending and a reform of tax collection that raised revenue, as well as the introduction of excise taxes. (For a thorough discussion of Suriname’s macroeconomic position see Fritz-Krockow et al. [2009].) At the same time, containing inflation, which surged to double digit levels in 2008 as a result of accelerated credit growth, became a new challenge.

Another area of strength for Suriname is health and primary education (54<sup>th</sup>); however, the good overall result conceals an uneven outcome. The fairly poor health conditions of the population (94<sup>th</sup>) are partially offset by the good results achieved for primary education (33<sup>rd</sup> overall) in terms of both enrolment and quality. The improvements have been impressive since the early nineties. In 2008, 94 percent of all children attended primary schools compared to 78 percent in 1990–91 (EIU, 2006). The health conditions remain worrying despite some improvements reflected in reduced infant mortality and higher life expectancy. Tuberculosis, HIV/AIDS, and malaria are fairly widespread (92<sup>nd</sup>, 117<sup>th</sup>, and 109<sup>th</sup>, respectively), and in particular HIV/AIDS creates significant costs for businesses (108<sup>th</sup>).

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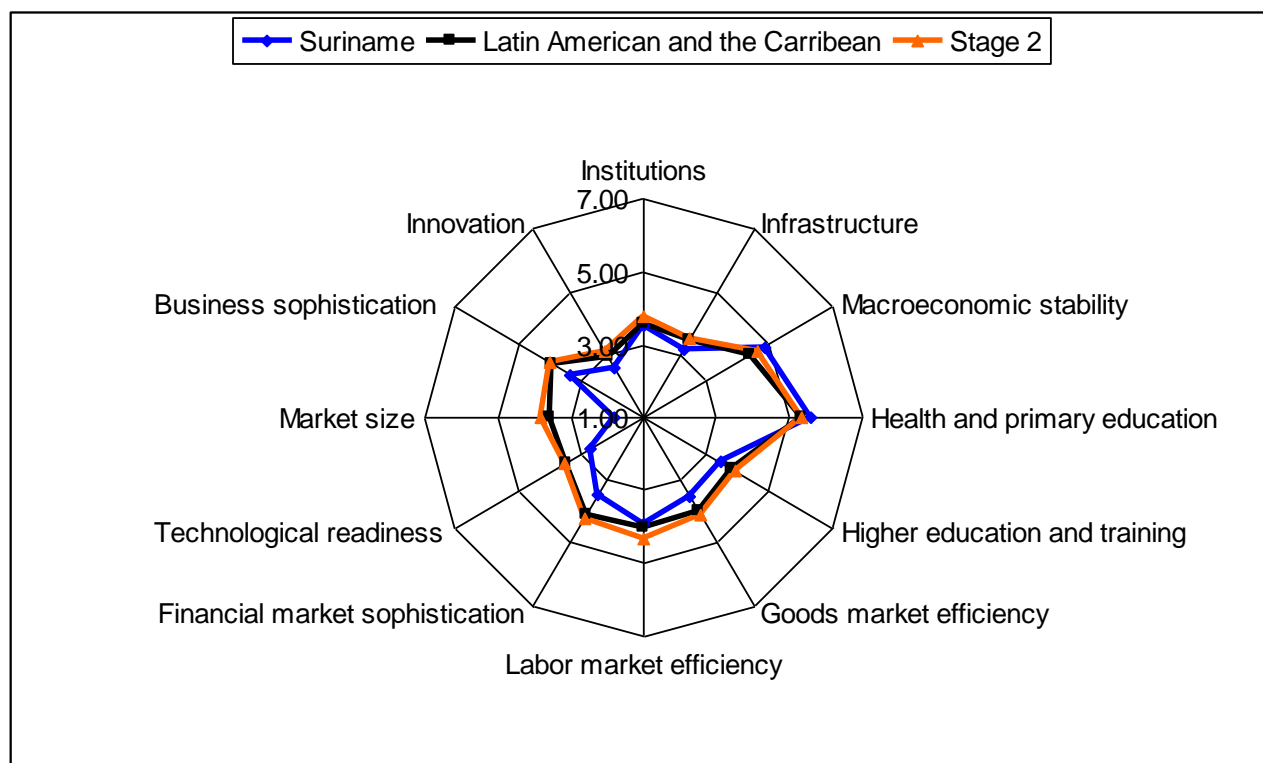
<sup>8</sup> The budget was evened out in 2008 as a result of increased spending and reduced revenue.

## Measuring the Competitiveness of Selected CARICOM Countries

The quality and availability of infrastructure has registered the largest improvement over the past year, moving up by 13 positions to 86<sup>th</sup> among the pillars of the GCI. Nevertheless, the quality of infrastructure in the two most important modes of transport—ports and airports—remains underdeveloped, at 97<sup>th</sup> and 115<sup>th</sup>, respectively.

Although the institutional environment in Suriname is in line with the regional average, addressing some specific issues would facilitate business operations. First of all, regulation needs to be streamlined to make it less burdensome for business (122<sup>nd</sup>), transparency of policymaking increased (124<sup>th</sup>), and the legal framework strengthened to allow for challenging regulations and settling disputes among businesses (125<sup>th</sup> and 112<sup>th</sup>, respectively). When asked about the most problematic factors for doing business, Surinamese business leaders highlighted inefficient government bureaucracy as the most important issue by far, with 22.6 percent of all responses, followed by access to finance (11.5 percent), and corruption (11.1 percent) (see Figure 10).

**Figure 9: Suriname’s Competitiveness at a Glance: Comparisons with the Latin American and the Caribbean and Stage 2 Averages**



Source: WEF, 2009

Against these positive developments a number of serious shortcomings related to other areas captured by the GCI persist in Suriname. These will have to be addressed for the country to move ahead.

The most significant challenge for Suriname is to restore the efficiency of the goods, financial, and labor markets. Suriname performs poorly in all three areas, ranked 123<sup>rd</sup>, 112<sup>th</sup>, and 108<sup>th</sup>, respectively. Given the small size of the country, it is not surprising that domestic competition is not intense (ranked 124<sup>th</sup>); what is worrying, however, is that it is not compensated with foreign competition (111<sup>th</sup>), which could significantly contribute to increasing the efficiency of the country’s business sector. Domestic competition is limited to relatively few companies that dominate markets

## Measuring the Competitiveness of Selected CARICOM Countries

for goods and services (90<sup>th</sup>), a situation that is aggravated by a largely ineffective anti-monopoly policy (120<sup>th</sup>). At the same time, the entry of new businesses that could increase competitive pressure is heavily restricted through administrative and regulatory barriers to entry. Moreover, the country is protected from foreign competition by barriers to trade (84<sup>th</sup>) and to entry of foreign direct investment (127<sup>th</sup>), which has limited the country's ability to fully leverage its significant potential for attracting FDI.

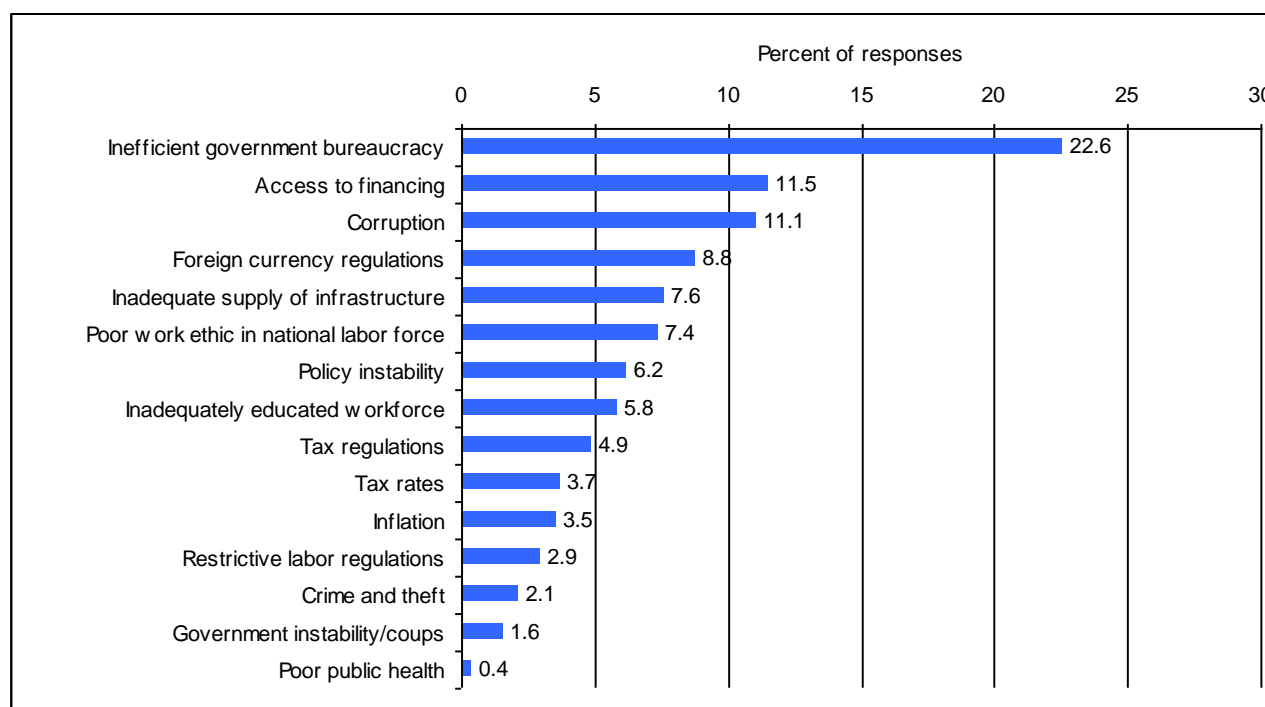
Reforming labor markets would require alleviating the country's significant and persistent rigidities. Presently, it is cumbersome and costly to hire and fire employees in Suriname, and the relationships between labor and employers are prone to conflict. Moreover, meritocracy has not taken root in the country's business culture, resulting in a loss of efficiency of employees. Measures to cut down on widespread nepotism and favoritism when deciding on management positions (111<sup>th</sup>) and to foster female participation in the labor force (103<sup>rd</sup>) could significantly improve the availability of skilled and motivated talent to business.

The two areas where Suriname lags behind its peers by the highest margin are market size, where it is ranked 128<sup>th</sup>, and technological readiness (115<sup>th</sup>). As a small low-income economy, the domestic market size is small in Suriname. Over the longer term, further developing trade in goods and services would benefit the country because it would intensify competition among domestic businesses and enable them to realize economies of scale, hence partially offsetting the disadvantages stemming from the country's small domestic market size. In the shorter term, fostering technological readiness could provide additional advantages. Given Suriname's stage of development and the need to diversify the economy to make it more resilient to commodity price variations, it is important that the country fully makes use of existing technologies for increased development. The country's business sector does not appear to leverage the latest technologies for competitiveness through licensing or FDI, although it does somewhat better with respect to using ICT.

To sum up, a viable competitiveness strategy for Suriname will have to focus on improving the efficiency of goods, financial, and labor markets in addition to fostering technological innovation, which will become increasingly important given Suriname's level of development.

## Measuring the Competitiveness of Selected CARICOM Countries

Figure 10: Most Problematic Factors for Doing Business in Suriname



The question asked to the firms was: “Select among the above 15 constraints the five most problematic factors for doing business in your country.”

Source: WEF, Executive Opinion Survey 2008, 2009.

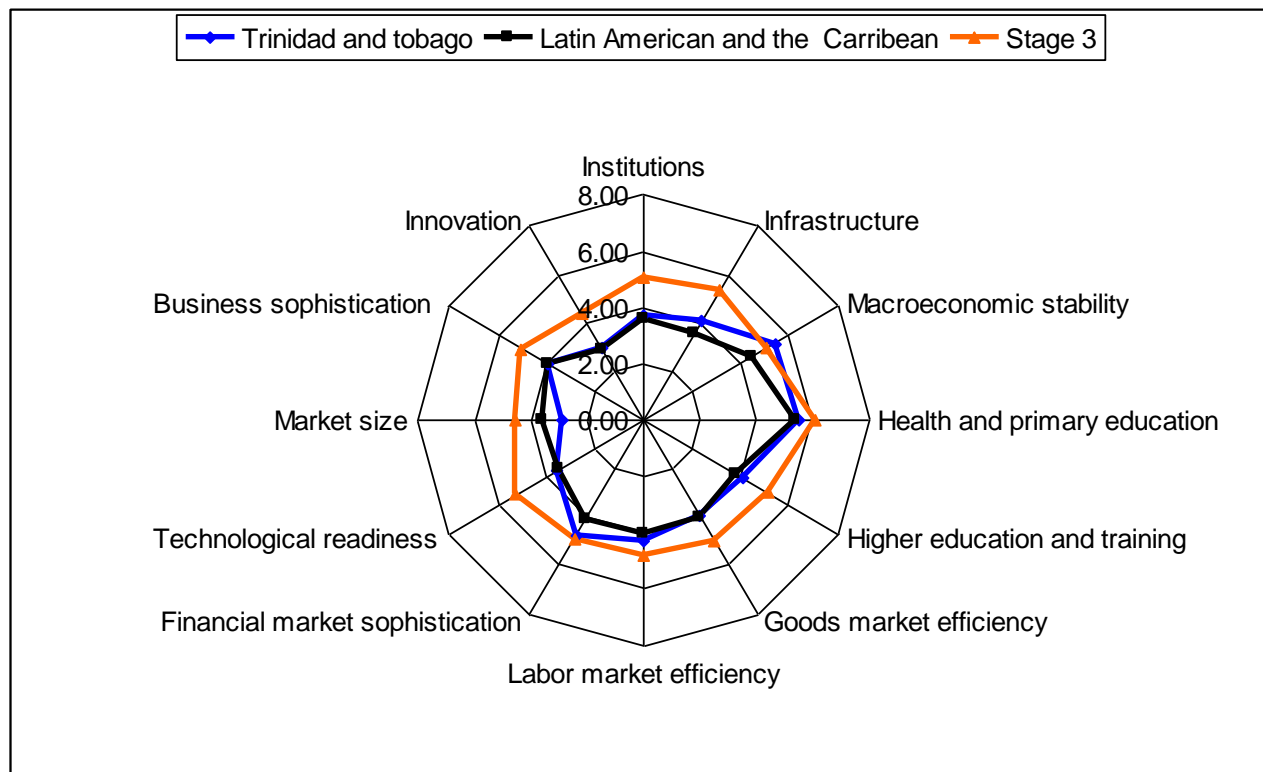
### Trinidad and Tobago

Trinidad and Tobago features at 86<sup>th</sup> position, regaining some ground (6 positions) compared with last year, after an 8 place drop between 2007 and 2008. At the same time, the country moved up to the third most advanced innovation stage of development, placing it now in the same group as comparator economies Cyprus and Malta. Trinidad and Tobago’s economy is highly dependent on the energy sector, which accounts for almost half of its GDP (IMF, 2009a) and is primarily responsible for the country’s impressive economic performance between 2000 and 2008 (averaging a growth rate of 7.6 percent) (IMF, 2009b). During the same period, GDP per capita almost doubled (IMF, 2009b), while unemployment and government debt sharply decreased. Notwithstanding these positive developments, the country’s competitiveness fundamentals require further strengthening to ensure sustainable growth over the long term.

In this sense, while Trinidad and Tobago displays strong performance in macroeconomic stability (23<sup>rd</sup>), financial sophistication (34<sup>th</sup>), and to a lesser extent, health and primary education (62<sup>nd</sup>) and labor market efficiency (81<sup>st</sup>) with respect to the regional and stage 3 averages, it trails behind in a number of important areas, including technological readiness (67<sup>th</sup>), business sophistication (75<sup>th</sup>), and goods market efficiency (92<sup>nd</sup>). The country also outperforms the regional average for the quality of its infrastructure (54<sup>th</sup>), with an efficient and extensive road (56<sup>th</sup>) and air transport network (46<sup>th</sup>) (see Figure 11).

## Measuring the Competitiveness of Selected CARICOM Countries

Figure 11: Trinidad and Tobago's Competitiveness at a Glance: Comparisons with the Latin American and the Caribbean and Stage 3 Averages

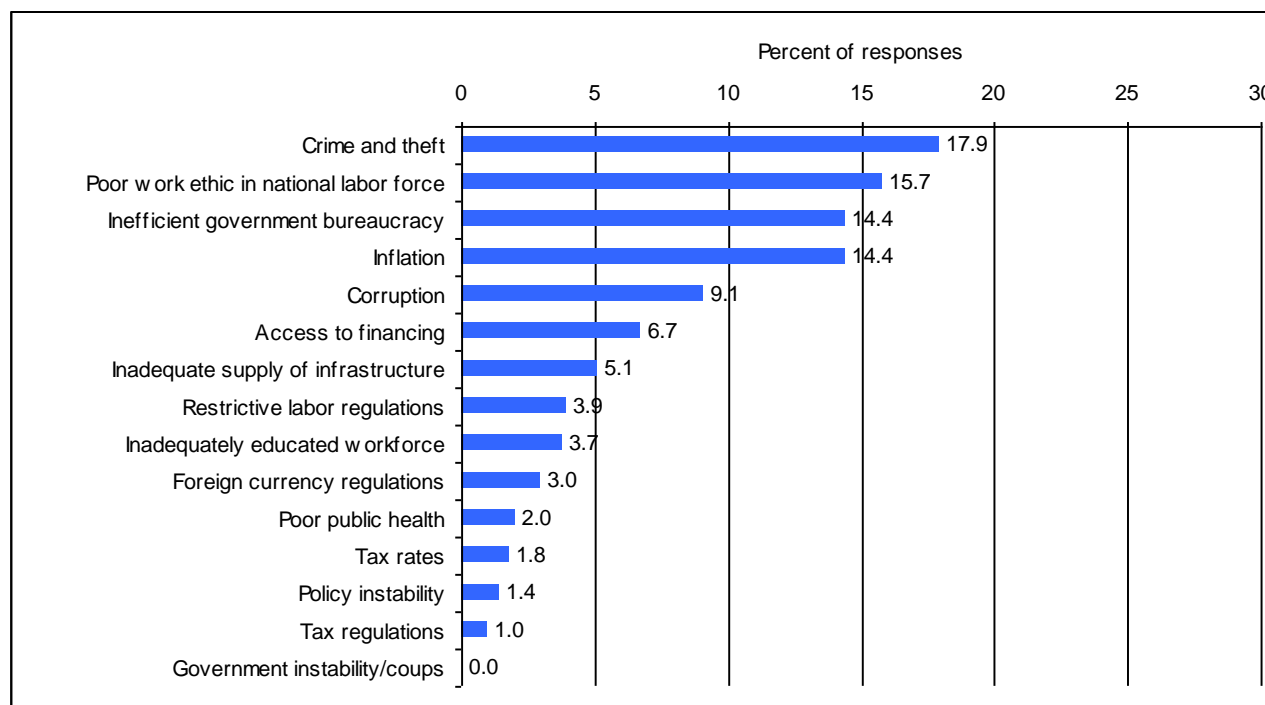


Source: WEF, 2009

Trinidad and Tobago's remarkable macroeconomic stability places the country in first place among the five Caribbean comparators, driven by fairly high government budget surplus (6.5 percent of GDP, ranked 14th) and national saving rates (36.8 percent of GDP, ranked 18th) in 2008. Notwithstanding the overall positive macroeconomic performance, the country suffers from double digit inflation (12 percent, ranked 104th), as reflected by Figure 12, which lists inflation as one of the most problematic factors for doing business (see Figure 12) according to the national business community. This is mainly due to the continuous cash inflows from the energy sector into the banking system over time, which resulted in excess liquidity and price increases. Although the government has been trying to fight inflation with strict monetary policies, its efforts have not yet been very successful in lowering inflation rates (IMF, 2009a).

## Measuring the Competitiveness of Selected CARICOM Countries

Figure 12: Most Problematic Factors for Doing Business in Trinidad and Tobago



The question asked to the firms was: “Select among the above 15 constraints the five most problematic factors for doing business in your country.”

Source: WEF, Executive Opinion Survey 2008, 2009.

Among Trinidad and Tobago’s competitive advantages, one must also mention the sophistication and trustworthiness of its financial markets (34<sup>th</sup>). Specifically, the country ranks 23<sup>rd</sup> for the soundness of its banks, 18<sup>th</sup> in the indexes measuring legal rights and the strength of investor protection, 52<sup>nd</sup> for financial market sophistication, and 43<sup>rd</sup> for the restrictions on capital flows.

This bodes well both in terms of confronting the current global economic crisis and of supporting growth in the longer term.

Furthermore, Trinidad and Tobago displays satisfactory levels of technological readiness (67<sup>th</sup>), with the best regional performance in the FDI and technology transfer variable (34<sup>th</sup>) and universal mobile telephone (35<sup>th</sup>) penetration (113 per 100 people).

The relatively small market size (102<sup>nd</sup>) and the country’s already mentioned dependency on energy exports are reasons for concern that prompted the government to formulate in 2007 a national strategy aimed at the diversification of the economy: the so called *Vision 2020*. This plan aims at “fueling, with public funds and revenues from the energy industry, other areas as well as infrastructure to diversify the economy” (IMF, 2009a).

Furthermore, the quality of the public institutional environment, at 85<sup>th</sup>, shows much room for improvement. In particular, crime and violence, corruption, and inefficient government bureaucracy appear to be particularly problematic, as shown by the poor rankings displayed by the country in public trust in politicians (100<sup>th</sup>), favoritism in decisions of government official (107<sup>th</sup>), business costs of crime and violence (128<sup>th</sup>), and low reliability of police services (117<sup>th</sup>). On a similar note, goods and labor markets present worrisome elements of rigidity at 92<sup>nd</sup> and 81<sup>st</sup>,



## Measuring the Competitiveness of Selected CARICOM Countries

respectively. Ineffective anti-monopoly policy (104th), the long time required to start a business, which takes up to 43 days (105th), and the burden of customs procedures (127th) reduce the efficiency of the good markets, while low cooperation in labor–employer relations (129th), little flexibility in wage determination (83rd), high firing costs (67 weeks of salary, ranked 92nd), and an insufficient participation of women in the labor force (82nd) prevent the labor market from allocating resources to their most efficient use.

Last but not least, the country has a long way to go to catch up with the other innovation-driven economies in innovation potential, now ranked a disappointing 87<sup>th</sup>, as compared to Malta and Cyprus, which are ranked 53<sup>rd</sup> and 35<sup>th</sup>, respectively. Indeed Trinidad and Tobago is ranked 131<sup>st</sup> for the capacity for innovation of its business sector, 117<sup>th</sup> for the extent to which government procurement decisions result in technological innovation, and 98<sup>th</sup> for company spending on R&D. Considering that the country's competitiveness now depends greatly on its sophistication and innovation factors, this is an area of crucial focus going ahead. Similarly, the country largely lags behind other stage 3 economies in the quality of health and primary education (62<sup>nd</sup>) and higher education and training (63<sup>rd</sup>).

Going into the future, Trinidad and Tobago's main challenges for increased competitiveness are related to diversifying its economy, increasing the flexibility of its goods and labor markets, and innovation potential, while maintaining stable macroeconomic performance, improving the institutional environment, and enhancing the social and education indicators.

## Conclusions

This paper assessed the competitiveness performance of the five CARICOM countries included in *The Global Competitiveness Report 2009-2010*: Barbados, Guyana, Jamaica, Suriname, and Trinidad and Tobago. Using the GCI as the key methodological tool, the countries were compared with one another and benchmarked against relevant comparator economies and regions.

Of the five countries analyzed, only Barbados outperforms the Latin America and Caribbean average in terms of competitiveness, while all other countries place in the bottom half of the GCI sample of 133 economies. Over the past three years, three of them have realized important progress in competitiveness, with a consequent improvement in the rankings. On a less positive note, two countries have seemed to lose some ground, namely Jamaica, which lost a few places and, to a lesser extent, Trinidad and Tobago, which maintained a roughly stable performance over the past two years. Thus, although these CARICOM countries have suffered from the fallout of the global financial and economic crisis, for the most part their competitiveness has not been significantly affected by these events. In other words, for the most part, the crisis has not adversely affected their longer-term productive potential.

Overall, the analysis shows that despite their common geographic location and small size, the countries display markedly different competitiveness characteristics. Firstly, they span across all stages of development considered by the GCI, which implies significantly different priorities for enhancing competitiveness. Secondly, they present very different competitiveness profiles with diverging strengths and problematic areas. Therefore, the strategies for enhancing competitiveness will vary across the region, from country to country, and include policies and actions tailored to each country's specificities and competitiveness diagnostics. In this context, the GCI results, by highlighting strengths and weaknesses at both the national and regional levels, help decision makers identify and learn from best practices in selected dimensions of competitiveness, providing a useful

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tool for improving the national competitiveness environment and for reinforcing long-term growth fundamentals going forward.

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## Annex 1: Structure of the Global Competitiveness Index 2009–2010

This annex presents the structure of the Global Competitiveness Index 2009–2010 (GCI).

The numbering of the variables matches the numbering of the Data Tables published in *The Global Competitiveness Report 2009-2010*. The number preceding the period indicates to which pillar the variable belongs (e.g., variable 1.01 belongs to the 1st pillar, variable 12.04 belongs to the 12th pillar).

The hard data indicators used in the GCI are normalized on a 1-to-7 scale to align them with the Executive Opinion Survey's results. <sup>a</sup>

Those variables that are followed by the symbol <sup>1/2</sup> enter the GCI in two different places. To avoid double counting, we give them a half-weight in each place by dividing their value by 2 when computing the aggregate score for the two categories in which they appear. <sup>b</sup>

The percentage next to each category represents this category's weight within its immediate parent category. The computation of the GCI is based on successive aggregations of scores, from the variable level (i.e., the lowest level) all the way up to the overall GCI score (i.e., the highest level), using the weights reported below. For example, the score a country achieves in the 9<sup>th</sup> pillar accounts for 17 percent of this country's score in the *Efficiency enhancers* subindex. Similarly, the score achieved on the subpillar *Networks and supporting industries* accounts for 50 percent of the score of the 11<sup>th</sup> pillar. Reported percentages are rounded to the nearest integer, but exact figures are used in the calculation of the GCI.

Unlike for the lower levels of aggregation, the weight put on each of the three subindexes (Basic requirements, Efficiency enhancers, and Innovation and sophistication factors) is not fixed. It depends on each country's stage of development, as discussed in the text. <sup>c</sup>

	<b>Weight (%) within immediate parent category</b>
<b>Basic requirements</b>	
<b>1st pillar: Institutions .....</b>	<b>25%</b>
<b>A. Public institutions .....</b>	<b>75%</b>
1. Property rights.....	20%
1.01 Property rights	
1.02 Intellectual property protection <sup>1/2</sup>	
2. Ethics and corruption.....	20%
1.03 Diversion of public funds	
1.04 Public trust of politicians	
3. Undue influence.....	20%
1.05 Judicial independence	
1.06 Favoritism in decisions of government officials	
4. Government inefficiency .....	20%
1.07 Wastefulness of government spending	
1.08 Burden of government regulation	
1.09 Efficiency of legal framework in settling disputes	
1.10 Efficiency of legal framework in challenging regulation	
1.11 Transparency of government policymaking	

## Measuring the Competitiveness of Selected CARICOM Countries

5. Security.....	20%
1.12 Business costs of terrorism	
1.13 Business costs of crime and violence	
1.14 Organized crime	
1.15 Reliability of police services	
<b>B. Private institutions .....</b>	<b>25%</b>
1. Corporate ethics.....	50%
1.16 Ethical behavior of firms	
2. Accountability .....	50%
1.17 Strength of auditing and reporting standards	
1.18 Efficacy of corporate boards	
1.19 Protection of minority shareholders' interests	
<b>2nd pillar: Infrastructure .....</b>	<b>25%</b>
<b>A. General infrastructure .....</b>	<b>50%</b>
2.01 Quality of overall infrastructure	
<b>B. Specific infrastructure .....</b>	<b>50%</b>
2.02 Quality of roads	
2.03 Quality of railroad infrastructure	
2.04 Quality of port infrastructure	
2.05 Quality of air transport infrastructure	
2.06 Available seat kilometers (hard data)	
2.07 Quality of electricity supply	
2.08 Telephone lines (hard data)	
<b>3rd pillar: Macroeconomic stability .....</b>	<b>25%</b>
3.01 Government budget balance (hard data)	
3.02 National savings rate (hard data)	
3.03 Inflation (hard data) <sup>d</sup>	
3.04 Interest rate spread (hard data)	
3.05 Government debt (hard data)	
<b>4th pillar: Health and primary education .....</b>	<b>25%</b>
<b>A. Health.....</b>	<b>50%</b>
4.01 Business impact of malaria <sup>e</sup>	
4.02 Malaria incidence (hard data) <sup>e</sup>	
4.03 Business impact of tuberculosis <sup>e</sup>	
4.04 Tuberculosis incidence (hard data) <sup>e</sup>	
4.05 Business impact of HIV/AIDS <sup>e</sup>	
4.06 HIV prevalence (hard data)	
4.07 Infant mortality (hard data)	
4.08 Life expectancy (hard data)	
<b>B. Primary education.....</b>	<b>50%</b>
4.09 Quality of primary education	
4.10 Primary enrollment (hard data)	
4.11 Education expenditure (hard data) <sup>1/2</sup>	

## Measuring the Competitiveness of Selected CARICOM Countries

### Efficiency enhancers

#### 5th pillar: Higher education and training ..... 17%

##### A. Quantity of education ..... 33%

- 5.01 Secondary enrollment (hard data)
- 5.02 Tertiary enrollment (hard data)
- 4.11 Education expenditure (hard data) <sup>1/2</sup>

##### B. Quality of education..... 33%

- 5.03 Quality of the educational system
- 5.04 Quality of math and science education
- 5.05 Quality of management schools
- 5.06 Internet access in schools

##### C. On-the-job training ..... 33%

- 5.07 Local availability of specialized research and training services
- 5.08 Extent of staff training

#### 6th pillar: Goods market efficiency ..... 17%

##### A. Competition ..... 67%

- 1. Domestic competition.....variable <sup>f</sup>
  - 6.01 Intensity of local competition
  - 6.02 Extent of market dominance
  - 6.03 Effectiveness of anti-monopoly policy
  - 6.04 Extent and effect of taxation <sup>1/2</sup>
  - 6.05 Total tax rate (hard data) <sup>1/2</sup>
  - 6.06 Number of procedures required to start a business (hard data) <sup>g</sup>
  - 6.07 Time required to start a business (hard data) <sup>g</sup>
  - 6.08 Agricultural policy costs
- 2. Foreign competition .....variable <sup>f</sup>
  - 6.09 Prevalence of trade barriers
  - 6.10 Trade-weighted tariff rate (hard data)
  - 6.11 Prevalence of foreign ownership
  - 6.12 Business impact of rules on FDI
  - 6.13 Burden of customs procedures
  - 10.04 Imports as a percentage of GDP (hard data)

##### B. Quality of demand conditions ..... 33%

- 6.14 Degree of customer orientation
- 6.15 Buyer sophistication

#### 7th pillar: Labor market efficiency ..... 17%

##### A. Flexibility ..... 50%

- 7.01 Cooperation in labor-employer relations
- 7.02 Flexibility of wage determination
- 7.03 Rigidity of employment (hard data)
- 7.04 Hiring and firing practices
- 6.04 Extent and effect of taxation <sup>1/2</sup>
- 6.05 Total tax rate (hard data) <sup>1/2</sup>
- 7.05 Firing costs (hard data)

## Measuring the Competitiveness of Selected CARICOM Countries

- B. Efficient use of talent ..... 50%**
  - 7.06 Pay and productivity
  - 7.07 Reliance on professional management <sup>1/2</sup>
  - 7.08 Brain drain
  - 7.09 Female participation in labor force (hard data)

### 8th pillar: Financial market sophistication ..... 17%

- A. Efficiency ..... 50%**
  - 8.01 Financial market sophistication
  - 8.02 Financing through local equity market
  - 8.03 Ease of access to loans
  - 8.04 Venture capital availability
  - 8.05 Restriction on capital flows
  - 8.06 Strength of investor protection (hard data)
- B. Trustworthiness and confidence ..... 50%**
  - 8.07 Soundness of banks
  - 8.08 Regulation of securities exchanges
  - 8.09 Legal rights index (hard data)

### 9th pillar: Technological readiness..... 17%

- 9.01 Availability of latest technologies
- 9.02 Firm-level technology absorption
- 9.03 Laws relating to ICT
- 9.04 FDI and technology transfer
- 9.05 Mobile telephone subscriptions (hard data)
- 9.06 Internet users (hard data)
- 9.07 Personal computers (hard data)
- 9.08 Broadband Internet subscribers (hard data)

### 10th pillar: Market size ..... 17%

- A. Domestic market size..... 75%**
  - 10.01 Domestic market size index (hard data) <sup>h</sup>
- B. Foreign market size ..... 25%**
  - 10.02 Foreign market size index (hard data) <sup>i</sup>

## Innovation and sophistication factors

### 11th pillar: Business sophistication ..... 50%

- A. Networks and supporting industries ..... 50%**
  - 11.01 Local supplier quantity
  - 11.02 Local supplier quality
  - 11.03 State of cluster development
- B. Sophistication of firms' operations and strategy ..... 50%**
  - 11.04 Nature of competitive advantage
  - 11.05 Value chain breadth
  - 11.06 Control of international distribution
  - 11.07 Production process sophistication
  - 11.08 Extent of marketing



## Measuring the Competitiveness of Selected CARICOM Countries

- 11.09 Willingness to delegate authority
- 7.08 Reliance on professional management <sup>1/2</sup>

### 12th pillar: Innovation .....50%

- 12.01 Capacity for innovation
- 12.02 Quality of scientific research institutions
- 12.03 Company spending on R&D
- 12.04 University-industry research collaboration
- 12.05 Government procurement of advanced technology products
- 12.06 Availability of scientists and engineers
- 12.07 Utility patents (hard data)
- 1.02 Intellectual property protection <sup>1/2</sup>

## Notes

- a The standard formula for converting hard data is the following:

$$6 \times \frac{(\text{countryscore} - \text{sample minimum})}{(\text{sample maximum} - \text{sample minimum})} + 1.$$

The sample minimum and sample maximum are, respectively, the lowest and highest country scores in the sample of countries covered by the GCI. In some instances, adjustments were made to account for extreme outliers. For those hard data variables for which a higher value indicates a worse outcome (e.g., disease incidence, government debt), we rely on a normalization formula that, in addition to converting the series to a 1-to-7 scale, reverses it, so that 1 and 7 still correspond to the worst and best possible outcomes, respectively:

$$-6 \times \frac{(\text{countryscore} - \text{sample minimum})}{(\text{sample maximum} - \text{sample minimum})} + 7.$$

- b For those groups of variables that contain one or several half-weight variables, country scores for those groups are computed as follows:

$$\frac{(\text{sum of scores on full weight variables}) + \frac{1}{2} \times (\text{sum of scores on half weight variables})}{(\text{count of full weight variables}) + \frac{1}{2} \times (\text{count of half weight variables})}$$

- c As described in the chapter, the weights are the following:

Weights	Factor-driven stage (%)	Efficiency-driven stage (%)	Innovation-driven stage (%)
Basic requirements	60	40	20
Efficiency enhancers	35	50	50
Innovation and sophistication factors	5	10	30

- d In order to capture the idea that both high inflation and deflation are detrimental, inflation enters the model in a U-shaped manner as follows: for values of inflation between 0.5 and 2.9 percent, a country receives the highest possible score of 7. Outside this range, scores decrease linearly as they move away from these values.
- e The impact of malaria, tuberculosis, and HIV/AIDS on competitiveness depends not only on their respective incidence rates, but also on how costly they are for business. Therefore, in order to estimate the impact of each of the three diseases, we combine its incidence rate with the Survey question on its

## Measuring the Competitiveness of Selected CARICOM Countries

perceived cost to businesses. To combine these data we first take the ratio of each country's disease incidence rate relative to the highest incidence rate in the whole sample. The inverse of this ratio is then multiplied by each country's score on the related Survey question. This product is then normalized to a 1-to-7 scale. Note that countries with zero reported incidence receive a 7, regardless their scores on the related Survey question.

- f** The *Competition* subpillar is the weighted average of two components: *Domestic competition* and *Foreign competition*. In both components, the included variables provide an indication of the extent to which competition is distorted. The relative importance of these distortions depends on the relative size of domestic versus foreign competition. This interaction between the domestic market and the foreign market is captured by the way we determine the weights of the two components. Domestic competition is the sum of consumption (C), investment (I), government spending (G), and exports (X), while foreign competition is equal to imports (M). Thus we assign a weight of  $(C+I+G+X)/(C+I+G+X+M)$  to *Domestic competition* and a weight of  $M/(C+I+G+X+M)$  to *Foreign competition*.
- g** Variables 6.06 and 6.07 combine to form one single variable.
- h** The size of the domestic market is constructed by taking the natural log of the sum of the gross domestic product valued at PPP plus the total value (PPP estimates) of imports of goods and services, minus the total value (PPP estimates) of exports of goods and services. Data are then normalized on a 1-to-7 scale. PPP estimates of imports and exports are obtained by taking the product of exports as a percentage of GDP and GDP valued at PPP. The underlying data are reported in the Data Tables section (see tables 10.03, 10.04, and 10.05).
- i** The size of the foreign market is estimated as the natural log of the total value (PPP estimates) of exports of goods and services, normalized on a 1-to-7 scale. PPP estimates of exports are obtained by taking the product of exports as a percentage of GDP and GDP valued at PPP. The underlying data are reported in the Data Tables.

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