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Jamaica
Country Economic Memorandum
Unlocking Growth

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ABBREVIATIONS AND ACRONYMS

ACP	African, Caribbean and Pacific Group	JCTU	Jamaican Confederation of Trade Unions
AGD	Accountant General's Department	JHTA	Jamaica Hotel and Tourist Association
BoJ	Bank of Jamaica	JSLC	Survey of Living Conditions
CAFTA	US-Central American Free Trade Agreement	JSLC	Jamaica Survey of Living Conditions
CARIBCAN	The Caribbean-Canada Trade Agreement	JamPro	Formerly Jamaica Trade and Investment
CBI	Caribbean Basin Initiative	KMA	Kingston Metropolitan Area
CDF	Constituency Development Funds	LAC	Latin America and the Caribbean
CEM	Country Economic Memorandum	LFS	Jamaica Labor Force Survey
CIT	Corporate Income Tax	MCC	Management Coordination Committee
CXC	Caribbean Examinations Council	MFPS	Ministry of Finance and the Public Service
DBJ	Development Bank of Jamaica	MOH	Ministry of Health
ECLAC	Economic Commission for Latin America and the Caribbean	MPs	Members of Parliament
EFZs	Export Free Zones	NAFTA	North American Free Trade Agreement
FAA	Financial Administration and Audit Act	NCC	National Contracts Commission
FAO	Food and Agricultural Organization	NCST	National Commission on Science and Technology
FDI	Foreign Direct Investment	NEPA	National Environmental Planning Agency
FIAS	Foreign Investment Advisory Service	NHT	National Housing Trust
FPC	Fiscal Policy Committee	NIP	National Industry Policy
FPMU	Fiscal Policy Management Unit	OECD	Organization for Economic Co-operation and Development
FRF	Fiscal Responsibility Framework	PATH	Program for Advancement of Health and Education
GCI	Global Competitiveness Index	PBMA	Public Bodies Management and Accountability Act
GCT	General Consumption Tax	PED	Public Enterprise Division
GEF	Global Environment Facility	PFM	Public Financial Management
GOJ	Government of Jamaica	PIOJ	Planning Institute of Jamaica
HEART	National Training Institute	PNP	People's National Party
HISEP	High School Equivalency Program	PPD	Public-Private Dialogue

IADB	Inter-American Development Bank	PSTU	Public Sector Transformation Unit
ICS	Investment Climate Survey	REDI	Rural Economic Development Initiative
ICT	Information and Communication Technologies	SCT	Special Consumption Tax
		SME	Small and Medium Enterprise
IFRS	International Financial Reporting Standards	SRC	Scientific Research Council
		STATIN	Statistical Institute of Jamaica
ILO	International Labor Office	TPDCO	Tourism Product Development Company
IPSAS	International Public Sector Accounting Standards	UDC	Urban Development Corporation
JAMVAC	Jamaica Vacations Limited	UNODC	United Nations Office on Drugs and Crime
JBS	Jamaica Bureau of Standards	UNWTO	UN's World Tourism Organization
JTB	Jamaica Tourist Board	USDA	US Department of Agriculture
JCCP	Jamaica Cluster Competitiveness Project	WTO	World Trade Organization

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EXECUTIVE SUMMARY

A basis for optimism. This Country Economic Memorandum assesses the key causes that have stalled Jamaica's economy over the past four decades and presents recommendations to unlock its growth potential. There is a basis for optimism in that Jamaica has had political stability, high rates of private investment, significant reduction of poverty in rural and urban areas, and improved income distribution. Nonetheless, this report shows that, since independence in 1962, long-term economic growth has been disappointing and underperformed most other countries.

Jamaica's disappointing economic performance is a case of low productivity. While Total Factor Productivity (TFP) in Jamaica was growing above the world and regional averages in the 1960s, since the 1970s performance collapsed despite high investment. This has been attributed to the spread of low productivity across the economy. Estimations for 1992-2008 show that labor productivity was negative in eight of 10 sectors and it was positive but negligible in the sectors for communication services and manufacturing and transport. Jamaica's TFP per worker also lags significantly behind most other countries in the LAC region. Understanding and acting on the factors behind Jamaica's low productivity will go a long way in unlocking growth potential and creating conditions for greater reductions in poverty.

Jamaica's poor growth performance and low productivity has three core 'binding constraints' amid many contributing factors. There are many potential obstacles to growth. The non-exhaustive list includes frequent natural disasters, low productivity of capital, loss of competitiveness, distortions from tax incentives, limited space for productive public spending due to high public debt, inadequate human capital, migration of skilled labor, the high cost of crime, and lapses in governance. The leading binding constraints are (i) crime, (ii) deficient human capital, and (iii) fiscal distortions (tax incentives and waivers as well as government's budget management policies and practices). The most significant growth impact will come from removing these key growth obstacles.

- **Crime is the most evident and severe problem in Jamaica**. Once crime is established, it is difficult to overcome. It severely limits future growth and leads to a vicious circle as low growth further increases crime and higher crime rates further reduce growth. Crime erodes social stability and makes rule of law a critical area of concern. It has a negative effect on human capital, creating incentives for migration among the most skilled, educated, and entrepreneurial citizens. It constrains business expansion and diverts resources from productive activities to crime protection. Because of crime and other structural conditions, investment in Jamaica tends to flow into isolated activities. All-inclusive resorts, mining, and Export Free Zones are the best examples of this 'enclave' development model with its low spillovers (while tourists avoid crime-ridden areas, their dollars remain in the resort; mining communities and international businesses are similarly isolated from the *greater* Jamaica). A 2007 United Nations–World Bank study illustrates the link between growth and lower crime rates. It states that Jamaica could experience an

annual increase of 5.4 percent in per capita GDP, if it cut crime rates to the levels prevailing in Costa Rica.

- **The available evidence shows that Jamaica has a low level of human capital, with poor quality of education and insufficient training of its labor force, despite the country's efforts**. From 1995 to 2008, Jamaica saw an increase in enrollment rates in both secondary and tertiary level education, however existing quality indicators put Jamaica below the Caribbean region average. There is also evidence that human capital is a scarce factor because private returns to schooling and private returns to training are extremely high (with higher wages to be found outside of Jamaica). In 2008, 72 percent of the labor force indicated a lack of job training. The combination of poor education and low levels of training suggests an overall low quality of the human capital that results in a negative impact on the level and growth of productivity. The migration rate of skilled workers has also increased because of difficult living and business conditions (including crime and government policies). In general, it is believed that the people who migrate are more able, more entrepreneurial and less risk averse; the country therefore loses very important assets for productivity, innovation and entrepreneurship.

- **Jamaica's fiscal policies and budget-management practices and policies constrain growth.** Inconsistent, complex tax policy with numerous exemptions and special privileges has reduced tax revenue by an estimated 20 percent, significantly reducing the government's spending capacity. The complex system of taxes and incentives also creates distortions for the allocation of capital and lowers investment productivity. High debt-servicing costs and a high wage bill have reduced the fiscal space available for productivity enhancing public spending, including public investment that is complementary to private investment and expenditure on education and health. Underlying institutional and political economy factors are major impediments to strengthening fiscal and expenditure policy and management of public finances.

Jamaica has an opportunity to grow much faster than it had in the past and the key to unlock this potential is within its reach: turning its high investment into high productivity. Jamaica has to do this with limited fiscal resources and an ongoing program of fiscal consolidation. Recent fiscal reforms are necessary but not sufficient for increasing growth. There is no silver bullet for all Jamaica's problems, or any single, unique binding constraint whose removal would solve them. This will require actions on several fronts that have a direct bearing on total factor productivity and the efficiency of investment. These include addressing crime as a national priority, reducing tax distortions and increasing labor force skills. Jamaica can consider complementing the ongoing fiscal consolidation program with reforms in these three areas. These reform actions, if quickly implemented, will scale up productivity in traditional sectors and encourage investment in new sectors. It is time this be done if Jamaica is to avoid losing another decade of growth and if the country is to make a clean break from the economic and social fragility of the past.

Two of Jamaica's best performing sectors provide examples of how advances are possible once the constraints are resolved: tourism and food-processing. The improved

environment can stimulate productivity in sectors where Jamaica has a comparative advantage, as well as encourage the emerging new activities which have been identified through value chain analysis in the food processing and tourism sectors. A meaningful reduction in crime will make tourists feel safe to move out of resorts enclaves and enjoy new or revived tourist venues for site-seeing, entertainment, shopping, and dining. Improved labor and managerial skills can make the tourism sector more competitive in the region. Jamaica already enjoys an international market for its food products. Improvements throughout the Jamaican processed foods supply chain, including agriculture, labor, transportation, food safety certification, and marketing will quickly advance this sector.

OVERVIEW AND POLICY OPTIONS

1.   **The primary objective of this report is to identify the main obstacles to longer-term growth in Jamaica.** [1] The report takes a holistic approach, examining a large set of economic and social factors that may be hindering growth and filtering them through a growth diagnostic analysis to narrow the focus to those that constrain growth the most. Building on the results of the growth diagnostic analysis, the report then discusses each key obstacle and identifies possible reform scenarios to unlock growth in Jamaica. The report also examines how the country might further accelerate growth through private sector development.

2.   **The findings of this study indicate that Jamaica's disappointing economic performance is traceable to low productivity** caused by (i) deficiencies in human capital and entrepreneurship that are due to high migration rates and to deficiencies in the quality of education and training offered to the labor force, among other factors, (ii) a high rate of crime, and (iii) distortionary tax incentives combined with "enclave" development that does not spill over to the rest of the economy. The potential for accelerating future growth rests primarily on the ability of the country to remove or at least ease these key growth obstacles. Once they are removed, Jamaica can further accelerate growth by enhancing private sector development. A matrix of policy options keyed to the obstacles mentioned above can be found at the end of this overview (table 4).

3.   **The report has three parts**. The first analyzes historical growth performance and poverty reduction to provide a long-term view of Jamaica's economic development (chapters 1 and 2). A comprehensive growth diagnostic analysis is then applied to identify key obstacles to growth (chapter 3). Building on these findings, the second part of the report focuses on labor markets (chapter 4) and public financial management (chapter 5) with the objective of identifying the causes of the low labor productivity and fiscal distortions that hamper growth in Jamaica. Crime has been largely left out of the report because it has been heavily studied and because it is still too early to assess the impact of recently initiated crime-prevention projects. Part II also analyzes the impact of recent reforms undertaken to alleviate obstacles to growth linked to human capital and fiscal distortions (chapter 6). Part III of the report looks at how Jamaica might further accelerate growth through exports and private sector development once key growth constraints have been removed or eased (chapters 7 and 8).

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[1] Planning Institute of Jamaica prepared a growth strategy titled as "Growth Inducement Strategy for Jamaica in the Short and Medium Term" in March 2011. The objective of this strategy is reported as analyzing the current state of the economy and, on this basis, developing recommendations for policy and action to induce economic growth, starting with the upcoming budget process for the new fiscal year 2011/12 and going forward into the medium-term 2012/2014. In this respect, the CEM is a complementary analytical study focusing on long-term economic growth.

PART I: OBSTACLES TO GROWTH IN JAMAICA

THE JAMAICAN ECONOMY IN BRIEF

4.   **Jamaica grew quickly in the 1950s, but swings in economic policy in subsequent decades produced a significant contraction in per capita GDP.** With growth propelled by the development of new activities, mainly mining and tourism, Jamaica's per capita gross domestic product (GDP) grew by about 6 percent a year in the 1950s (figure 1). In the 1960s, however, the rate slowed to 2.9 percent. In the early 1970s, the country made a major change in its development strategy. Adopting an import-substitution model, the government turned to state intervention. Several companies were nationalized, higher tariffs created barriers to imports, some foreign products were banned outright, and strict exchange controls were imposed. In the early 1980s economic growth remained poor, despite the efforts to revitalize the market economy. With Jamaica facing an adverse international context, per capita GDP declined by 7.5 percent in constant terms from 1981 to 1985. The statist reform was extremely costly for Jamaica, without any clear economic gain, and the market-oriented reversal in the early 1980s took years before beginning to bear fruit. By 1985, real GDP per capita was 35 percent lower than in 1972, retreating to its 1960 level.

Figure 1: Performance of the Jamaican Economy, 1953–2007

Source: Penn Table

5.   **GDP growth accelerated in the second half of the 1980s and into the early 1990s. Since then, however, growth has been lackluster.** Over the past 20 years, real per capita GDP has increased at an average of only 1 percent. Only a few sectors have been relatively dynamic, and the unemployment rate has remained above 10 percent. Liberalization of trade worldwide has erased the tariff advantages Jamaica long enjoyed, sapping sugar and banana production, two traditional products, as well as the garment industry, which had flourished in the 1980s. In the 2000s, Jamaica's average rate of real

GDP growth ranked 180th out of 196 countries. Jamaica also underperformed compared with other economies with similar high debt-to-GDP ratios (table 1).

Table 1: Real per capita GDP in Jamaica and peers, 1970-2008

Rank	Country	1970	Ratio to Jamaica	Rank	Country	2008	Ratio to Jamaica
1	Trinidad and Tobago	4,615	1.4	1	Singapore	27,991	7.4
2	Singapore	4,531	1.4	2	Portugal	11,413	3.0
3	Uruguay	4,496	1.3	3	Trinidad and Tobago	10,981	2.9
4	Portugal	4,282	1.3	4	Uruguay	8,788	2.3
5	Mexico	3,576	1.1	5	Mexico	6,592	1.7
6	**Jamaica**	**3,355**	1.0	6	Chile	6,229	1.6
7	Panama	2,741	0.8	7	Panama	5,587	1.5
8	Costa Rica	2,371	0.7	8	Costa Rica	5,196	1.4
9	Chile	2,203	0.7	9	**Jamaica**	**3,792**	1.0

Source: WDI

6.   **Economic performance has been poor across the board.** Of 46 economic subsectors, only financial services and telecommunications had growth rates of more than 4 percent a year between 1992 and 2008. During that period, 18 subsectors declined, and 19 grew at a rate of less than 2 percent a year. Even Jamaica's best-performing sectors—the most modern, dynamic, and export-oriented, and that attracted most FDI inflows—underperformed compared with what similar sectors achieved in the rest of the world.

7.   **The leading sectors in the Jamaican economy followed an "enclave" development pattern, which limits spillovers to other sectors**. Mining, for example, is highly capital intensive. Most capital goods and services are imported, and the sector employs less than 1 percent of Jamaica's labor force. The tourism industry is responsible for 10 percent of total employment, but it has developed in a way that prevents strong intersectoral linkages. Enclaves are likely to be a response to high crime rates and fiscal incentives that grant duty concessions to imported food and favor large-scale, capital-intensive hotels. Some of these tax incentives are included in the Export Free Zone Act, along with other arrangements that discourage or prevent strong links between firms located in these zones and other sectors or enterprises.

8.   **The Jamaican economy exhibits a high degree of informality, which is in line with its development level.** Some studies have found that informality has increased from 13 percent of GDP to more than 40 percent in the past two decades. The country's informal sector is very complex; it includes illegal activities such as the drug trade, but also music and entertainment, one of the most creative and dynamic sectors of the Jamaican economy. The size of Jamaica's informal economy is lower than many comparator countries in Latin America and the Caribbean (LAC).

9.   **The Jamaican economy is characterized by very low levels of productivity and productivity growth**. Growth in total factor productivity (TFP) has been negative in the

past two decades. Estimates for 1992–2008 show that labor productivity was negative in 8 of 10 sectors; it was positive but negligible in manufacturing and in transport and communication. Jamaica's TFP per worker also lags significantly behind most other countries in LAC (figure 2). Most of the change in the income gap between Jamaica and the United States can be traced to differences in the stock of human capital and TFP.

10.   **Jamaica's disappointing growth and productivity rates cannot be attributed *a priori* to low levels of investment, which is commonly adduced in comparisons of LAC countries with the fast-growing economies of Asia**. In Jamaica, total fixed investment averaged 25 percent of GDP during 1960–2008. The ratio was even higher over the past two decades, averaging 28 percent a year. The LAC region's average was 20 percent over the past four decades. The fast-growing East Asia Region invested an average of 28 percent of GDP during 1960–2008. These figures show that Jamaica has had investment levels close to those of the fast-growing East Asia region, although it must be acknowledged that the latter have increased in the past two decades, reaching an average of 33 percent.

Figure 2: Relative TFP per worker in LAC countries, 2005

Source: Daudé and Fernández-Arias (2010)

11.   **High levels of public debt and large swings in the debt-to-GDP ratio have burdened the country for decades.** The history of high debt is related to chronic public deficits, weak budget coverage, and contingent liabilities arising from a large number of weakly regulated public bodies. The ratio of public debt to GDP has been very volatile since the 1980s, and the government has not been able to reduce it. Debt was about 140 percent of GDP at the end of 2009.

INCLUSIVENESS OF GROWTH

12.   **Although Jamaica's recent growth has been disappointing by regional and global standards, poverty has nonetheless declined significantly.** Real GDP growth has historically been low in Jamaica, and the enclave development pattern allows little linkage

between leading sectors and the rest of the economy. These two factors can leave a large portion of the population vulnerable to poverty shocks. Between 1997 and 2007, the Jamaican economy grew by just 12.7 percent, equivalent to a 0.79 percent average annual growth rate of per capita real GDP. During the same period, poverty was halved from 19.9 percent of the population in 1997 to 9.9 percent in 2007. Poverty is reported to have spiked substantially since 2007—rising to 12.3 percent in 2008 and 16.5 percent in 2009—due mostly to the effects of the global crisis (figure 3).

Figure 3: Poverty Rates in Jamaica

Source: STATIN

13.   **Jamaica's growth elasticity of poverty was exceptionally high in the last decade.** Between 1997 and 2007, the elasticity of poverty reduction with respect to a change in mean income was –16, much higher than the values usually observed in other countries. This elasticity is calculated as the percent change in the poverty headcount (expressed as a percentage of total population) for a 1 percent change in real GDP per capita. Under a common rule of thumb, the poverty elasticity of growth is assumed to be around –1.[2] From the late 1990s to mid-2000s, poverty reduction in India, China, Vietnam, and Mexico has yielded elasticities of –0.2, –0.5, –1.0, and –6.8, respectively. The rise in poverty in Jamaica was also disproportional after 2007, when growth collapsed with the global crisis.

14.   **The main driver of the post-2003 decrease in poverty has been growth in per capita consumption, followed by declining inequality.** A decomposition of poverty reduction reveals that higher mean consumption accounted for nearly three-quarters of poverty reduction, while narrowing inequality contributed about one-quarter. According to the national accounts data, per capita consumption grew faster than nominal GDP per capita. A substantial part of the growth in per capita consumption is explained by slower growth in the cost of poor households' consumption basket relative to the average basket. Because the poverty lines grew more slowly than overall inflation, the consumption basket of the poor became relatively cheaper, contributing to poverty reduction. The rapid growth of international remittances, which increased from 10 percent of GDP in 2000 to more than 17 percent of GDP in 2007, was another factor in the growth of per capita consumption. Although it is not quantifiable, informal support from criminal gang networks may also explain a part of the growth in per capita consumption of poorer households. With respect to inequality, the Gini coefficient fell from 38.3 in 2003 to 36.8 in 2007. Already in 2003,

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[2] It should also be noted that the poverty elasticity of growth is greater in absolute value when the initial headcount ratio is lower.

Jamaica was the least unequal country in Latin America and the Caribbean. However, inequality continued to decline between 2003 and 2007, with all measures of inequality decreasing over the same period. The reduced inequality contributed significantly to the overall reduction in poverty during 2003–07.

15.   **Gains for the poor have been broad-based across urban and rural areas.** Poverty declined substantially in all three main localities: the Kingston metropolitan area (KMA), other towns, and rural areas (see figure 3). Although urban areas excluding KMA registered the greatest percentage decline in poverty, these areas account for less than a quarter of Jamaica's poor. Thus, the primary driving force behind the decline in aggregate poverty has been the lower poverty headcount in rural areas, which had a high concentration of poor in 2003.

16.   **The poverty headcount is higher for households with a female head, mainly because these households have more nonworking members. On the other hand, the poverty headcount is lower for households where the primary earner is a woman.** In 2003, the poverty headcount was nearly four percentage points higher for female-headed households than for male-headed households. Without controlling for any other determinant of household welfare, households headed by males or females are equally likely to be poor. What accounts for the higher headcount among female-headed households is their larger size—the difference is the number of children. On the other hand, households with female primary earners tend to have higher per capita consumption and lower incidence of poverty than households with male primary earners. Several factors explain this difference. First, households where the primary earner is female have significantly more working-age members than households with male primary earners. Moreover, female primary earners are much less likely than male earners to work in agriculture, which pays significantly less than other sectors, or to live in rural areas, which have lower levels of welfare and a higher incidence of poverty.

17.   **Poverty among households in which the primary earner works in agriculture has fallen substantially, but at a slower rate than for households with primary earners in other sectors.** The headcount among households in which the primary earner works in agriculture declined from 37.3 percent in 2003 to 22.6 in 2007, with a brief spike in 2006. However, poverty among households with the primary earner in service sectors fell one-third faster. Two related developments explain this pattern. First, most of the aggregate reduction in poverty occurred in the rural areas, but the rate at which poverty fell was faster in urban areas and KMA. Second, the size of the agricultural sector—measured by the share of households with the primary earner in agriculture—declined steadily from 23 percent in 2003 to 19 percent in 2007. Normally, the richer households—those with greater physical and human capital assets—are more likely to exit the agricultural sector, and households that do not shift into nonagricultural occupations tend be worse off.

18.   **A drop in the importance of education as a determinant of household welfare and a slight narrowing of welfare differences between the employment sectors of principal earners contributed to the observed reduction in inequality.** Between 2003 and 2007, the real wage premiums of completing progressively higher levels of education did not exhibit an obvious pattern. However, the effect of the level of education of the

primary earner on overall household welfare appears to have fallen over time. On the other hand, part of the observed decline in inequality between 2003 and 2007 was also driven by a narrowing of welfare gaps determined by the primary earner's employment sector. After controlling for the level of education and the primary earner's years of experience, the narrowing can be seen as a potential sign of some improvement in the functioning of the labor market.

WEIGHING THE FACTORS BEHIND LOW GROWTH

19. **The list of potential causes of Jamaica's low growth is large, and sorting out their relative importance is complex.** Chapter 1 of this report shows that Jamaica's economy has grown more slowly than that of most other countries over the long term. Poor growth performance has occurred in spite of political stability since independence in 1962, several market-oriented reforms since the 1980s, and relatively high rates of private investment over the years. On the other hand, despite low growth, poverty continued to decline and income distribution improved over time, creating a better social environment (see chapter 2). Jamaica's poor growth performance may have several explanations— among them natural disasters, mismeasurement of GDP and capital stock, low public investment, low productivity of capital, wages rising faster than productivity, distortions from tax incentives, high tax rates, high public debt and crowding out of private investment, inadequate human resources, migration of skilled labor, disincentives from large inflows of remittances, the high cost of crime, poor export performance, lapses in governance, and slow advances in technology. From a policy perspective it is necessary not only to identify constraints but also to understand their interactions and to generate a hierarchy of "most" binding constraints. These are the restraints that, if removed, would yield the largest payoff in terms of economic growth.

20. **Chapter 3 reveals that Jamaica still underperforms even after controlling for possible mismeasurement of GDP and capital stock.** Measurement problems due to rising informality may have led to underestimations of GDP in certain periods, but they cannot explain low growth over four decades. Natural disasters no doubt pushed up Jamaica's level of replacement investment, but Jamaica still underperforms other Caribbean and Central American countries that are equally subject to major natural disasters. Investment in crime prevention is significant, but it affects the productivity of investment rather than reducing the country's rate of investment relative to other countries. Complementary public investment is not lower than in comparator countries that have grown faster. The level of investment in construction is also no higher than in regional comparators.

21. **Jamaica's large number of tax incentives create significant distortions, with possible negative impacts on innovation and productivity**. The incentives provide relief from income taxes on earnings and grant eligible enterprises concessions on import taxes and duties for up to 15 years. Some incentives provide other benefits, such as capital allowances. The fact that tax incentives can be discretionary generates complex distortions. The sectors that have benefited the most are tourism, industry, bauxite and mining, agro-processing, creative industries, shipping, and information and communication technology (ICT). Some studies of Jamaica's incentives suggest a substantial bias in favor of capital-

intensive projects, particularly larger projects. Such tax exemptions encourage informality in the business sector and penalize firms with small amounts of capital, a characteristic of the large majority of native firms. Jamaica's nominal income and corporate tax rates are relatively high in comparison with those of other Caribbean countries, but effective tax rates are heterogeneous and extremely low for some sectors. Among the largest taxpayers, for example, the collected tax rates were 2 percent for the telecommunications industry, 5 percent for the hotels/tourism industry, and 9 percent for construction (figure 4). Corporate income tax (CIT) incentives allow projects with negative rates of return on investment to be profitable for the private sector. The allocation of capital implied by such a state of affairs is highly inefficient. The evidence suggests that the tax regime could be a binding constraint on Jamaica's growth because it distorts capital accumulation.

Figure 4: Average CIT Tax Rate Paid by Top CIT-Paying Industries

Source: IADB (2007)

22.   **Many Jamaican firms complain about access to finance; however, the evidence does not give strong support to the argument of public debt crowding out private financing.** From a macro perspective, Jamaica does not restrict capital flows and has, in fact, promoted foreign direct investment (FDI) with fiscal incentives. It has large inflows of workers' remittances that could be invested if there were good opportunities. Instead, the money has been consumed or invested in housing. National saving rates are in line with Jamaica's level of development. Jamaican firms show good indicators when compared with businesses in other economies. Real interest rates are not high. Financial regulations have improved since the crisis of the mid-1990s. On the more intuitive side, Jamaica has been able to invest at a high level compared with other LAC countries, even after controlling for overestimates. If a financing constraint exists, it is not reflected in investment, and therefore

its shadow price should be low. Although business opinion seems at odds with these generalizations, the ratio of complaining firms in Jamaica to those in the rest of the world indicates that financing does not show up as an important concern in Jamaica's economy. For Jamaican business, the top three major constraints involve crime, cost of electricity, and workers' skills. However, it is still possible that distortions in the financial markets affect the allocation of capital.

Figure 5: Training Received by Labor Force, 2008

Source: STATIN: Labour Force Survey.

23.   **The available evidence shows that Jamaica has a low level of human capital, with poor quality of education and insufficient training of its labor force (figure 5), despite the country's efforts**. The country's educational level is low for its level of development but in line with other Caribbean countries. However, the quality of education in Jamaica is low compared with other countries of similar development. The Caribbean Examination Council (CXC) general proficiency tests provide an indicator of "basic skills" development, and Jamaican students' performance has been weak in English and mathematics (table 2). Spending on workers' training and the stock of highly educated workers are both very low. Human capital is not abundant, and the returns to schooling in Jamaica have been extremely high for at least 25 years. The relatively low stock of human capital and the high returns to schooling are clear indicators that human capital is scarce. This problem has long been recognized in Jamaica. Several policies have been implemented, and more needs to be done. The challenges for Jamaica are raising the overall quality of its human capital, starting from early childhood, and retaining qualified workers. The brain drain has not stopped; on the contrary, the migration rate of qualified workers has increased.

Figure 6: Murder Rates per 100,000 population

Source: UNOCD

Table 2: Jamaican Student Performance on the CXC
(General Proficiency, 1999-2008, % passes)

Year	English Language	Mathematics
1999	60.3	26.8
2000	50.7	37.4
2001	72.1	30.3
2002	54.0	36.0
2003	46.0	36.0
2004	41.0	23.0
2005	60.2	39.4
2006	50.1	35.7
2007	51.6	35.3
2008	54.4	43.0

Source: CXC

24. **Jamaica is one of the most crime-prone places in the world**. With a murder rate of 60 persons per 100,000 inhabitants and an average of five murders a day, Jamaica has the Caribbean region's worst record (figure 6). In fact, Jamaica's murder rate is among the top five in the world. Crime has diverted valuable resources from productive industries into security and health-care expenditures. The overall estimate of the cost of preventing violence or reducing its consequences is approximately 5 percent of GDP. Rising crime is also perceived as one of the main obstacles to tourism. This has been partly mitigated by the development of all-inclusive enclave resorts, where tourists can enjoy beaches without leaving hotel facilities.[3] Crime may adversely affect economic activities beyond the short-run costs of prevention measures. It may also constrain business expansion by reducing final demand and limit productive work hours because of the need to close firms early. Evidence suggests that crime and violence encourage highly trained professionals and entrepreneurs to emigrate. Studies point to immense long-term economic gains if Jamaica's crime rates could be reduced. Jamaica could experience an increase of 5.4 percent annually in its per capita GDP growth rate if it could cut crime rates to the levels prevailing in Costa Rica. The result would raise income per capita by 69 percent over 10 years.

25. **Jamaica performs very poorly on many dimensions of governance**. Jamaica's most evident and severe problem is its crime environment, which erodes social stability and casts doubt on the rule of law. In addition, Jamaica also performs poorly on its legal system. Judicial operations, including backlogs in court proceedings, alternative dispute resolution, and sentencing, are areas where Jamaica performs poorly. Businessmen also perceive corruption to be particularly serious in Jamaica owing to lack of transparency. The prevailing paradigm for public-private dialogue is predominantly informal, with an alarmingly high amount of ministerial discretion in the provision of exemptions from taxes and customs duties. Informal dialogue has led to rent-seeking behavior to the detriment of the wider economy.

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[3] According to Jamaica Tourist Board statistics, 85 percent of the hotel room nights sold in 2009 were in all-inclusive hotels.

26.   **Like other countries in the Region, Jamaica does not have abundant export opportunities, and Jamaican firms have trouble absorbing new technologies and fostering innovation**. Earlier advantages based on preferential treatment generated distortions that later proved to be costly—for example, in the garment industry. For other products, such as sugar and bananas, the country has lost competitiveness. At the same time, it has not been dynamic enough to find new products to overcome these shocks, and exports have become less diversified despite the appearance of some new export products of the 2000s. Survey evidence supports the hypothesis that many Jamaican firms lack the capacity to absorb new technologies, possibly because of poor educational attainments, low levels of workforce training, limited availability of specialized services and professional manpower, and reluctance of entrepreneurs to address the challenges associated with the knowledge-based economy.

27.   **In Jamaica, the enclave model—implemented through Export Free Zones (EFZs) and in mining and tourism industries—has not generated the most-needed spillovers.** EFZs can play an important role in attracting FDI by offsetting some aspects of an adverse investment climate through world-class facilities and best-practice policies. In Jamaica's case, crime and inefficient bureaucracy appear to be the greatest obstacles to business growth. Failure to remove these obstacles is partly addressed by creating EFZs. But a recent study points out that EFZ firms have low value added and create few production linkages with local firms. The lack of spillovers is observed in the tourism and mining sectors, too. The dominant model of all-inclusive resorts promoted by generous tax incentives favors large, isolated hotels that lack linkages to the rest of the economy. Mining employs less than 1 percent of the country's labor force and has few linkages with the other sectors of the economy.

28.   **In conclusion, Jamaica's disappointing economic performance can be traced to low productivity.** Once low productivity across the economy is taken into account, the country's generalized underperformance becomes less puzzling. Estimations for 1992–2008 show that labor productivity was negative in 8 of 10 sectors; it was positive but negligible in manufacturing and transport and communication. In the 1960s, Jamaica's TFP was growing faster than the world and regional averages, but it collapsed in the 1970s. Jamaica's TFP per worker also lags significantly behind most other countries in the LAC region. Removing the factors that account for Jamaica's low productivity will go a long way in unlocking the island's growth potential and creating conditions for even deeper poverty reduction than in the past.

29.   **The main causes of Jamaica's low productivity are (i) high levels of crime, (ii) deficiencies in human capital, and (iii) fiscal distortions**.

- **Crime is the most obvious and severe problem in Jamaica**. It severely limits future growth, leading to a vicious circle as low growth further increases crime and higher crime rates further reduce growth. Crime erodes social stability and makes the rule of law a critical concern. It has a negative effect on human capital, creating incentives for migration. It constrains business expansion and diverts resources from productive activities to protection from crime. Because of crime and other structural conditions, investment in Jamaica tends to flow into isolated activities.

All-inclusive resorts, mining, and EFZs are the best examples of this enclave development model with its low spillovers to the rest of the economy.

- **Jamaica has a low level of human capital**. Existing quality indicators for education put Jamaica below the average for the Caribbean region. There is evidence that human capital is a scarce factor because private returns to schooling and training are extremely high and have not declined in recent years. Jamaica also has difficulty retaining its qualified workers, as evidence by the growing migration of qualified workers. Through migration the country loses very important assets for productivity, innovation, and entrepreneurship. The Jamaican labor market is flexible, but substantial deficiencies exist in the skill content of the labor force. A large portion of the Jamaican labor force has no formal training. In 1995, as many as 80 percent of workers indicated that they had no formal training. In 2008, the figure remained high, at 72 percent. The combination of low educational attainment and low levels of training suggests an overall low quality of human capital, which hinders productivity.

- **Jamaica's fiscal policies and budget-management practices and policies constrain growth.** Inconsistent, complex tax policies, with numerous exemptions and special privileges, has reduced tax revenue by an estimated 20 percent. The complex system of taxes and incentives also creates distortions for the allocation of capital and lowers investment productivity. High debt-servicing costs and a high wage bill have reduced the fiscal space available for productivity-enhancing public spending. Existing rules and organizational structures have not supported the required fiscal discipline. From a political economy perspective, the relatively sharp division of the country into opposing political camps has made it difficult to reach a national consensus and make binding commitments.

30.   **Given the causes of Jamaica's low growth, policy recommendations likely to have large payoffs are reducing crime, investing more in education and training (and in retaining trained workers), removing perverse incentives, and moving away from the enclave development model**. There is no silver bullet for all Jamaica's problems, nor any single, unique binding constraint whose removal would solve them. Rather, the country requires concerted change on several fronts. It would hardly pay to improve human capital if crime were not reduced and the brain drain not staunched. Reducing crime would hardly pay if there were not better economic opportunities in the local economy. The government must therefore move forward very efficiently, which calls for urgent improvement in accountability and governance. Jamaica has to do this with limited fiscal resources. The recent debt swap will give the country more room for maneuver, but public resources will not be abundant. The country, therefore, must conceive policies that can relax its constraints to growth with minimum spending. This is not an easy task, but it requires a push for even greater efficiency, for the elimination of distortions, and for greater involvement of the private sector.

PART II: CREATING AN ENABLING ENVIRONMENT FOR GROWTH: KEY POLICY CHALLENGES

LABOR MARKET PERFORMANCE IN JAMAICA

31.   **Chapter 4 explores the main issues and challenges facing the Jamaican labor market, focusing particularly on their links to growth and labor productivity**. The analysis in Part I, particularly the growth diagnostics in chapter 3, show that both labor productivity and TFP are low in Jamaica, significantly constraining economic growth. Therefore, identifying the factors behind low labor productivity and developing reform options to improve it will be important for creating an enabling environment for growth. A well-functioning labor market is critical for economic growth for many reasons. An efficient labor market contributes to growth by allocating labor to where it is most productive. High labor productivity requires (i) that employers have enough knowledge of the skills of prospective employees and how they mesh with production needs, and (ii) that employers have incentives to retain and train workers as well as the flexibility to hire and fire workers. From the supply perspective, job-seekers need to (i) know where the most appropriate openings are, (ii) be able to access these openings and present their credentials, and (iii) possess the resources and motivation to perform at full capacity on the job.

32.   **Jamaica is in the mid-stage of a demographic transition with positive impact on growth. However, a smaller share of the population now works or actively seeks employment.** Population projections show a gradual flattening of the demographic pyramid. According to these projections, the share of the population between 15 and 64 years of age is expected to rise from 60 percent in 2005 to 65 percent in 2015, remaining at that level until 2030. This demographic group approximates the country's potential labor force, although its actual size depends on such factors as secondary and tertiary school enrollment, female labor force participation, migration, and retirement behavior. Currently, Jamaica's labor force participation has shown a declining trend in comparison with the growing share of working age population. Labor force participation decreased from 69 percent in 1990 to 64 percent in 2009, a change that could be explained almost entirely by the sharp increase in inactivity among women. Nonetheless, compared with other LAC countries, Jamaica remains above average in female labor force participation. Between 1995 and 2008, the working-age population and employment both increased, despite declining participation ratios, while the growth rate averaged 0.7 percent. This implies stagnant labor productivity, with a sharp declining trend since 2002. Had Jamaica not benefitted from the demographic transition, growth would likely have been even slower.

33.   **Labor productivity has been low and declining since the 1970s except in a few years.** Jamaica's labor productivity has lagged behind that of most other countries. In 1980, Jamaica had a GDP per worker of $9,960 at constant PPP, marginally above that of the Arab Republic of Egypt, Morocco, the Dominican Republic, and Bolivia; and slightly lower than that of Yemen, Tunisia, Malaysia, and Bahrain. (The range was $7,627 for Egypt to $11,008 for Bahrain.) By 2008, however, Jamaica's GDP per worker was equivalent to $8,822, higher only than Bolivia's. Meanwhile, Malaysia had reached a GDP per worker of $25,590, and four other countries had exceeded $13,000, or 1.5 times

Jamaica's level. At the sectoral level, labor productivity has grown in mining and manufacturing, while it has declined in sectors such as construction and commerce. The improvement in manufacturing productivity coincided with the large-scale expansion of the textile industry that occurred from the mid-1980s to the late 1990s. The industry has contracted since 2000. Although volatile, mining productivity remained at high levels during 2002–06 before falling sharply in 2007. Notably, real wages have largely followed the evolution of labor productivity at the aggregate and sectoral levels, except for 1985–2002.

34.   **According to the Doing Business 2010 Report, Jamaica's labor market regulations are flexible enough not to constrain labor productivity.** The Doing Business rankings are based on methodology developed by Botero et al. (2004). As a common law country—in the tradition of other members of the British Commonwealth of Nations—Jamaica's employment regulations are generally flexible, and the country ranks 39th globally in ease of employing workers. In particular, it ranks among the top 10 in flexibility in three subcomponents—"difficulty of hiring," where regulation allows appropriate degrees of flexibility in the use of fixed-term contracts; "rigidity of hours," which considers the distribution of hours during the week and year to accommodate changes in business activity; and "difficulty of redundancy," where Jamaica maintains no legal restrictions on dismissing redundant workers. However, the generous level of redundancy payments increases the costs of dismissals and effectively limits flexibility.

35.   **The analysis suggests that low levels of educational attainment and labor force training are major constraints on realized labor productivity, whereas skills mismatch did not feature significantly in the observed decline in productivity.** A large portion of the labor force in Jamaica has no formal training. In 1995, 80 percent of workers indicated that they had no training; in 2008, the share was still high at 72 percent. According to the 2006 World Bank Investment Climate Survey, a significant portion of Jamaican firms cited lack of skilled labor as a severe constraint on growth, although results should be taken with caution owing to small sample size. Available empirical studies also indicate that lack of skills is a constraint on realized labor productivity. On the other hand, an examination of advertised vacancies and unemployment rates in Jamaica reveals relatively low and declining skills mismatch. The skill formation and human capital challenges facing Jamaica have long been recognized. Over the years, various institutional and policy initiatives have been implemented to address both the quantity and quality of the human resources problem. However, more needs to be done at all educational levels and in the area of social trust.

36.   **An additional phenomenon that works against labor productivity is the high level of migration among the most skilled workers**. Emigration puts additional pressure on the national educational system to produce enough skilled workers to compensate for emigration. Brain drain is likely a consequence of perceptions among highly educated individuals of limited opportunities for career development. Enhancing career prospects in Jamaica for such individuals depends ultimately on improving the country's overall business environment and living conditions, notably by reducing crime, and on better health and education systems. The challenge is to turn the phenomenon of brain drain into a process of brain circulation, whereby the highly skilled Jamaican diaspora comes to see opportunities to engage in productive investment in the country and has the appropriate

channels through which to do so. To foster brain circulation, projects may be directed toward making members of the diaspora invest directly in productive projects or act as entrepreneurs.

Figure 7: Age of Entry and Education Levels for Jamaica Migrants

37.   **Informal labor, although highly prevalent in Jamaica, has been declining in importance since 1990.** Despite this trend, some evidence points to a diverging distribution of wages between formal and informal labor. The country's complex informal sector includes music and entertainment, one of the most creative and dynamic sectors of the Jamaican economy. Reducing the informal economy's size is a challenge faced by many developing nations, one that requires strengthening both the demand and supply for formal labor. In general, this requires strengthening the demand for labor in sectors that are more likely to engage in formal employment. For this purpose, a solid business climate that gives stability for potential investors is key. On the supply side, strengthening the labor force's skills is an important step. Individuals with tertiary education are significantly less likely to work informally. International evidence also shows that technical and vocational education that trains workers in job-relevant skills improves the chances of finding jobs in the formal sector. A strategy that aims to improve the skills component of the labor force would likely help to improve labor productivity in the future.

38.   **The skill formation and human capital challenges facing Jamaica have long been recognized, but more needs to be done.** Over the years, various institutional and policy initiatives have been implemented to address the human resources problem. A commission was established in 2003 to boost the performance of students in early-childhood education. In addition, Jamaica targets early-childhood development through a conditional cash-transfer initiative (PATH), which provides assistance to vulnerable groups and seeks to improve the health and education of the poor. The government has sought to reform the secondary-school system by improving teacher training and upgrading facilities and equipment, but the emigration of trained and experienced teachers and a high level of vacancies have hampered the reform process. The HEART Trust/NTA has been Jamaica's main agency providing technical and vocational training. The agency trained an estimated

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380,000 persons between 1982 and 2008. Overall, the Jamaican authorities have introduced several policy and institutional measures to address the severe skills gap facing the country. However, more needs to be done at all educational levels and in the area of social trust.

PUBLIC FINANCIAL MANAGEMENT AND GROWTH

39.   **Chapter 5 focuses on public financial management in Jamaica, with the objective of identifying policy and institutional weaknesses that create fiscal distortions that hamper growth**. High debt-servicing costs and a high wage bill in the public sector have reduced the fiscal space available for productive government spending. Inconsistent and complex tax policy, with numerous exemptions and special privileges, not only reduces government revenues but also creates distortions in the allocation of capital and lowers investment productivity. The analysis in Part I, particularly the growth diagnostics in chapter 3, show that tax distortions could be a binding constraint to growth in Jamaica as they distort capital accumulation and encourage an enclave development pattern with few spillovers to the rest of the economy. The adverse effects on economic growth are magnified by other weaknesses in fiscal management, such as a weak legislative and institutional structure for debt management; inefficient public investment; weak links between government priorities, planning, and budget; the lack of in-year expenditure controls; and the lack of accurate financial statements. While the government has made progress in strengthening the management of public finances, current practices and processes limit its ability to strengthen its fiscal position.

40.   **Underlying institutional and political economy factors are significant impediments for strengthening fiscal and expenditure policy and management of public finances.** Existing rules and organizational structures have not supported the required stringency. From a political economy perspective, the relatively sharp division of the country into opposing political camps has made it difficult to reach a national consensus and make binding commitments. Moreover, Jamaica is grappling with an implicit social contract that includes a significant role for organized crime in the economy and society. That contract is eroding the legitimacy of the state and undermining the degree to which formal rules are regarded as binding, which affects revenue collection, expenditure management, and other fiscal issues. Moreover, organized crime and high crime rates draw political attention to security issues and require significant spending at the expense of pressing needs for fiscal consolidation and public-sector actions to support growth.

41.   **Past efforts at fiscal consolidation have succeeded only partly because of structural weaknesses inherent in public financial management and the underlying political dynamics of the budget process.** The key structural weaknesses that have played a significant role in Jamaica's debt buildup and helped create a fiscal environment not conducive to growth can be grouped into five main areas: (i) weak institutions; (ii) ineffective fiscal policy (or central government revenue and expenditure policies, such as tax policy, wages, and public investment allocation); (iii) inefficient budgeting processes, including insufficient control over public expenditure and the public investment planning process; (iv) ineffective debt management practices and debt buildup; and (v) the weak management of public bodies.

42.   **Fiscal management in Jamaica is guided by a set of rules that does not support a strategic approach necessary to address existing challenges.** Existing legislation is largely silent on budget preparation and on principles for fiscal management. It promotes treating a large share of expenditures as fixed. Budget planning is fragmented, especially for capital expenditures. Public bodies have been allowed to operate with implicit or explicit Government guarantees. Prior to the recent fiscal-responsibility amendments in 2010, there was no requirement to make the resulting fiscal liabilities explicit in budget deliberations. Supplemental budgets have been adopted at least once and in some cases twice a year (table 3). However, existing rules do not encourage sufficient scrutiny of what changes are being made with those budgets and why. Recently, the Government has adopted a Fiscal Responsibility Framework (FRF) to strengthen control over expenditures (including lending) by the Ministry of Finance and Public Service (MFPS) and to increase budget transparency.

Table 3: Supplemental Budget Amounts and Frequency

Financial Year*	Original Approved Budget	Revised Budget	Revised Budget	Number of Supplementary Estimates	Dates of Supplementary Estimates	
		$'000			First Supp. Est	Second Supp Est
2000/2001	167,387,973	188,459,488	-	1	13/03/2001	
2001/2002	185,436,857	219,779,507	219,777,507	2	5/2/2002	18/03/2002
2002/2003	210,064,493	223,524,105	225,043,654	2	10/12/2002	18/03/2003
2003/2004	261,704,873	279,161,324	-	1	2/3/2004	
2004/2005	328,153,402	331,547,754	328,176,233	2	7/12/2004	15/03/2005
2005/2006	347,155,951	346,278,253	-	1	7/3/2006	
2006/2007	358,192,700	372,081,200	-	1	27/02/2007	
2007/2008	380,364,747	402,884,431	405,385,169	2	27/01/2007	18/03/2008
2008/2009	489,529,398	507,972,069	-	1	27/11/2009	
2009/2010	555,040,106	561,535,407	593,064,274	2	22/09/2009	16/03/2010

Source: Ministry of Finance and Public Service

43.   **Key components of Jamaica's fiscal policy, in particular its tax policy, adversely affect the government's fiscal position and contribute to Jamaica's consistently low growth rates.** Jamaica's tax system remains complicated. The Government offers waivers and incentives for a large group of activities and for a variety of purposes. A significant portion of these waivers and incentives are discretionary. Complicated tax policy and resulting low tax collections create distortions in resource allocation and contribute to the country's consistently low growth rates in at least three important ways. First, the existence of an inefficient tax structure lowers tax revenues and reduces the fiscal space for productive public spending that would boost growth. Second, the difficulty of paying taxes discourages compliance, further lowering tax revenues. Third, the complex tax and incentives system creates distortions in the allocation of capital and decreases the productivity of investment, lowering the potential growth of the Jamaican economy. On the other hand, public sector employment and the resulting wage bill continue to be a source of fiscal pressure. Social partnerships and collective bargaining for public sector wages have had limited traction in controlling the wage bill owing to the politicization of key unions and the fragmentation of unions and staff associations. The

public investment planning process is neither strategic nor comprehensive. Systems are weak for ensuring that public investment allocations are clearly prioritized and aligned with strategic development plans and programs. Public investment undertaken by public bodies is not included in the overall public investment plan. The execution of public investments has also been an area of some concern.

44.   **Jamaica has long carried a high public-debt burden; despite this, legislative and institutional frameworks remain weak.** While debt management has improved significantly, it is still plagued by substantial weaknesses, including the lack of a comprehensive medium-term debt-management strategy, the absence of legislative and institutional frameworks for consolidating the debt-management process, and the lack of borrowing limits. The legislation governing debt management is fragmented and does not include aspects of modern debt-management laws. Jamaica prepares debt-management strategy but with inadequate focus on medium-term risk and sustainability. Restructuring of the Government's debt management unit into front, middle, and back office functions is still pending. The lack of effective coordination between the debt management unit, the central bank, fiscal policy, and cash management constrains debt management by increasing *ad hoc* issuance of debt that may weaken adherence to the debt-management strategy.

45.   **Achieving fiscal consolidation and reforming the tax system can be painful and politically unattractive. It is important, therefore, to give careful consideration to how such a policy stance can be made politically feasible.** Tax reforms would require a broad social consensus, as any effective reform would have winners and losers. Fiscal consolidation would have to be pursued over a five-year horizon or longer. As such, it would include at least one election. In the interest of national recovery, the main political parties should publicly commit to tax reforms and fiscal consolidation as a *sine qua non*— to avoid populist competition over who is willing to spend more.

Figure 8: Public Debt in Jamaica

Source: Ministry of Finance and the Public Services

46.   **It will be important for Jamaica to move forward on tax reforms and fiscal consolidation in ways that are politically feasible and robust**. Any strategy will require good communication by the government on the reform steps being taken, the available policy choices, and the reasons for favoring or disfavoring each. The public should see that the costs associated with reforms are allocated fairly across different groups in society. The strategy should include a clear protection of the poorest while making it clear that most, if not all, other groups will have to contribute to reforms. Good communication on difficult policies characterized Jamaica's agreement with the International Monetary Fund (IMF) and the Jamaica debt exchange (JDX) of February 2010. These experiences with good communication and transparency should be replicated.

47.   **Jamaica has been in a low-growth, high-fiscal-deficit, and high-debt equilibrium for some time**. From an institutional and political economy perspective, this raises the question of why politicians have not sought to address the situation and change the status quo. Jamaica has had a democratic political system since independence. In principle, such a regime should generate incentives for politicians to heed the demands of citizens. Furthermore, one would expect that voters care about growth because it generates employment and other economic opportunities. But even though growth has been low for long periods, voters have reelected incumbent parties multiple times (figure 7). Three key factors help explain this paradox. They are (i) Jamaica's high degree of political polarization, (ii) high emigration rates among skilled workers (and sophisticated voters), and (iii) fragmentation of one of the main parties, which allowed the other main party to continue in government.

48.   **Recognizing the complexity of technical reform and the underlying political dynamics, the way forward should be pragmatic and based on a two-phased approach of medium- and long-term reforms.** Several technical reforms would be relatively easy to implement because they do not require regulatory changes and can provide positive short-term results in the management of public finances. Some of these involve actions to strengthen the implementation of existing regulation. These include establishing consistent standards for commitment control to improve in-year control of budget execution and public bodies. Medium-term actions to make more systemic changes would require more effort and time to implement. These include tax reforms, stronger links between planning and budgeting, and limits on permissible changes in the allocation of supplemental budgets. With ongoing political commitment, Jamaica can be successful in undertaking reform to strengthen its fiscal position.

Figure 9: Fiscal Deficits, Elections, and Growth, 1992–2009

Source: IMF for fiscal data; deficit data referring to Central Government only

GROWTH AND DISTRIBUTIONAL EFFECTS OF POLICIES TO IMPROVE FISCAL SUSTAINABILITY AND ACCELERATE GROWTH

49.   **Using a simulation model, chapter 6 analyzes potential growth and distributional impacts of recently implemented policies as well as possible reforms for enhancing growth.** The forward-looking exercise compares a set of alternative scenarios for 2007–20. These scenarios are (i) business-as-usual with no reform, (ii) tax reform, (iii) JDX, (iv) adoption of the Fiscal Responsibility Framework (FRF), (v) accelerated productivity growth, and (vi) changes in the skill content of the labor force. The results of these simulations are then mapped to the 2007 Jamaica Survey of Living Conditions to explore the potential impacts on household welfare, poverty, and the distribution of income. The model assumes three representative households—unskilled rural, unskilled urban, and skilled. This categorization is important because the three household types vary substantially in their sources of income.

50.   **The business-as-usual (BaU) scenario incorporates the adverse impacts of the global food, fuel, and financial crises of 2008–09 and projects a smooth but gradual recovery during 2011–20.** The combined impacts of the food, fuel, and financial crises led to a cumulative loss of 4.6 percent of real GDP in 2008–10 (relative to 2007). From 2011 onwards, under the scenario, the economy recovers and achieves annual growth of 2 percent by 2012 and 2.1 percent in 2014 and each year thereafter. The baseline growth is

plausible, as the recent crisis created considerable slack in the economy. Per capita income grows at an average annual rate of 0.8 percent over the entire period 2007–20.

Figure 10: Debt Dynamics under Alternative Scenarios

51. **The BaU scenario reveals that debt sustainability was at great risk without policy reforms implemented in 2008–10.** Under the BaU scenario, the Government maintains a fairly strong fiscal stance, with noninterest recurrent outlays remaining at 13 percent of GDP and capital expenditures stable at 3.4 percent. This enables the government to continue recording strong primary surpluses, averaging 6.1 percent of GDP between 2007 and 2020. However, the high level of existing debt and high costs of debt service push the economy toward increasing debt. By 2012, the stock of public debt exceeds 150 percent of GDP and continues to rise to above 200 percent of GDP by 2020. These debt dynamics illustrate the difficult situation and the pressing need for fiscal and debt reform that faced the government in 2009–10. Despite the global recovery, and even with strong primary surpluses, the debt trajectory would likely have been unsustainable without the aggressive policy actions the government took.

52. **Under the BaU conditions, poverty and inequality are likely to continue their downward trends but at slower rates than in the past.** Poverty is likely to continue to decline but at a slower pace. The micro-accounting exercise conducted as part of the simulation suggests that the moderate poverty headcount could fall by another 3.5 percentage points in the BaU scenario, while the Gini coefficient could decline by half a point. The main reason the BaU scenario does not deliver more poverty reduction is the relatively slow rate of growth in per capita consumption.

53. **The first alternative scenario incorporates the major tax changes in fiscal years 2009 and 2010 as well as JDX (February 2010).** The JDX-plus-tax reform scenario introduces the expected revenue effects of the tax amendments implemented in FY2009-10.

In addition, the scenario takes into account the decrease in the rate of interest paid on domestic and foreign debt after the JDX.

54.   **The improved fiscal outcome of this scenario makes a strong case for strengthening revenue collection because it puts Jamaica on a declining debt path.** The immediate effect of the tax reform is a J$19.7 billion increase in indirect tax revenue in 2010, somewhat below the Government's forecast of a J$26.3 billion increase. At the same time, the JDX saves the Government another J$26.9 billion in interest in 2010. Therefore, the overall result of the policy change is an improvement in the overall balance equal to 5.3 percent of GDP in 2010. This substantial strengthening of the fiscal position broadens the resources available to the government for making debt payments and decreases borrowing needs. Debt ratios stop rising immediately. By 2014, the debt-to-GDP ratio falls to 130 percent, and it continues declining to 120 percent of GDP by 2020. Reduced borrowing needs also play into the virtuous circle of lower debt and higher overall balance: compared with the BaU scenario's interest payments of 24 percent of GDP in 2020, interest costs in the JDX-plus-tax reform scenario are 12 percent of GDP in the same year. The lower interest payments limit the overall deficit to just 3.4 percent of GDP, compared with a projected 17 percent in the BaU case.

55.   **The improvement in the fiscal position has important positive spillovers for real GDP growth.** Initially, growth is depressed by the tax increase—the contraction in 2009 is 2.6 percent, rather than 2.5 percent without the tax increase. However, growth recovers quickly. By 2015, it is 0.2 percentage points higher than under BaU; by 2020, the premium widens to 0.3 percentage points. As a result, GDP per capita in 2020 is more than 2 percent greater than under the BaU scenario. The positive growth spillover is due mainly to the decreased borrowing needs of the government, which has a positive impact on private investment. Real consumption per capita remains unchanged from the first reform scenario. This is because the JDX-plus-tax reform scenario in reality represents a transfer of resources within the economy and does not generate new income.

56.   **The reform scenario leads to slightly greater poverty reduction and lower inequality.** The moderate poverty headcount could fall by an additional 0.3 percentage points, while the Gini coefficient could decline by a quarter points. However, there are several reasons to doubt that this scenario would produce a big boost in poverty reduction. First, consumption per capita does not increase relative to BaU, which means that poverty reduction can come only from distributional changes. Second, some distributional changes are pro-poor, but others are biased against the poorest households. These include the overall increase in general consumption tax (GCT) rates, which hurts poor households that spend all of their income on consumption, and the large increase in demand for investment goods, which do not require rural factors in the production process. As a result, the wages of unskilled rural households decline under the first reform scenario relative to those of unskilled urban and skilled households.

57.   **The second reform scenario strengthens fiscal discipline even more through the adoption of the FRF, which limits fiscal deficits and further improves debt dynamics.** In this scenario—in addition to implementing the tax reform and the JDX—the Government adheres to a fiscal rule whereby the overall deficit is kept below 2 percent of

GDP in every year after 2011, with capital expenditures bearing the brunt of adjustment. This fiscal rule is just an assumption, and other adjustments could be made in the budget to reach a given deficit target—for example, reducing wage or nonwage recurrent expenditures. The slower accumulation of debt in the preceding years brings down final-year debt ratios even further than under the first two scenarios. Instead of 200 percent in the BaU scenario and 120 percent of GDP in the JDX-plus-tax reform scenario, the debt-to-GDP ratio now declines to below 106 percent by 2020. As in the previous reform scenario, the reduced borrowing needs of the Government lessen the crowding out of private-sector investment and yield some small growth spillovers. However, most of the debt reduction in the second reform scenario occurs from slower debt accumulation, not faster growth.

58.   **The third reform scenario assumes higher productivity growth in addition to the tax reform, the JDX, and the FRF.** Jamaica can improve its level of productivity by, for instance, reducing crime, enhancing human capital accumulation, and lowering the debt overhang. In the BaU scenario, productivity grows at an average annual rate of 0.7 percent, similar to the country's observed TFP growth between 2000 and 2008. To reach a post-crisis (2011–20) average real GDP growth of 3.0 percent, productivity growth would have to rise to 3.9 percent a year, or 1.8 percent a year for the entire 2007–20 period. These implied rates of productivity growth would be high by both regional and international standards. However, they underscore the challenges facing an economy where high investment rates have not translated into accelerated growth, population growth is slowing, the educational system has struggled to produce enough skilled workers, and emigration rates are high for skilled workers.

59.   **The fourth reform scenario assumes higher share of skilled workers.** Low labor skills and training are key constraints to growth in Jamaica. The country can increase its growth potential by improving labor skills, retaining educated workers, and reversing the brain drain. In 2007, just 28.7 percent of Jamaica's employed workers were skilled, using the definition of a secondary-school certificate. Productivity, growth, and export performance all rise in an alternative scenario that brings the share of skilled workers to 30 percent by 2020, compared with 28.7 percent in the JDX-plus-tax reform scenario. Overall productivity increases resulting from higher skill content of the labor force and higher incomes associated with higher productivity give rise to greater saving, investment, and capital accumulation. As a result, real GDP in 2020 is 0.7 percentage point higher than in the JDX-plus-tax reform scenario. The real GDP growth rate accelerates because of higher skill content, and gains would likely be larger in later years. Exports in 2020 increase by 0.75 percent relative to the JDX-plus-tax reform scenario, becoming more intensive in manufacturing and less intensive in sectors that tend to use a less skill-intensive input mix, such as agriculture and services. The additional supply of skilled workers lessens the upward pressure on skilled workers' wages. At the same time, unskilled workers become relatively scarcer and therefore receive higher wages than in the JDX-plus-tax reform scenario. However, these changes are quite minor and do not have a material effect on aggregate inequality.

60.   **The simulations show that the tax reforms in FY 2009–10 and the JDX of 2010 were necessary to maintain debt sustainability but may not be sufficient to generate higher growth.** Investment in accelerating labor productivity growth and raising labor's

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skill content can pay important dividends in faster growth and improved export performance. Under the JDX-plus-tax reform scenario, the debt-to-GDP ratio in 2020 is half that of the BaU scenario. Growth performance and poverty reduction also improve in the first reform scenario, and the fiscal position is strengthened substantially. Additional fiscal consolidation—achieved by adhering to the FRF's fiscal deficit rule (applied in the second reform scenario)—can yield further growth and debt reduction benefits, but policymakers must use caution in identifying expenditure cuts. In most cases, capital expenditure is one of the first items cut when nations face overall resource constraints. As the simulations in this report show, however, reducing productive public capital expenditure may lead to lower growth through negative productivity spillovers, largely nullifying the benefits of additional fiscal consolidation. Jamaica's growth performance can be improved by investing in measures to accelerate growth in labor productivity and raising labor's skill content. The simulations do not specify the channels through which these improvements can or should be realized. The key lesson, however, is that these types of reforms, if successful, can exert strong growth effects on real GDP and export performance. Therefore, they should be prioritized and explored in more detail.

PART III: UNLOCKING THE POTENTIAL FOR PRIVATE SECTOR DEVELOPMENT AND GROWTH

PRIVATE SECTOR GROWTH, EXPORTS, AND BUSINESS ENVIRONMENT

61. **The potential for accelerating future growth rests primarily on the ability of Jamaica to remove or at least ease the key obstacles to growth identified in Parts I and II of this report.** Once the key obstacles are removed, Jamaica can further accelerate growth by enhancing private sector development. The analysis in Parts I and II of this report identified a number of growth obstacles—chiefly low productivity caused by deficiencies in human capital, high crime, and distorted tax and incentive regimes. Removing or easing these obstacles will be critical for creating an environment conducive to growth and broad-based economic development. Improvements in the macroeconomic environment should encourage the private sector to invest and produce more. Jamaica's private sector, however, faces additional constraints specific to the business environment. Primary products and tourism have increasingly dominated exports, and the expansion into the textile industry in the 1980s was quickly overrun by pressures from regional and global competitors. Sectoral growth rates in Jamaica have lagged international competitors, and Jamaican exporters have been losing global market share, even in areas of increasing specialization such as tourism. The country has not taken advantage of opportunities to move into new, fast-growing products or to use its current exports as a launching pad for broadening its array of products. These failings point to ways in which Jamaica can further benefit from improving the business environment, increasing export orientation, and laying the ground for a long-term focus on private sector development. Chapter 7 explores the private sector dimension of growth in Jamaica over the past few decades, focusing on sectoral growth, export performance, and the business environment.

62.   **One of the main features of the Jamaican economy's development in the past two decades has been the steady decline in the share of manufacturing and the large increase in the importance of services**. In 1995, the services sector accounted for just over half of total value added; by 2007, it accounted for 70 percent of value added and more than half of exports. The services sector is also the largest employer on the island, averaging 63 percent of employment during 2004–08. Within services, the composition has been relatively stable over the past two decades. The growing importance of services and construction in total employment has come at the expense of employment in agriculture and manufacturing, which have seen their employment shares decrease. Manufacturing was the third most important sector in Jamaica in the 1990s, with 12 percent of total value added, but it decreased to around 9 percent in the 2000s, sinking to fourth below transport and communications. Within manufacturing, most of the decrease in activity came from the decline of the apparel industry in the second half of the 1990s.

63.   **The sectors performed differently in terms of their profitability and their ability to attract FDI**. For the services sectors, large profitability losses occurred in the 1990s, whereas in the 2000s profitability was much more stable. Most types of services neither lost nor gained profitability in the previous decade, although wholesale and retail trade sagged. Finance and insurance was an exception, scoring considerable gains. Among the service sectors for which FDI data are available, tourism led the way, followed by ICT. The performance in nonservices sectors was also diverse, with agriculture, manufacturing, and electricity performing well and mining falling behind.

64.   **As a small, open island economy, trade has historically been very important to Jamaica, representing 111 percent of GDP in 2008**. Jamaica's export performance, however, has been weakening. The importance of exports in overall GDP has dwindled since the early 1990s, driven in part by a dramatic decline of the apparel industry. Although exports have since recovered, their current share of GDP is still below what it was in the early 1990s. Between 1980 and 2008, goods exports grew at an annual average of 4.4 percent, considerably below the Latin America average of 8.9 percent. Consequently, Jamaica's global market share in goods has been falling since 1980, while the average for Latin America has been increasing. Jamaica's main export products—sugar, bananas, and textiles—have suffered greatedly from the erosion of trade preferences. The share of textiles and apparel in total Jamaican exports fell from 26.2 percent in 1995 to 2.3 percent 10 years later. The mining industry remains an important foreign exchange earner in Jamaica, although its performance has varied with swings in global prices. As with trade in goods, Jamaica has lost global market share in tourism and the broader services sector. And like the rest of the Caribbean, Jamaica depends on services for a large share of exports—around 55 percent in 2008. However, even in services exports, Jamaica lost ground. Its share of world service exports stood at roughly 0.13 percent between 1988 and 2000, and it declined to less than 0.08 percent in 2008. Travel is the main foreign exchange earner for Jamaica's services sector, accounting for 72 percent of service exports and 42 percent of total exports in 2008.

65.   **Not only has the performance of leading Jamaican sectors trailed international competitors, but their emergence has also steered the country toward an enclave economy**. Mining, principally bauxite and alumina, is highly capital intensive, but the

initial impact of the investment is not in line with its size, given that most of the capital goods and services used are imported. Mining employs less than 1 percent of the country's labor force and has few linkages with the other sectors of the economy. The tourism industry employs approximately 80,000 people directly and 180,000 indirectly, making it responsible for 10 percent of total employment. In many other countries, tourism has major spillover effects; by contrast, intersectoral linkages from Jamaica's tourism industry are weak and have been exacerbated by the promotion policies aimed at this sector. Similarly, ICT has been a strategic and fast-growing sector, promoted through tax incentives. Some of these benefits are included in the Export Free Zone Act, an arrangement that could prevent the development of strong links between firms located in these zones and other sectors or enterprises.

66. **Jamaican exports have become increasingly concentrated over time, both in terms of products and markets**. The top 10 exported products represented 81 percent of total goods exports in the 1980s and 1990s, and this ratio rose to 88 percent in the 2000s. The country's export concentration is high by both global and regional standards, and it is rising. In the 2000s, Jamaica exported fewer types of products than in the 1990s. Jamaica's diversification in export markets has also been low. The United States is Jamaica's most important export destination by far, and U.S. citizens account for the largest part of tourist arrivals. The United States, the United Kingdom, Canada, and the Netherlands continue to account for most of Jamaica's merchandise exports—as a group, 65 percent in 1991, 71 percent in 2000, and 68 percent in 2008. Between 1998 and 2008, Jamaica had some success in expanding the number of markets reached by its products. However, volumes of products exported did not increase greatly. According to research on opportunities for learning and new product development, a country that is very specialized in one product may have difficulty developing new products and diversifying its production and exports. This is because the actual exportable products are few, and producing new products requires knowledge and technologies that the country cannot easily derive from the production of its few existing goods. In other words, the variety of goods produced and the relevance of the country's production technology for the production of other goods that are widely traded in world markets determine the potential of a country to diversify its production and exports. In Latin America and the Caribbean, only Trinidad and Tobago has a lower potential than Jamaica for producing new goods for export. Jamaica has 15 percent of Brazil's opportunities, for example.

67. **Studies of the Jamaican business climate find that firms encounter important constraints on their operations**. Surveys of Jamaican businesses confirm concerns over productivity, workforce quality, and brain drain as important constraints on their operations. On the Doing Business indicators, Jamaica lags behind its regional competitors in such indicators as ease of paying taxes, enforcing contracts, registering property, and trading across borders. Jamaica's taxation on profits is particularly high when compared with its neighbors. Tax regulations are onerous and cumbersome, including a myriad of tax incentives for various sectors that add distortion and excessive discretion in the allocation of resources. On average, firms make 72 payments a year, which eat up 414 hours of staff time. The Global Competitiveness Index highlights additional areas of the business environment that are particularly challenging for Jamaica. These include concerns over crime and violence and its toll not only in human lives, but also in terms of additional costs

for firms doing business in Jamaica. Jamaica's rate of intentional homicides is much higher than in neighboring countries that compete with Jamaica for FDI. Among the business environment issues, violence and crime may arguably be the most important, given their pervasive effect on many other variables that influence business operations and growth. Greater public-sector efficiency, increased access to finance, a lower tax burden, and improvements in labor-force quality are also areas where respondents say Jamaica needs to do more to improve its competitiveness. Jamaica also underperforms in terms of logistics, compared with some of its neighbors and regional averages. Studies on competitiveness in Jamaica identify the cost of energy as a major impediment to investment.

68.   **The analysis represents an opportunity for public sector reforms that can help improve the country's business environment.** Jamaica can benefit significantly from reforms to improve the business environment, increase export orientation, and enhance private sector development over the long term. An improved environment would stimulate productivity in sectors where Jamaica has a comparative advantage, as well as encourage the emergence of new activities. Meanwhile, the private sector must move away from the poor performance of past decades and enhance competitiveness, improve diversification, and raise productivity by, among other things, investing in on-the-job training for workers.

TWO INDUSTRY CASE STUDIES: FOOD PROCESSING AND TOURISM

69.   **Jamaica can improve its export performance by exploiting the sectors in which it enjoys comparative advantages.** The analysis presented in chapter 7 demonstrates that Jamaica's export performance has long been weak and that poor product and market diversification are major challenges for increasing exports. Chapter 8 reviews the performances and main challenges faced by Jamaica's food-processing and tourism sectors. These sectors were chosen because of their importance to overall economic activity on the island, their capacity to facilitate diversification of the Jamaican economy, and their potential to create linkages with small and medium-sized enterprises (SMEs) and so to support local community development. These sectors are different—one is in manufacturing, the other in services—but they face a similar challenge: how to diversify from their currently predominant activities to better use Jamaica's natural endowments. At the same time, both sectors can improve their linkages to local SMEs, helping to increase demand for goods or services that local firms may be able to provide. In this regard, the two sectors provide a microcosm of the country's development challenges and opportunities.

70.   **While becoming increasingly important for the manufacturing industry, the food-processing sector in Jamaica has nonetheless seen its contribution to total GDP decrease steadily over the past two decades.** The food-processing industry includes activities that add value to agricultural and aquacultural raw materials. These activities include dehydration, production of concentrates, meat packing, milling, and canning. As such, food processing involves a vast array of products—from fruits, vegetables, and staple foods (wheat, corn, rice) to marine and meat products. Total food-processing value added in Jamaica approached US$600 million in 2008. As of June 2010, the food-processing sector, including beverages and tobacco, had 183 registered firms in Jamaica, with 13,950 employees, a number that probably reflects only the formal employment in the industry. Labor force surveys provide a broader measure of employment in the sector. In 2008, they

show that the sector had 29,153 workers. The majority of formal firms are of medium size, employing between 10 and 49 workers. Food processing's share of GDP declined from 6.1 percent in 1992 to 4.3 percent in 2008, mirroring the overall decline of manufacturing's profile in the Jamaican economy. Between 1993 and 2008, the sector actually posted real average growth of –0.2 percent.

71.   **Exports of processed food products have fared better than those of unprocessed products, and some subsectors have shown robust growth**. **Nonetheless, the lack of product and market diversification remains a challenge.** The industry's overseas sales have grown at an average of 4.5 percent since 1997. Some subsectors performed above the industry average, notably beverages. Others have also reported reasonable growth rates, including the category "preparation of vegetables, fruits, nuts, or other parts of plants" and "sauces and spices." These trends suggest the potential for growth and dynamism in Jamaica's food-processing industry. Food-processing industry exports have shifted toward beverages, spirits, and vinegar, while sugar's share has declined. In 2009, beverages, spirits, and vinegar accounted for roughly 65 percent of the food-processing industry's export earnings. Much of that growth came from the development of the ethanol industry, whose exports grew from US$2.5 million in 1998 to US$170 million in 2009. Lack of diversification remains a main challenge, however. Jamaica's food-processing industry is less diversified than in other Caribbean economies. The United States, United Kingdom, and Canada accounted for at least three-quarters of the industry's exports in the past decade, reflecting the fact that country's food-processing exporters have concentrated on reaching the Jamaican diaspora rather than mainstream markets.

72.   **The sauces and spices subsector highlights the potential for growth and linkages to the local economy**. The sauces and spices subsector accounted for about 2.5 percent of total food-processing exports in 2009. While a small subsector, sauces and spices has growth potential because, compared with segments such as beverages, food preparation, and cereals, it has a better overall combination of rising exports, high SME participation, potential linkages to local agriculture, and potential for competitive advantage. The latter includes exporting a value-added product that leverages Jamaica's unique country-of-origin attributes—aromatic flavoring, taste, and pungency. These unique attributes, if packaged together with organic certification, could help Jamaica expand its presence in existing markets, especially in North America and the European Union.

73.   **Jamaica's sauces and spices exports have grown steadily since 2001, but the country can do better.** Jamaica's export performance in its traditional markets has not been encouraging, and the country is not connected to fast-growing world export markets. Jamaica exported US$10.5 million worth of products in 2009, accounting for 0.1 percent of world exports. The United States was the top importer, accounting for more than US$7.3 million worth of products. It is natural for the United States to be Jamaica's top importer because of its proximity and the large Jamaican diaspora in the United States. However, Jamaica could do more to connect to dynamic, fast-growing markets. Imports of sauces and spices by Brazil, Saudi Arabia, and Hungary, for example, have grown at significantly higher rates than Jamaica's current main markets, but Jamaica did not export sauces or spices to any of them in 2009. One way for Jamaica to maintain and expand its market share in the more mature North American and European markets is to focus on emerging

niches, such as organic and ethnic foods. A significant trend in the food-processing industry in recent years has been the exceptional growth in demand for such foods. Worldwide, the organic food market has been growing by 20 percent to 30 percent annually in recent years.

74.   **An industry focus group analysis conducted in Kingston in March 2010 identified the major constraints affecting the country's food-processing industry** (figure 8). Quality, consistency, and reliability in the supply of raw materials were identified both as a constraint and as an important gap relative to some competitor countries. Processors report that they must maintain significant and expensive inventories of semi-processed raw materials in order to compensate for fluctuations in supply. Other important factors that affect availability of raw materials include inadequate infrastructure, lack of adequate knowledge of the best growing techniques, and poor post-harvest care. Packaging is the second-most-important constraint that the focus group identified. Past efforts to address packaging costs were not successful. The high cost of certification to meet minimum market requirements has been a significant constraint to SMEs in the food-processing industry. This constraint is felt more by those firms trying to export, affecting both market access and product competitiveness. Electricity, the availability of skilled labor, cumbersome tax procedures, crime, and low levels of trust in society are also major concerns in the food-processing industry.

Figure 11: Food Industry - Main constraints

Source: (Kim, 2010), N=9

Figure 12: Food Industry - Gap Analysis

Source: (Kim, 2010)

75.   **Strategic actions are needed to loosen constraints and provide a comprehensive approach for the food-processing industry**. Losses in competitiveness and export shares in world markets can be partly explained by the inability of the sector to diversify into more dynamic markets. To reach new markets, however, several links within the food-processing value chain must be strengthened. Among them are these:

- **Sourcing of key inputs**: Efforts to strengthen linkages between agricultural producers and the food-processing industry should be continued; however, current initiatives should be monitored and assessed for effectiveness. Packaging should be promoted as a key element of a strategy to access new markets.

- **Market information:** Industry associations and government trade-promotion bodies will have to do more to provide relevant, targeted, and up-to-date information on market trends and requirements.

- **Access to certification**: For the Jamaican sauces and spices subsector, efforts at improving access to certification should include prioritization of quality standards according to market-access requirements, improving interagency coordination between certification bodies and export-promotion organizations, and creating forums for public-private coordination.

- **Market strategies**: All these initiatives should be part of a wider effort at defining market strategies to improve export performance. Technical assistance may be needed, especially for SMEs, to enhance the capacity of the industry and its firms to formulate better market approaches, including product development and distribution strategies.

76.   **Tourism is one of the Jamaican economy's most important sectors, accounting for about 42 percent of foreign-exchange earnings from the productive sectors (goods and services) in 2008.** Tourist arrivals in 2009 totaled 2.7 million overnight visitors and cruise passengers. The estimated direct contribution of tourism to Jamaica's overall GDP ranges from 7.3 to 8.1 percent annually, the latter figure representing 2009. A broader assessment of tourism's impact on the economy raises the figure around 28 percent of GDP. Direct employment is estimated at an average of 7.5 percent of Jamaica's total (formal) employment for the period 2005–09. In the last year of that period, the hotels and restaurant services sector employed more than 78,000 people. The growth rate in Jamaican tourism has not been sufficient to maintain its share of the island's services economy, nor has it kept up with the rest of the world. Jamaica's average annual growth rate of 5.3 percent for 1991–2009 trailed its Caribbean competitors.

77.   **While Jamaica's tourism sector includes many small and medium enterprises in hotels and restaurants, most of the investment and expansion in accommodations over the past five years has come in the form of larger and all-inclusive hotels**. Jamaica pioneered the concept of enclave tourism through the Sandals all-inclusive hotels. The number of hotels on the island with more than 200 rooms increased from 27 in 2004 to 34 in 2008. All-inclusive hotels have increased their importance in the sector, accounting for 75 percent of total rooms in 2009, up from less than 60 percent in 2004, and 35 percent of all units, compared with 26 percent in 2004. Occupancy rates in all-inclusive hotels are markedly higher than in other types of hotels. Among the vulnerabilities inherent in maintaining a strategy of undifferentiated "sand, sea, and sun" tourism are (i) high "leakage rates" as revenues are repatriated to owners' countries and limited linkages to the rest of the economy, and (ii) sustainability, both fiscal and environmental. The tourism sector's linkages to the overall economy are weak in Jamaica. Given the predominance of large, foreign-owned hotels, most tourism earnings do not stay in Jamaica.[4]

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[4] The leakage rate is generally high for the Caribbean region (it is estimated at 80 percent), one of the highest in the world.

78.   **An industry focus group conducted in Kingston in March 2010 identified constraints affecting the tourism sector** (figure 10). Eco-tourism stakeholders were invited to participate so as to focus the analysis on a subsector that, given Jamaica's natural endowments, could be an important niche for diversification. Environmental degradation has been significant in Jamaica and limits the country's ability to use its natural endowments for a differentiated tourism experience. The industry identified labor skills as another major issue, including absenteeism, poor work ethic and customer orientation, and poor quality of service. Financing facilities do exist for tourism, but most industry stakeholders either did not seem to be aware of them or did not find them sufficient or helpful. Lack of qualified human resources at the managerial level could be a constraint. Safety and security is considered to be a major impediment for travel and tourism activities. This is particularly important in view of the sector's ambition to diversify its base beyond the walls of enclave tourism. Lack of trust and weak observance of a "code of ethics" seem to hinder cluster initiatives aimed at improving the provision of tourism inputs and strengthening linkages to the local economy. Focus group participants and other firms interviewed highlighted the rising cost of electricity in the past few years as a threat to tourism. In addition, firms pointed to the excessive number of taxes as another constraint to business.

Figure 13: Tourism Sector: Main constraints

Source: (Kim, 2010), N=10

Figure 14: Tourism Sector: Gap Analysis

Source: (Kim, 2010)

79.   **The Jamaican government has for some time been aware of the desirability of moving away from large-scale tourism**. In 2002, a Master Plan for Sustainable Tourism was developed, with the main objective of moving the sector toward greater sustainability. The master plan attempted to avoid past implementation problems by creating a shared vision for the tourism industry through an extensive stakeholder-consultation process. The master plan is currently undergoing a mid-term review, providing some encouragement that lessons drawn from its implementation will soon become available to inform and guide current and future tourism policy initiatives.

80.   **Strategic actions are needed to address constraints and provide a comprehensive approach to sustainable tourism**. The necessary strategy can be achieved by enhancing existing efforts, introducing environmental mainstreaming into policy design,

and increasing private participation in providing finance for sustainable tourism. Some specific points to be addressed are the following:

- **Crime**: Taking tourists away from the highly secluded, all-inclusive resorts to areas of natural beauty and interest around the island will require special attention to safety and security.
- **Finding niches:** Mainstreaming sustainable tourism involves bringing together public-private organizations that will commit to promoting tourism through carbon-clean, green, ethical, and high-quality projects.

- **Financial issues**: The Government could improve access to existing funding mechanisms that promote sustainable tourism, such as the Tourism Enhancement Fund. Greater efforts to spread the word about the program could generate quick wins.

- **Private sector initiatives**: Green funds could be used to increase private participation in improving sustainable tourism. Green funds are global, private sector driven mechanisms to increase access to finance for environmental sustainability.

81.   **Enhancing public-private dialogue and labor skills**. The food-processing and tourism industries, along with other industries, can benefit from greater public-private dialogue. Competitiveness councils (or variations thereof) that bring together high-level government decision-makers, business executives, and academics have been used to institutionalize public-private mechanisms in many countries. The challenges of Jamaica's food-processing and tourism industries also point to the need to improve the quality and relevance of the education system, including vocational training. Here, too, better public-private dialogue and coordination could help with the feedback process.

Table 4: Matrix of Policy Options to Remove Key Obstacles to Growth

Constraints to Growth	Policy Recommendations	
To be implemented by government (G) or by private sector (PS)		
	Short Term	**Medium Term**
Issue 1: High crime Jamaica's high-crime environment presents a clear constraint to economic development.	*Analysis of crime prevention policies is beyond the scope of this CEM. However, some widely recognized policies are noted below. (Also see UNODC and The World Bank 2007).* Prevent crime through the study and design of environments to encourage desirable behavior and discourage antisocial behavior. **[G]** To address issues of youth violence, borrow from the toolkit of evidence-based programs from other regions, such as early-childhood-development and mentoring programs, interventions to retain high-risk youth in secondary schools, and opening schools after-hours and on weekends to offer young people attractive activities to occupy their free time. **[G]** Transform the culture of violence by starting a strong media campaign to build awareness of the sanctity of life and to encourage citizens to resolve conflicts in a peaceful manner. **[G]**	*Analysis of crime prevention policies is beyond the scope of this CEM. However, some widely recognized policies are noted below. (Also see UNODC and World Bank 2007)* Improve police and justice services. Use criminal-justice approaches to reduce organized crime, drug trafficking, and other problems not susceptible to prevention approaches. **[G]** Given that Jamaica is a transit country and not a producer of cocaine, complement interdiction by strategies outside the region and seek assistance from destination countries to support interdiction efforts. **[G]**
Issue 2: Poor quality of human capital Deficiencies in human capital and entrepreneurship can be traced to deficiencies in education, a poorly trained labor force, and the migration of skilled labor.	Increase competition in all markets. **[G]** Design strategies for the development of pre-employment skills to prepare future workers. Invest more in early-childhood education, particularly in programs that improve quality. Increase investment in technical and vocational education and training (TVET). Modernize curricula and equipment, and offer better training for trainers, particularly in emerging sectors (ICT, telecommunications). Emphasize measuring learning outcomes and applying the data obtained. Use incentives provided by financing, institutional autonomy, and accountability mechanisms to steer the system toward producing better education outcomes. **[G & P]**	Continue promoting competition in all markets. **[G]** Improve the formal education system focusing on critical thinking and innovation. **[G]** Improve school-system quality and increase investment in tertiary and TVET. **[G]** Consider policies to turn brain drain into a process of brain circulation by creating opportunities and channels for highly skilled Jamaicans living abroad to engage in productive investment in the country. **[G & P]**

To be implemented by government (G) or by private sector (PS)		
Constraints to Growth	**Policy Recommendations**	
	Short Term	**Medium Term**
	Invest in on-the-job training to upgrade workers' skills. Involve enterprises and employers' organizations in the definition of qualifications, occupational standards, training delivery, and certification. Encourage a shift from input-based to outcome-based training through a competency-based approach. **[G & P]** Use active labor market training programs to reintegrate the unemployed and disadvantaged back into the workforce. Develop and implement a strategy for increasing opportunities for adults to upgrade or acquire new skills. Design and implement entrepreneurship programs that provide training in basic business skills, especially for the young. **[G & P]**	
Issue 3: Distortionary tax policy, complex tax system, and challenging business environment Distortionary tax incentives and the promotion of enclave development produce few spillovers to the rest of the economy. A complex tax system and problems related to paying taxes reduce tax compliance and discourage business development. Economic activity is highly concentrated. Jamaican exporters have lost competitiveness and have not taken advantage of emerging opportunities in the global marketplace. Crime and violence,	Freeze the issuance of new tax incentives and reduce discretionary tax incentives (ongoing). **[G]** Review and initiate consultations on tax exemptions (with a view to reducing and phasing out a majority of them). **[G]** Initiate a dialogue on how the tax base can be effectively broadened, drawing on existing reviews of the tax system (Matalon report and others). **[G & P]** Continue unifying tax policy and simplifying the process of paying taxes. **[G]** Cease relying on incentives to attract investment and focus on addressing information and coordination failures. Improve existing information sources to produce up-to-date and broad knowledge about market trends and requirements, particularly for small and medium-sized enterprises (SMEs). Widen efforts to define market strategies for better export performance. Improve intra-industry	Slash tax incentives and make the system transparent. **[G & P]** Consider a new tax code to make the tax system business-friendly and conducive to economic growth through simplification of policies and procedures for payment. **[G & P]** Improve information dissemination and eliminate coordination failures. Provide relevant, targeted and up-to-date information on market trends and requirements, particularly to SMEs. Follow emerging opportunities in world markets and encourage local producers to respond to such opportunities. Facilitate technical assistance, especially for SMEs, to enhance their capacity to formulate better market approaches, including product development and distribution strategies. Encourage diversification of production and export markets. **[G & P]** Continue improving the access of firms to existing funding mechanisms and facilitate greater access to global

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Constraints to Growth	Policy Recommendations	
	To be implemented by government (G) or by private sector (PS)	
	Short Term	**Medium Term**
complicated tax rules, an inefficient bureaucracy, and poor logistics have stressed the business environment and constrained firms' growth.	collaboration (for example, the linkages between agricultural producers and the food-processing industry). **[G & P]** Widen private firms' access to existing funding mechanisms (for example, the Tourism Enhancement Fund that promotes sustainable tourism). **[G & P]**	resources (such as the Earth Lung project, the Global Environment Facility, and green funds that aim to increase private participation in sustainable tourism). **[G & P]** Reduce the cost of energy (electricity). **[G & P]**
Issue 4: Weak public financial management and public service provision Policy and institutional weaknesses in the area of public financial management create fiscal distortions and hamper growth.	Develop a clearer set of guidelines for budget preparation and in-year implementation. Reform the practice of in-year budget reporting to Parliament and supplementary budgets. Institute a regular session of the House approximately six months after the start of the fiscal year to hear revenue and expenditure performance. Disclose complete and comprehensive information on budget results through annual budget reports. **[G]** Conclude development of a scoring system for public investment proposals (ongoing). Start developing a comprehensive pipeline of projects (including projects proposed by public bodies and projects to be funded by domestic and foreign sources) with an eye to economic and social development. **[G]** Continue divestment of public bodies. Improve fiscal prudence and management of public bodies. Increase the realism of corporate plans and accuracy and the timeliness of reporting. Identify selected (2–3) public bodies that create fiscal risks (e.g., JUTC) and start a public debate on options. **[G & P]** Consolidate the legal framework for debt management through the passage of a modern law that will provide a clear framework for the management of public debt and government guarantees. Fully implement the new functional	Consider developing new organic budget legislation. Improve the institutional framework for budgeting with a view to (i) enabling more strategic decision-making and (ii) ensuring greater budget credibility. Consider instituting a more specialized Standing Budget Committee in the House (with approximately 20 members) and ensure that members have access to professional analytic support. **[G]** Develop legislation and implementing regulations that will set out key principles for public investment management. Define the roles of the Planning Institute of Jamaica, the Ministry of Finance and Public Service, and sector ministries with respect to public investment management. Put in place the technical and political mechanisms (scoring, cabinet retreat) for deciding on budget allocations for projects in the pipeline. **[G]** Continue divestment of public bodies. Build mechanisms for independent verification of reporting by remaining public bodies. Generate a clear public commitment with regard to burden and risk sharing between beneficiaries (users, employees, managers) and general taxpayers for the selected public bodies. **[G & P]** Separate debt management from cash management. Facilitate creation of a

| | Policy Recommendations | |
Constraints to Growth	**Short Term**	**Medium Term**
To be implemented by government (G) or by private sector (PS)		
	organizational structure of the government's debt-management unit, with a front, middle, and back office. Develop and maintain a comprehensive and methodologically sound medium-term debt-management strategy. **[G]** Improve public service provision. Simplify customs procedures and increase quality of public service provision. **[G]**	formal calendar for the issuance of debt. Improve institutional capacity for preparing medium-term debt-management strategies with sound analytical underpinnings. Prepare and publish comprehensive annual debt reports. **[G]** Create an efficient and effective public sector that provides high-quality services transparently. Create an efficient customs system capable of competing with other countries in the region. **[G]**

PART I: GROWTH OBSTACLES IN JAMAICA

The first part of the report looks at key growth obstacles in Jamaica. It puts Jamaica's real GDP growth in an historical context to assess longer term performance and identify stylized facts about the Jamaican economy. It also looks at poverty and income distribution dynamics. It then presents a comprehensive growth diagnostics analysis to identify the most binding obstacles for growth in Jamaica by filtering a large set of possible economic or social factors that might be hindering growth.

CHAPTER 1.   LONG-TERM GROWTH IN JAMAICA AND STYLIZED FACTS

This chapter puts Jamaica's real GDP growth in an historical context to assess longer-term growth performance and the factors behind it. The chapter also compares Jamaica's growth performance with other countries to establish international benchmarks. The objective is to achieve a better understanding of Jamaica's historical growth performance. The analysis indicates that Jamaica's economic growth has been low for several decades and Jamaica lagged most regional comparators. Jamaica was one of the world's slowest growing economies. Stylized facts about the Jamaican economy includes poor growth across the board in all sectors, an "enclave" development pattern, very low productivity levels and growth, high investment to GDP ratios, high public debt ratios and mixed indicators of business environment.

A. INTRODUCTION

1.1   **Jamaica had low economic growth rates despite having one of the highest investment to GDP ratio among developing countries.** The average real GDP per capita growth rate over the past 30 years amounted to 1 percent per year. In fact, excluding the exceptional growth in the run-up to the 1996 crisis, the real GDP per capita has on average stagnated (see Figure 1.1). Jamaica is considered to be a puzzling case because its low growth rates cannot be a priori attributed to low investment rates. In Jamaica, total fixed investment averaged 25 percent of GDP during 1960-2008. Also, Jamaica has a strong growth potential with its endowment in natural beauty and mining resources. Given its closeness to the US, the world's largest market, Jamaica could also benefit from global integration and trade flows. Nonetheless, Jamaica's growth has underperformed most other countries and growth has been very volatile, reflecting the country's vulnerability to natural disasters, adverse external shocks, and shifts in investor sentiment.

1.2   **Several studies have pointed out various explanations for the puzzling combination of high investment and low growth. However, these explanations were not sufficient for understanding Jamaica's longer term growth performance.** The explanations put forward to describe the observed low growth include (i) potential errors in measuring GDP growth; (ii) high replacement investment due to chronic natural disasters; (iii) distorted capital accumulation due to high level of crime; (iv) insufficient public investment due to debt overhang; and (v) large investment in construction, a significant part of it could be unproductive. None of these factors explains the puzzle. For instance, even if rising informality could explain low official growth numbers in the 1990s, it cannot explain why the growth has been low for four decades. Electricity sales—an indicator used to measure informality—increased significantly more than the real GDP growth throughout the 1990s, but it converged to the real GDP growth rate in the 2000s, implying that the level of informality might have leveled off (see chapter 3, C.1).

1.3   **This calls for a re-examination of Jamaica's low growth high investment puzzle.** Understanding Jamaica's growth process is key to increasing economic performance, improving debt sustainability, and alleviating poverty. This chapter describes

the country's growth process and policy choices in historical perspective and presents the main stylized facts pertinent to where the country is today. Building on these findings, the following two chapters will attempt to identify the key growth impediments in Jamaica.

1.4 **The reminder of the chapter is structured as follow**: Section B provides a brief economic history of Jamaica, section C evaluates Jamaica's growth performance in an international context and compares it with peer countries, section D identifies stylized facts about the Jamaican economy and Section E offers concluding remarks.

B. BRIEF ECONOMIC HISTORY OF JAMAICA[5]

1.5 **The growth strategy in the 1950s and 1960s was one of "industrialization by invitation."** First formulated by Nobel Laureate Sir Arthur Lewis (1915-1991), the strategy envisaged attracting foreign capital through a series of incentives. The outside investment was a means of overcoming obstacles to industrial development imposed by the Caribbean economies' small volume of trade. It was also a means of acquiring the entrepreneurial skills and capital resources often lacking in small developing economies. In this period, Jamaican government policies were designed to promote foreign direct investment (FDI).[6] Targeted sectors were mining, manufacturing, tourism, and banking and insurance.

1.6 **Jamaica achieved significant growth rates in the 1950s, while its economic structure went through major changes** (see figure 1.1). The Jamaican economy started the 1950s with fast growth facilitated by development of new activities, mainly mining and tourism. Bauxite was first produced commercially in Jamaica in 1952 by Reynolds Metals Ltd., and in only six years, the country became the world's largest bauxite producer. Tourism was also developing rapidly in this period, spurred by government incentives and transport industry developments at the global level that allowed for longer trips. GDP per capita grew around 6 percent a year in the 1950s.[7] Labor productivity grew even faster—at 7.3 percent a year (Klinov, 1986). In the 1960s, however, the GDP growth rate slowed to 2.9 percent and labor productivity ebbed to 3.5 percent. At the time, the economy's structure shifted towards manufacturing and services. Agriculture's contribution to GDP went from 30.8 percent in 1950, to 12.9 percent in 1960, and to 6.7 percent in 1970.

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[5] Before 1985, the text is based on Meditz and Hanratty (1987).

[6] Following independence, English-speaking Caribbean countries passed a series of fiscal incentives to promote FDI, created the Caribbean Community (CARICOM), and implemented a regional approach to industrialization and tax incentives polices during the 1970s (the Agreement for the Harmonization of Fiscal Incentives of 1973). This agreement conceived fiscal policy as a microeconomic tool providing incentives to develop the manufacturing, mining, and tourism sectors. More specifically, the agreement sought to promote investment from domestic and foreign sources; reduce competition among members by placing a ceiling on benefits; target incentives at enterprises with high value added; and seek regional convergence by giving greater fiscal incentives to the Caribbean's less developed countries (LDCs). The policy instruments included profit tax holidays, tariff exemptions, and allowances for extra-regional exports following the tax holidays' expiration, dividend payments, loss-carry forward, and depreciation. Implementation was carried out at national level, allowing fiscal incentives to differ across countries in terms of targeted firms and sectors. In particular, Guyana and Jamaica were more concerned with import substitution than with export promotion.

[7] Real GDP per capita (Constant Prices: Laspeyres), 2005 constant prices, according to Penn Table Statistics.

Figure 1.1: Performance of the Jamaican Economy, 1953-2007

Source: Penn Table

1.7 **However, the growth was not sufficiently inclusive, leading to high income inequality and increasing political economy challenges**. McLure (1977) – quoted in Alleyne et al. (2004)– compares the percentage of income received by the top 10 percent of income earners for 23 developing and developed countries between 1947 and 1972. The findings show that inequality in Jamaica with 47.8 share of total income for top 10 percent was extremely high even for developing countries standards. Barbados, on the other hand, had a more equal distribution and with 34.2 percent share for top 10 percent income earners was close to many developed countries. Ahiram (1964) using 1958 dataset reports a Gini coefficient of 0.56 for Jamaica.

1.8 **Economic growth stopped in the 1970s, the result of a loss of competitiveness due to high international oil prices and, more important, internal factors**. In 1972, Jamaica made a significant change in its development strategy. Perhaps because economic growth was not inclusive, and facing the stress of the oil crisis, Jamaica decided to adopt an import substitution development strategy. Guyana made a similar transformation. However, other countries in the region, such as Barbados, reinforced their prevailing private sector led growth strategies. In 1974, the government turned to an extensive state-intervention model: nationalization of several companies, creation of import barriers in the form of higher tariffs and outright bans on foreign products, and imposition of strict exchange controls. Some of the policies implemented by the government from 1972-1976 were: (i) agrarian reform to redistribute concentrated land holdings; (ii) nationalization with compensation of all foreign-owned utility companies—electricity, telephone, and public transportation companies; (iii) government purchases of sugar factories and the foreign-owned Barclays Bank; (iv) higher taxes on bauxite production; (v) purchases and increases in equity positions in aluminum companies,[8] and (vi) purchases of hotels and lands.

1.9 **The deteriorating economic situation and increasing political violence during 1970s led to a big decline in GDP.** Expansionary fiscal policies—at a time of worldwide inflation and recession—created chronic budget deficits in Jamaica, which increased from 6 percent of GDP in 1974 to 18 percent of GDP in 1980. The deficits were financed with

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[8] Between 1974 and 1978, Jamaica and the international companies concluded agreements that gave Jamaica a 51 percent stake in both the Kaiser and Reynolds operations, a 6 percent share of Alcoa's, and 7 percent of Alcan's. Revere Aluminum and the government could not agree on a price, resulting in Revere's withdrawal from Jamaica. The government also purchased much agricultural land surrounding the bauxite mines. Throughout the proceedings, the government was able to acquire the companies' landholdings at book value.

external debt and borrowing from the Bank of Jamaica. As a result, external debt reached 82 percent of GDP by 1980, compared to 57 percent at the beginning of 1970s. At the same time, inflation increased while investment to GDP ratio declined. There were significant capital flights and emigration of skilled labor. The striking result was a sharp decline of 18 percent in GDP from 1973 to 1980.

Box 1.1: Economic Growth in Barbados and Jamaica

In a recent work, Henry and Miller (2009) have pointed to the 1970s as the time when the countries embarked on different paths.

When the 1973 oil price shock hit, Jamaica and Barbados, like most other countries, began to experience higher inflation and slower growth. The Jamaican government chose to respond to the nation's economic woes by running large and persistent fiscal deficits financed by printing money, nationalizing companies, erecting import barriers, and intervening extensively in the economy. Barbados, on the other hand, avoided nationalization, kept state ownership to a minimum, and adopted an outward looking growth strategy while keeping government spending under control.

Barbados' different way of solving economic problems was even clearer after the 1970s. In 1993, the country was able to avoid devaluation by making hard choices. The government negotiated with firms, unions, and workers to institute a one-time wage cut. Firms promised to moderate price increases, and all parties agreed to the creation of a national productivity board to provide better data for future negotiations. Unlike Barbados, Jamaica devalued its currency several times since 1975.

Seaga (2006) and others claimed that Barbados' fixed exchange rate policy allowed it to grow faster than Jamaica, but Henry and Miller regard this as spurious. They argue that Barbados' exchange rate did not cause its economy to outperform Jamaica's; rather, the proximate source of Barbados' superior performance was a set of growth-facilitating policies—monetary restraint, fiscal discipline, openness to trade, and ultimately wage cuts to restore competitive unit labor costs. In contrast, Jamaica's policies were never consistent with maintaining commitment to any exchange rate parity the government might have wanted to adopt.

Growth Performance

Jamaica, 1950 to 2000	Jamaica and Barbados, compared with the United States

Source: IADB, Country Strategy, 2007

Auguste (2010) points out that prior to independence in 1966, Barbados showed several features that would be key to its later economic performance: Barbados was the only colony that had maintained uninterrupted representative government under British rule, starting in 1639. In addition, due to the introduction of universal voting rights in 1951, the transition to independence was a smooth one.

At the end of the colonial period, Barbados was generally better prepared to meet the challenges of independence and enjoyed more favorable long-term prospects. The country had a sense of national unity; political experience based on democratic foundations; a seasoned civil service that provided administrative capacity; and a sound economy.

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(Box 1.1. cont.)

- The country was faster and more successful than other Caribbean countries in its diversification strategy. This in part can be explained by the early government action. Da Costa (2007) also points to Barbados' smaller and less efficient sugar production units and its favorable investment climate as factors in this success.
- From 1940, the country had a tradition of pursuing medium-term plans. The approach towards development planning has been largely "indicative," with the government providing the institutional and policy framework and the environment for the private sector to provide the stimulus for economic activity.
- In the pre-independence period, Barbados maintained balanced budgets or small deficits, and unlike other Caribbean colonies, it did not rely on annual grants from the United Kingdom. This well organized fiscal policy made it possible for the country to use early incentives to promote FDI.
- Since the first election, large investments in human capital forged a well-educated workforce, giving Barbados a literacy rate of 83 percent at the time of the independence, the region's highest. Free secondary education was introduced by 1962, and the country's outlays on public health are relatively high at around 18 percent of total expenditures.

1.10   **In 1980, the government undertook adjustments to support private-sector initiative and revert to more market-friendly policies**. The government followed an export and FDI promotion development strategy emphasizing labor-intensive light manufacturing. It targeted key subsectors—garments and sewn products, footwear and leather products, construction materials, food and agro-industry, automotive products, furniture, electronics, and electrical products. Several Export Free Zones were created. In this period, the Caribbean Basin Initiative was implemented, providing duty-free imports of goods destined to the United States. The government also implemented structural adjustment policies aimed at reducing state ownership in productive enterprises, such as agriculture, hotels, oil refining, and bauxite mining. Further policy changes introduced in the late 1980s and early 1990s included removal of price controls, trade liberalization, tax reform and financial system restructuring.

1.11   **Economic growth in the early 1980s remained poor despite the efforts to revitalize market economy**. With Jamaica facing an adverse international context, per capita GDP declined by 7.5 percent in constant terms from 1981 to 1985. Fiscal deficits and public debt remained high. At the sectoral level, only tourism recovered rapidly in the early 1980s. The earlier policies in the mining sector encouraged foreign firms to develop new resources in Brazil, Australia, and Guinea, countries later revealed to be more competitive. During the first half of the 1980s, world prices for bauxite entered a prolonged depression because of oversupply, and Jamaican bauxite production declined drastically as half of the six North American companies ceased production. The statist reform was extremely costly for Jamaica, without any clear gain, and the market-oriented reversal in early 1980s started to bear fruits only after years. By 1985, real GDP per capita was 35 percent lower than in 1972, retreating to its 1960 level.

1.12   **GDP growth accelerated in the second half of 1980s and into the early 1990s, until the major financial crisis in 1996.** The real GDP per capita grew at an average annual rate of 4.3 percent in 1985-1990 and 3.2 percent in 1990-1995. Nonetheless, real GDP per capita in 1995 was still below its 1972 level. The financial crisis in 1996 interrupted the growth process once again and brought a significant increase in public debt.

Key ingredients were a rapid financial liberalization that created regulatory arbitrage and made it difficult for financial supervision to keep pace, management and governance failures in several financial firms, and differentials in the reserve requirements for different types of financial institutions, with especially high requirements for banks.[9] Institutions pursued aggressive growth strategies, relying on short-term deposits or deposit-like instruments to fund longer-term investments and lend to well-connected parties. Subsequent monetary tightening squeezed liquidity and, as perceived risks escalated, depositors and investors withdrew funds. According to the IMF (2006), the financial crisis cost Jamaica almost 40 percent of GDP, increasing significantly the government (domestic) debt and encouraging consolidation in the banking and insurance sectors.

1.13 **In addition, a sharp decline in competitiveness took place during the 1990s.** The real exchange rate appreciated significantly during this period, making it difficult for suppliers of locally produced goods and internationally traded services to compete effectively (see figure 1.2).

Figure 1.2: Real Effective Exchange Rates

Source: STATIN, WEO April 2010, IFS, staff calculations

1.14 **Jamaica's economic performance since 1990 has been rather poor, according to most indicators**. Over the past 20 years, real per capita GDP has increased at an average of only 1 percent. Only a few sectors have been relatively dynamic, and the unemployment rate remained above 10 percent. Liberalization of trade worldwide has affected Jamaica, costing it the early tariff advantages it had enjoyed. This affected sugar and bananas production, two traditional products, as well as the garment industry, which had flourished in the 1980s.

C. JAMAICA'S GROWTH PERFORMANCE IN INTERNATIONAL CONTEXT

1.15 **Jamaica was one of the world's slowest growing economies in the past four decades.** In the 2000s, Jamaica's average real GDP growth rate ranked 180th out of 196 countries. Jamaica's ranking in terms of average real GDP growth continuously deteriorated during 1960-2008. Jamaica also lost ground against countries in Latin America and the Caribbean. Its ranking in the 2000s was 29th out of 34 countries. Jamaica also

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[9] See IMF 2006 and Worrell, Cherebin and Polius-Mounsey (2001).

underperformed compared to other economies with similarly high debt-to-GDP ratios (see table 1.1).

Table 1.1: How Jamaica Compares Internationally on Average Real GDP Growth

	1960-69	1970-79	1980-89	1990-99	2000-2008
Jamaica	4.4	1.2	1.7	2.3	1.3
Ranking *	72	128	129	119	180
(in the world)	(of 118 countries)	(of 132 countries)	(of 170 countries)	(of 193 countries)	(of 196 countries)
Ranking *	18	29	20	26	29
(in Latin America and the Caribbean)	(of 27 countries)	(of 31 countries)	(of 33 countries)	(of 34 countries)	(of 34 countries)
World	5.4	4.1	3.0	2.7	3.1
Latin America and the Caribbean	5.3	5.7	1.8	2.9	3.6
East Asia and the Pacific	3.8	7.2	7.7	8.2	8.7
Europe and Central Asia	n.a.	n.a.	n.a.	-1.6	5.9
Middle East and North Africa	7.3	6.4	2.4	4.3	4.5
South Asia	4.2	3.0	5.6	5.3	6.8
Sub-saharan Africa	4.6	4.1	2.2	2.0	4.8
Selected Latin American and Caribbean countries					
Argentina	4.1	2.9	-0.7	4.5	3.9
Barbados	6.4	3.3	2.2	0.9	-0.6
Brazil	5.9	8.5	3.0	1.7	3.7
Chile	4.4	2.5	4.4	6.4	4.2
Colombia	5.1	5.8	3.4	2.9	4.4
Costa Rica	5.9	6.3	2.3	5.5	4.6
Dominican Republic	4.8	8.2	3.8	4.6	5.6
Trinidad and Tobago	5.0	4.6	-1.3	2.7	7.5
Uruguay	1.3	2.7	0.7	3.3	2.9
Other selected comparators (Debt over 80 percent of their GDP)					
Angola			4.2	1.0	12.2
Bulgaria			3.9	-3.0	5.6
Congo Republic	3.7	0.3	1.8	-5.5	3.1
Cote d'Ivoire	8.7	7.6	-0.2	2.6	0.1
Indonesia	3.7	7.8	6.4	4.8	5.2
Lebanon			-42.5	10.2	4.1
Madagascar	2.8	1.5	0.4	1.6	4.0
Nicaragua	7.4	0.7	-0.8	3.0	3.5

Source: World Bank (World Development Indicators)

1.16   **Jamaica also fell behind most of its per capita income peers**. Comparing Jamaica with its closest 19 peers in per capita GDP shows that the country has lost ground. Between 1970 and 2008, Jamaica's real per capita GDP growth was 13 percent, and its rank within this group of 20 countries fell from seventh to 18th. This growth rate was the lowest in the entire group. The best performer was Taiwan, China advancing from 15th in 1970 to second in 2008, growing by 747 percent (see table 1.2).

Table 1.2: Real per capita GDP in Jamaica and its peers, 1970-2008

		1970			2008	% change
1	Trinidad and Tobago	4,614.5	1	Singapore	27,990.7	517.8
2	Singapore	4,530.7	2	Taiwan, China	18,148.9	747.6
3	Uruguay	4,495.9	3	Korea, Rep.	15,446.6	674.8
4	Portugal	4,282.1	4	Portugal	11,412.6	166.5
5	Oman*	4,196.4	5	Trinidad and Tobago	10,981.3	138.0
6	Mexico	3,576.4	6	Oman*	10,018.9	138.7
7	**Jamaica**	**3,355.4**	7	Uruguay	8,788.0	95.5
8	Gabon	3,254.1	8	Seychelles	8,267.4	212.3
9	South Africa	3,104.0	9	Mexico	6,591.5	84.3
10	Panama	2,741.2	10	Chile	6,228.7	182.7
11	Seychelles	2,647.2	11	Hungary	6,228.5	163.5
12	Costa Rica	2,370.7	12	Latvia	6,034.5	188.9
13	Hungary	2,363.5	13	Panama	5,587.1	103.8
14	Chile	2,203.2	14	Turkey	5,240.5	151.7
15	Taiwan, China	2,141.2	15	Costa Rica	5,195.5	119.2
16	Latvia	2,088.7	16	Brazil	4,447.6	123.4
17	Turkey	2,082.4	17	Gabon	4,157.0	27.7
18	Peru	2,074.4	**18**	**Jamaica**	**3,792.4**	**13.0**
19	Korea, Rep.	1,993.6	19	South Africa	3,763.8	21.3
20	Brazil	1,990.7	20	Peru	2,923.0	40.9

Source: World Bank (World Development Indicators)

1.17 **Growth in Jamaica has not only been low, it has also been volatile.** Figure 1.3 displays the variation coefficient of real GDP growth relative to growth performance for Jamaica and selected Latin American and highly indebted countries in 1960-2008. Jamaica is one of the countries with the most unfavorable combination of growth and volatility.

Figure 1.3: GDP Growth and Volatility
(Latin American and Highly Indebted Countries)

Source: World Bank staff calculations based on WDI

D. STYLIZED FACTS ABOUT THE JAMAICAN ECONOMY

D.1. Poor Growth across the Board

1.18 **Among 46 economic subsectors, only financial service and telecommunications had GDP growth rates of more than 4 percent a year since 1992.** During this period, 18 subsectors declined and 19 grew less than 2 per cent a year (see figure 1.4 and table 1.4). Even Jamaica's best performing sectors—considered modern, dynamic and export-oriented and attracting most FDI inflows—underperformed compared to what these same sectors achieved in the rest of the world (see table 1.3). Communications, an export-oriented sector with the period's highest GDP growth rate, has lost global market share (exports in Computer, Communications and Other Services went from 0.07 percent of world exports in 1999 to 0.02 percent in 2008). Similarly, alumina exports have been losing market share, growing below the world average in nominal terms.

Figure 1.4: Sectoral Growth in Jamaica

Table 1.3: Commercial Service Exports

Annual Growth Rate of Commercial Service Exports (USD)

	1988-2008		2000-2008	
	World	Jamaica	World	Jamaica
Computer, communications and other services	11.4%	10.5%	13.6%	-1.0%
Insurance and financial services	11.1%	10.5%	14.1%	13.6%
Transport services	8.3%	5.9%	11.6%	4.2%
Travel services	7.9%	6.7%	9.7%	5.1%

Source: Staff calculations based on WDI Data

Table 1.4: Sectoral Growth and Contributions to GDP

Industry	GDP-share			GDP annual growth rate			Contribution to GDP growth rate
	1992	2000	2008	1992-2000	2000-2008	1992-2008	
Agriculture, Forestry & Fishing	6.7%	5.9%	4.8%	-0.8%	-1.1%	-1.0%	-0,06%
Mining & Quarrying	3.5%	3.9%	3.8%	1.9%	1.3%	1.6%	0,06%
Manufacture	14.1%	10.5%	8.5%	-3.0%	-1.1%	-2.1%	-0,23%
Electricity & Water Supply	2.5%	3.2%	3.4%	3.6%	2.3%	2.9%	0,09%
Construction	9.6%	7.9%	8.2%	-1.8%	1.9%	0.0%	0,00%
Wholesale And Retail Trade	19.0%	19.6%	18.9%	1.1%	1.0%	1.0%	0,20%
Hotels & Restaurants	3.9%	4.9%	5.5%	3.7%	3.1%	3.4%	0,16%
Transp., Stor. & Comm.	6.3%	10.9%	12.1%	7.9%	2.8%	5.3%	0,47%
Finance & Insurance Services	9.5%	9.8%	11.5%	1.1%	3.5%	2.3%	0,24%
Real Estate, Renting & Business	9.4%	9.7%	9.8%	1.1%	1.6%	1.4%	0,13%
Government Services	13.9%	12.6%	11.8%	-0.5%	0.6%	0.1%	0,00%
Other Services	6.9%	6.3%	6.9%	-0.4%	2.6%	1.1%	0,06%
Gross V.A.At Basic Prices				0.7%	1.5%	1.1%	1,1%

Source: Staff calculations based on Bank of Jamaica statistics

D.2. "Enclave" Growth

1.19   **The leading sectors in the Jamaican economy followed an "enclave" development pattern, which prevents important spillovers to other sectors.** Mining—predominately bauxite and alumina—is highly capital intensive. Most of the capital goods and services are imported, and the sector employs less than 1 per cent of Jamaica's labor force, providing few spillovers in other sectors[10]. The tourism industry is responsible for 10 percent of total employment (Economic & Social Survey, 2007) but it has developed in a way that prevents strong inter-sectoral linkages. Enclaves are likely to be a response to high crime rates, and fiscal incentives that grant duty concessions to imported food and favor large-scale, capital-intensive hotels. Information and Communication Technologies (ICT) has been a strategic sector and promoted through tax incentives. Some of these benefits are included in the Export Free Zone Act arrangements that could prevent strong links between firms located in these zones and other sectors or enterprises.

1.20   **The rest of the economy, although diverse, consists of traditional sectors.** These are older manufacturing industries, including garment production, and agriculture. Manufacturing and agriculture together amounted to about 13 percent of GDP by 2008 and have been declining (from 21 percent in 1992) because of the economy's fall in competitiveness, loss of preferences and reduction in import barriers.

D.3. Low Productivity

1.21   **Another salient feature of Jamaica's economy is its very low levels of productivity and productivity growth**. Bartelsman (2002) estimates total factor productivity (TFP) for 1991-2000, while Thomas and Serju (2009) calculate TFP for 1990-2005. This report also calculates TFP for 1990-2008. Using aggregated data, all three studies find negative TFP growth for Jamaica in the past two decades (see table 1.5).[11] Capital stock and sectoral investment data do not exist at sectoral level in Jamaica. Therefore, it is not possible to decompose productivity changes at sectoral level. However, data allows for analyzing labor productivity at the sectoral level. Estimations for 1992-2008 show that labor productivity was negative in eight of 10 sectors and it was positive but negligible in manufacturing and transport and communication (see figure 1.5).

Table 1.5: Jamaica: Growth Accounting

	Bartelsman (2002)			Thomas and Serju (2009)				WB CEM
	1991-1996	1996-2000	1991-2000	1990-1995	1996-2000	2001-2005	1990-2005	1990-2008
Output growth	1,4	-0,2	0,7	2,4	-0,1	1,5	1,3	0.9
Capital growth	1,3	0,8	1,1	1,4	6,5	2,7	3,4	3.6
Labor growth	0,8	-0,4	0,3	0,2	-0,3	0,0	0,0	0.3
TFP growth	-0,7	-0,7	-0,8	0,9	-6,3	-1,2	-2,0	-0.7

Source: Bartelsman (2002), Thomas and Serju (2009) and author's calculations

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[10] Serju and Thomas (2009) show that local spending accounts for no more than 30 percent of total cost, including tax and royalty payments as well as wages and salaries.

[11] Studies may underestimate the contribution of the labor force because they make no explicit consideration for education or skills, which leads to an overestimation of the TFP residual.

1.22 **Estimations for longer time periods also show TFP has declined since 1960.** Bosworth and Collins (2003) examine 84 countries from 1960 to 2000. Consistent with the historical facts, the authors find that TFP in Jamaica was growing above the world and regional averages in the 1960s but it collapsed in the 1970s, receding at 3.8 percent a year. TFP growth partly recovers in the 1980s, growing above world and regional averages (increased productivity seems to come from reallocation gains); however, it becomes negative again in the 1990s. For the entire period, TFP growth is estimated as -0.5 percent a year (see table 1.6). Jamaica seems to have never returned to the high TFP growth it enjoyed in the 1960s; the reforms and counter-reforms of the 1970s and 1980s might have been too costly for the country.

Figure 1.5: Sector Growth. Value Added, Employment and Labor Productivity, 1992-2008

Source: Staff calculations based on Bank of Jamaica statistics.

Table 1.6: Growth decomposition 1960-2000

	Output	Output per worker	Physical capital	Education	Productivity
			Contribution of		
	World				
1960-1970	5,1	3,5	1,2	0,3	1,9
1970-1980	3,9	1,9	1,1	0,5	0,3
1980-1990	3,5	1,8	0,8	0,3	0,8
1990-2000	3,3	1,9	0,9	0,3	0,8
1960-2000	4,0	2,3	1,0	0,3	0,9
	Latin America and the Caribbean				
1960-1970	5,5	2,8	0,8	0,3	1,6
1970-1980	6,0	2,7	1,2	0,3	1,1
1980-1990	1,1	-1,8	0,0	0,5	-2,3
1990-2000	3,3	0,9	0,2	0,3	0,4
1960-2000	4,0	1,1	0,6	0,4	0,2
	Jamaica				
1960-1970	4,8	4,0	1,3	0,3	2,4
1970-1980	-0,8	-3,6	-0,3	0,5	-3,8
1980-1990	2,5	0,3	-1,1	0,3	1,0
1990-2000	1,0	-0,6	0,9	0,2	-1,7
1960-2000	1,8	0,0	0,2	0,3	-0,5

Source: Bosworth and Collins (2003)

1.23 **Jamaica's TFP per worker also lags significantly behind most other countries in the Latin American and the Caribbean Region.** Daude and Fernández Arias (2010) computed TFP per worker in 76 countries for 1960-2005, adjusting for changes in the education of the labor force and factor utilization. In 2005, TFP per worker in Jamaica was 85 percent of the LAC average, 60 percent of Chile, the best performing country in the region, and 44 percent of the United States (see figure 1.6).

Figure 1.6: Relative TFP in LAC countries, 2005

Source: Daudé and Fernández-Arias (2010)

1.24 **Low TFP is also a major factor explaining the income gap between Jamaica and the United States.** Daude and Fernández Arias (2010) find that 40 percent of the income disparity between the two countries is due to differences in TFP, followed by physical capital gap at 30 percent, human capital at 20 percent and labor force intensity at 10 percent (see Table 1.7). When investment in physical capital is made endogenous, reacting to TFP changes, TFP becomes even more important, explaining 60 percent of the income gap. Human capital is the second most important factor, explaining 25 percent. These results suggest that the problem in Jamaica is the low TFP rather than low physical capital investment. However, this is also true for the typical LAC country. According to Daude and Fernández-Arias, the LAC countries are concentrated in the lowest 25 percent of the sample when ranked by productivity.

Table 1.7: Contributions to Gap in Income Per Capita

	Baseline		Endogenous physical capital	
	Typical LAC country	Jamaica	Typical LAC country	Jamaica
TFP	37	40	56	60
Physical capital	38	32	12	4
Human capital	16	18	23	26
Labor force intensity	9	10	9	10

Source: Daude and Fernández-Arias (2010)

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1.25 **The earlier income gap decomposition by Hendrik (2002)—which takes into account differences in educational quality—shows similar results.** Neither capital accumulation nor educational quality explains the difference. Most of the income gap between Jamaica and the U.S. can be traced to differences in the stock of human capital and TFP (see table 1.9).

Table 1.8: Hendrik's Decomposition of differences in average earnings

	Explained by			
	Differences in Capital Accumulation	Differences in Human Capital Accumulation	Difference in Educational Quality	Unexplained
Sample 67 countries	13.8%	33.5%	2.0%	50.7%
Low Income countries	17.6%	25.7%	6.5%	50.2%
Jamaica	-14.1%	41.9%	2.8%	69.4%
Guyana	-41.8%	49.2%	5.2%	87.4%
T & T	39.9%	54.0%	2.4%	3.7%
Costa Rica	19.3%	32.5%	10.2%	38.1%
Chile	5.3%	35.4%	9.1%	50.1%
Argentina	-0.5%	40.3%	-1.6%	61.7%
Barbados	32.8%	36.5%	-4.3%	35.0%
Malaysia	5.9%	44.6%	2.3%	47.2%

Source: Hendrik (2002)

D.4. High Investment but Low Growth

1.26 **Jamaica is a puzzling case because its low growth rates cannot be a priori attributed to low investment rates, the usual explanation when comparing most LAC countries to the fast-growing economies of Asia.** In Jamaica, total fixed investment averaged 25 percent of GDP during 1960-2008. The ratio was even higher in the past two decades, averaging 28 percent a year. The LAC region's average was 20 percent over the past four decades. The fast-growing East Asia region invested an average of 28 percent of GDP during 1960-2008. These figures show that Jamaica has investment levels close to those of the fast-growing East Asia region, although East Asian investment levels have increased in the past two decades, reaching an average of 33 percent (see table 1.9).

1.27 **By international standards, Jamaica has significantly underperformed in real GDP growth, given its high level of investment.** The four panels in figure 1.7 present a large sample of countries, with the ratio of average gross fixed capital formation to GDP for 1987-2007 on the horizontal axis and different measures of economic growth for the period on the vertical axis. In all cases, Jamaica is below the linear regression line showing the expected growth rate for any given investment level. In other words, Jamaica significantly underperforms the average growth rate of countries with similar investment to GDP ratios (although the relative situation of Jamaica becomes less negative when measured in constant investment dollars per capita).

Table 1.9: Gross Fixed Capital Formation as Percent of GDP, Decade Averages

	1960-69	1970-79	1980-89	1990-99	2000-08
Jamaica	27.7	21.6	20.1	26.9	28.9
Ranking	7	67	96	37	20
(in the world)	(of 76 countries)	(of 113 countries)	(of 153 countries)	(of 181 countries)	(of 177 countries)
Ranking	1	11	15	7	5
(in Latin America and the Caribbean)	(of 19 countries)	(of 26 countries)	(of 29 countries)	(of 32 countries)	(of 30 countries)
World	22.0	23.7	22.5	21.6	21.0
Latin America and the Caribbean	n.a.	21.6	20.1	18.9	18.7
East Asia and the Pacific	19.7	26.0	28.3	31.9	34.4
Europe and Central Asia	n.a.	n.a.	23.2	20.0	20.4
Middle East and North Africa	21.2	26.8	26.9	23.3	23.2
South Asia	14.2	15.6	19.6	21.9	26.6
Sub-Saharan Africa	n.a.	24.7	20.1	17.0	18.2
Selected Latin American and Caribbean countries					
Argentina	21.5	25.8		18.9	18.2
Barbados	21.0	23.1	19.2	15.6	18.7
Brazil		21.7	21.0	18.2	16.7
Chile	17.5	17.7	17.2	24.3	21.1
Colombia	18.0	16.0	17.4	18.5	
Costa Rica	17.5	22.7	20.0	19.0	19.7
Dominican Republic	13.2	20.8	22.0	22.1	20.0
Trinidad and Tobago	22.9	24.2	22.0	20.6	19.1
Uruguay	16.8	16.4	14.1	14.1	14.5
Other selected comparators (Debt over 80 percent of their GDP)					
Angola			14.2	23.2	12.4
Bulgaria			26.9	15.0	23.0
Congo Republic	10.3	13.3	11.4	8.0	11.3
Cote d'Ivoire	19.0	23.0	15.8	11.4	9.9
Indonesia		22.3	24.4	26.7	22.4
Lebanon				28.1	19.4
Madagascar		9.1	10.8	12.4	22.2
Nicaragua	16.6	17.6	19.5	22.5	26.9

Source: World Bank (World Development Indicators)

Figure 1.7: Investment Rates and GDP Growth, 1987-2007

Growth measured as GDP constant 2000 I$

Growth measured as GDP constant LCU

Growth measured as per capita GDP constant 2000 I$

Growth measured as per capita GDP constant LCU

Source: World Bank (World Development Indicators)

D.5. Debt Overhang

1.28   **High public debt levels with large swings in the debt to GDP ratio is a burden the country has been struggling with for decades**. The history of high debt is related to chronic public deficits, weak budget coverage, and contingent liabilities arising from a large number of weakly regulated public bodies. It has also been influenced by increases in domestic debt from reforms and counter-reforms of the 1970s and 1980s and the financial crisis of the middle 1990s. Starting slightly above 100 percent of GDP in 1980, the debt ratio surpassed 200 percent by 1984. The debt burden was cut to 80 percent of GDP in fiscal year 1996-97. This reduction reflected a concerted effort of fiscal surpluses exceeding 10 percent of GDP in five consecutive years under IMF-supported programs, aided by Paris Club debt rescheduling. After the mid-1990s, the debt burden increased again due to the financial crisis of 1996 and the government's subsequent decision to bail out all depositors, with an estimated cost of 40 percent of GDP. In subsequent years, the government has not been able to reduce its high debt. The public debt to GDP ratio stood at about 140 percent of GDP at the end of 2009 (see figure 1.8).

D.6. Doing Business in Jamaica

1.29 **Jamaica's business environment is a mixed picture, with high crime, red tape, and heavy tax burdens creating significant impediments to doing business.** Jamaica's business environment is analyzed in chapter 7 of this report and the results indicate that Jamaica has not been able to create a favorable environment for growth and doing business. The market-oriented reforms have not been enough to create a better environment for productivity growth.

Figure1.8: Public Debt in Jamaica

Source: Ministry of Finance and the Public Services

E. CONCLUSIONS

1.30 **Jamaica's growth performance has been poor during the last four decades and Jamaica was one of the world's slowest growing economies**. Jamaica achieved significant growth rates in the 1950s. However, economic growth stopped in the 1970s and real GDP even declined by about 18 percent during this period. Although economic growth recovered in later periods, the performance continued to be disappointing except run up to 1996 financial crisis. In the 2000s, Jamaica's average real GDP growth rate ranked 180th out of 196 countries. Jamaica also underperformed compared to other economies with similarly high debt-to-GDP ratios and fell behind most of its per capita income peers. Economic growth in Jamaica was not only low, it was also volatile.

1.31 **Stylized facts about the Jamaican economy includes poor growth across the board in all sectors, an "enclave" development pattern, very low productivity levels and growth, high investment to GDP ratios, high public debt ratios and mixed indicators of business environment**. Among 46 economic subsectors, only financial service and telecommunications had GDP growth rates of more than 4 percent a year during 1992-2008. The leading sectors in the Jamaican economy, such as tourism and mining, followed an "enclave" development pattern, which prevents important spillovers to other sectors. Both the level and the growth of productivity in the economy have been very low. Jamaica's very high investment to GDP ratios create contrast with the observed low economic growth. Other features of the economy include high public debt burden and a mixed picture of business environment with high crime, red tape, and heavy tax burdens creating significant impediments to doing business.

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CHAPTER 2.   INCLUSIVENESS OF GROWTH IN JAMAICA

This chapter looks at inclusiveness of growth in recent years in Jamaica. Real GDP growth has historically been low and the "enclave" development pattern allows little linkage between leading sectors and the rest of the economy. At the outset, these two factors can potentially make a large portion of the population vulnerable to poverty shocks. The objective of the chapter is to understand poverty and income distribution dynamics and whether the low growth performance increases the probability of falling into poverty in Jamaica, with potential social challenges and risks to macroeconomic stability. The analyses indicate that poverty has continued to decline significantly in the last decade despite very low economic growth. The reduction in poverty has been geographically and economically broad-based and driven both by growth in average consumption and a reduction in inequality. However, it should also be acknowledged that poverty have spiked substantially since 2007 due mostly to the large adverse effects of the global crisis. Nonetheless, the achieved poverty reduction and improvements in income distribution reduce possible social challenges and risks to macroeconomic stability.

A. INTRODUCTION

2.1   **Although Jamaica's growth has been disappointing by regional and global standards, poverty has nonetheless declined significantly.** The poverty incidence fell from 28.4 percent in 1990 to 9.9 percent in 2007. During this period, poverty declined from 13.3 percent to 6.2 percent in the Kingston metropolitan area and from 37.5 percent to 15.3 percent in rural areas. Moreover, the substantial fall in the poverty headcount was accompanied by a narrowing of inequality, with most of the reduction in poverty occurring in initially poorer areas outside of Kingston Metropolitan Area (KMA). However, it should also be acknowledged that poverty have spiked substantially since 2007—rising to 12.3 percent in 2008 and 16.5 percent in 2009—due mostly to the large adverse effects of the global crisis.

2.2   **Jamaica's growth elasticity of poverty was very high in the last decade.** Between 1997 and 2007, the Jamaican economy grew by just 12.7 percent, equivalent to a 0.79 percent average annual growth rate of per capita real GDP. In the same time period, poverty halved from 19.9 to 9.9 percent of population. This yields an elasticity of poverty reduction with respect to a change in mean income of -16, much higher than the values of such elasticities usually observed in the data. This elasticity is calculated as the percent change in the poverty headcount (expressed as a percentage of total population) for a 1 percent change in real GDP per capita. Under a common rule of thumb, the poverty elasticity of growth is assumed to be around -1.[12] From the late 1990s to mid-2000s, poverty reduction in India, China, Vietnam, and Mexico have yielded elasticities of -0.2, -0.5, -1.0, and -6.8, respectively. The rise in poverty in Jamaica was also disproportional after 2007 when growth collapsed due to global crisis.

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[12] It should also be noted that the poverty elasticity of growth is larger in absolute value when the initial headcount ratio is lower.

2.3   **Although poverty was halved in Jamaica during 1997-2007, the progress on poverty reduction was uneven**. According to PIOJ/STATIN (2008), poverty was virtually unchanged at 20 percent of the population between 1997 and 2002, even though poverty had fallen as low as 16 percent in 1998. Since 2003, however, the record of poverty reduction has been unequivocal: poverty fell from 21 percent of the population in 2003 to just 9.9 percent in 2007.[13]

2.4   **This chapter examines the distributional aspects of growth in Jamaica between 2003 and 2007 and discusses some of the main determinants of distributional change.** The analysis is based on a series of labor market and household surveys in Jamaica between 2003 and 2007 (more recent surveys were not available at the time of writing this chapter). The methodological approach is two-fold. First, the chapter develops a poverty profile for Jamaica and traces the evolution of poverty from 2003 through 2007. Second, the chapter examines the determinants and drivers of distributional change during this period by focusing on labor market outcomes—such as returns to education, experience, and sectoral premiums—and linking these outcomes to household welfare per capita.

2.5   **The reduction in poverty during 2003-2007 has been geographically and economically broad-based and driven both by growth in average consumption and a reduction in inequality.** Although GDP per capita grew slowly during this period, consumption per capita grew more rapidly, facilitating poverty reduction. At the same time, the narrowing of inequality contributed as much as 25 percent to the overall poverty reduction between 2003 and 2007. Moreover, households in the second and third deciles of the income distribution reaped the largest welfare gains over the period, confirming a positive distributional shift. These distributional dynamics were underpinned by a narrowing in sectoral wage premiums and a decline in the importance of education as a determinant of household welfare.

2.6   **The remainder of the chapter is structured as follows: section 2 presents the 2003-2007 poverty profile, section 3 explains the observed inequality trends in terms of labor market dynamics and their links to the household welfare, and section 4 offers concluding remarks.** Although labor market dynamics *per se* are not the main focus of the chapter, participation and earnings in the labor market feature prominently because they represent the main determinants of welfare, particularly for poor households who have little other assets.

B. EVOLUTION OF POVERTY 2003-2007

2.7   **This section describes the evolution of poverty in Jamaica between 2003 and 2007, both at the aggregate level and by relevant population sub-groups.** Drawing on recent household survey data, this section tracks the incidence and depth of poverty over time and discusses, in somewhat less detail, the evolution of the overall income distribution (see box 2.1 for data description). To facilitate understanding of the developments aggregate poverty trends, this section also examines changes in poverty by segments of the population: households headed by males and females, households with married and unmarried heads, urban/rural households, households with primary earners employed in different sectors of the economy. The main

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[13] The authors are able to match the poverty rates reported by PIOJ/STATIN (2008) for all years except 2003; in that year, the chapter's headcount index estimate of 21 percent differs substantially from the 19.1 percent reported by PIOJ/STATIN (2008).

objective is to present a complete and thorough sectoral, demographic, and spatial picture of the evolution of poverty in Jamaica.

Box 2.1: Data Description

This chapter's analysis is based on the 2003-2007 rounds of the Jamaica Survey of Living Conditions (JSLC) and the Jamaica Labor Force Survey (LFS). The JSLC is a comprehensive household survey, conducted annually since 1988 as a subset of the Jamaica Labor Force Survey (LFS). The LFS is conducted four times a year—in January, April, July, and October—and covers 1.0 to 1.3 percent of the Jamaican population. The sample size for the JSLC is one-third of the households in the LFS, or 0.33 percent of all households in Jamaica, and interviews are carried out face-to-face between May and August of each year. Welfare, including poverty and inequality indices, is calculated using a consumption-based metric, specifically household consumption per adult equivalent.

The JSLC and LFS data sets were obtained from the implementing institutions already in processed form. The Planning Institute of Jamaica (PIOJ) and the Statistical Institute of Jamaica (STATIN)—which are jointly responsible for survey implementation—have shared the data with key concepts already calculated—the adult equivalence scales, the poverty line, and other post-interview variables such as consumption aggregates. Adult equivalence scales facilitate calculation of poverty and distributional statistics while recognizing that caloric intake requirements (and consequently, the income required to purchase the minimum adequate bundle of calories, i.e., to meet the poverty line) vary by age and gender. For example, a family with a large number of women and children may require less income to buy the minimum food basket than a household made up primarily of adult males.

A number of this chapter's results rely on combined data from the LFS and JSLC. Because the JSLC is a subset of the LFS—the dwellings chosen for LFS interviews in April are revisited in May-August for the JSLC—the two surveys can be combined to extend the coverage of consumption surveys. This was required in several cases; for example, the 2003 and 2005 SLCs were missing education data, so for these years the JSLC was merged with education data from the LFS. In the 2003 case, however, about half of the households in the JSLC could not be identified in the LFS, resulting in a substantially lower number of observations. This illustrates the challenges in merging of the two data sets. The process is imperfect due to differences in the surveys' non-response rates and the fact that dwellings, not households, form the secondary sampling units. Any time a household moves and another household takes up residence in the same dwelling between April and May-August, the matching process will fail. These practical challenges reduce the size of the sample available for analysis and necessarily add caveats to the empirical conclusions because the loss of households may introduce an unknown bias into the final sample design.

2.8   **Decline in poverty was impressive during 2003-2007.** Poverty fell from 21 percent of the population in 2003 to just 9.9 percent in 2007 (see table 2.1). Extreme poverty—defined as the percentage of the population able to afford the minimum adequate diet, as determined by the Jamaica Ministry of Health (MOH)—also fell from 6.6 percent in 2003 to 2.9 percent in 2007.[14] Higher-order measures of poverty, such as the poverty gap and the squared poverty gap, have also declined substantially, indicating that the depth of poverty has fallen along with its incidence. For example, the poverty gap indicates that the average distance from the poverty line has been halved, while the fall in the squared poverty gap suggests that the fortunes of the poorest of the poor have also improved substantially.

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[14] The minimum adequate diet is defined as consumption of at least 11,225 Kcals for a family of five: an adult male, adult female, and three children, with age ranges of 1-3 years, 10-14 years, and 15-18 years (PIOJ/STATIN, 2008).

Table 2.1: Incidence of Poverty in Jamaica, 2003-07

	2003	2004	2005	2006	2007
Poverty and Inequality Indicators					
Extreme Poverty (P0)	6.6	5.7	4.3	3.3	2.9
Poverty (P0)	21.0	16.9	14.8	14.3	9.9
Poverty Gap (P1)	5.4	4.4	3.7	3.2	2.5
Poverty Gap Sq (P2)	2.0	1.7	1.4	1.2	1.0
Gini	38.3	39.0	38.9	37.9	36.8
Theil (GE(a), a=1)	28.5	27.9	28.7	26.6	23.8
Poverty Headcount Ratio by:					
Locality					
KMA	14.6	14.3	9.6	9.4	6.2
Urban	15.8	7.8	7.2	9.2	4.0
Rural	24.2	22.1	21.1	19.8	15.3
Household Head Characteristics					
Gender					
Male	18.5	16.2	12.7	14.5	8.6
Female	23.6	17.5	16.9	14.1	11.1
Marital Status					
Married	18.1	16.6	14.7	15.8	9.7
Not Married	22.8	17.0	14.7	13.2	10.1
Household Primary Earner Characteristics					
Gender					
Male	21.3	17.0	12.5	15.5	10.1
Female	20.5	16.7	15.1	12.3	8.3
Sector					
Agriculture	37.3	28.7	27.5	33.6	22.6
Mining	0.0	0.0	0.0	0.0	0.0
Manufacturing	15.9	22.4	11.7	10.1	0.0
Construction	14.0	18.5	6.3	9.7	6.5
Trade, Hotels, Restaurants	16.5	15.7	11.6	15.1	6.7
Other Services	14.5	10.5	10.4	6.4	5.9
Industry Not Classified	21.8	15.9	20.1	14.4	13.9

[†] Not all households in the survey report a primary earner, the statistics shown below therefore apply only to the sub-sample.
Source: STATIN

2.9 **The first and main driver of the post-2003 decrease in poverty has been the growth in per capita consumption.** According to the national accounts data, nominal GDP per capita grew by 63.8 percent between 2003 and 2007, while per capita consumption grew by 86.8 percent. Over the same period, the JSLC's mean consumption per adult equivalent increased by a nearly identical 86.7 percent—an almost surprising result, given the often large disparities between national accounts and micro (survey) data (see, for example, Deaton, 1997). The large difference between the growth in GDP and consumption is partly explained by the rapid growth of international remittances, which increased from 10 percent of GDP in 2000 to over 17 percent of GDP in 2007 (left panel, Figure 2.1). Although much of the growth in remittances accrued to the richer households, a large and growing number of households in the poorest quintile also report receiving remittances (right panel, figure 2.1).

Figure 2.1: Remittances in Jamaica

Source: World Development Indicators and World Bank Remittances Database

2.10   **Another substantial part of the decline in poverty is explained by slower growth of the cost of the poor households' consumption basket relative to the average basket**. The JSLC, measures the cost of consumption baskets for three areas—KMA, other urban, and rural. They reflect the differences in cost of living in these three localities. Between 2003 and 2007, all three poverty lines increased 49 percent. Over the same period, according to Bank of Jamaica (BoJ) statistics, overall inflation was 57 percent, while the prices of food and non-alcoholic beverages rose 65 percent.[15] Because the poverty lines grew slower than overall inflation, the consumption basket of the poor became relatively cheaper, contributing to poverty reduction. In 2007, instead of 9.9 percent, the poverty rate would have been 11.9 percent if the poverty line were indexed to the overall CPI, and 13.4 percent if the poverty line were indexed to the food CPI (see figure 2.2). The right panel of Figure 2.2 illustrates the same point by plotting income distributions from 2003 and 2007 along with their respective poverty lines. A hypothetical poverty line of 2007, obtained by using the food CPI, is added. Although the difference between the two poverty lines is not very large, the density (number of persons) in the distribution around the poverty line is substantial. Other factors that might help reduce poverty include the informal support system through gang network, which would be difficult to capture in official GDP figures, and large inflow of remittances.

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[15] Although STATIN does not report inflation by categories of consumption goods, the overall inflation reported by STATIN over the same period is virtually the same: 56.62 percent vs. 56.77 percent as reported by BoJ. However, the inflation numbers from macro statistics and the movement in the poverty line may not be strictly comparable because the Jamaica Survey of Living Conditions is not carried out at the same time each year and the poverty line is updated by the inflation rate between both survey periods.

Figure 2.2: Poverty under different poverty line assumptions

2007 poverty headcount (%)

Consumption Kernel Density

Note: Alternative poverty line is estimated by inflating the 2003 poverty line by 2003-2007 food inflation.

2.11   **Inequality also declined, with the Gini coefficient falling from 38.3 in 2003 to 36.8 in 2007.** Already in 2003, Jamaica was the least unequal country in Latin America and the Caribbean (see fFigure 2.3). However, inequality continued to decline between 2003 and 2007, with all measures of inequality, including the General Entropy (GE) family of inequality indices, decreasing over the same period. Figure 2.4 plots the Lorenz and generalized Lorenz curves for the distribution of consumption per equivalent adult in 2003 and 2007. The two curves are not very different—in fact, large differences would not be expected with a 1.5 percentage point change in the Gini. However, the Lorenz curve of 2007 is nowhere below the Lorenz of 2003, suggesting at least weak Lorenz dominance of the 2007 distribution over the earlier one.[16] In other words, not only did aggregate inequality fall, but inequality decreased (or at least did not increase) throughout the income range.[17]

Figure 2.3: Inequality in Latin America, 2000-05

Gini coefficients, various years

Source: GIDD database, World Bank, and JSLC 2007.

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[16] Because mean income has also grown over the same period, the generalized Lorenz curve of 2007 also weakly dominates the generalized Lorenz of 2003, therefore implying second-order stochastic dominance (Shorrocks, 1983; Kakwani, 1984).

[17] Strict Lorenz dominance is not asserted here because it requires failing to reject the null hypothesis that the Lorenz curve of 2007 is nowhere below the Lorenz curve of 2003, which in turn requires estimating the standard errors of the two curves.

Figure 2.4: Lorenz curves, 2007 and 2003

Source: Authors' estimates with JSLC 2003, 2007.

2.12   **The decline in poverty was mostly explained by the mean income growth but reduced inequality also played a significant role.** Table 2.2 shows the results of a non-parametric decomposition of the 2003-2007 change in the poverty headcount into consumption growth and inequality components.[18] The first row shows the observed poverty headcounts in 2003 and 2007. The second row shows the poverty headcount that would have been observed in 2007 if the income distribution were the same as it was in 2003, i.e., if increasing mean consumption were the only driver of poverty reduction. The simulated poverty headcount of 12.4 percent is above the observed headcount of 9.9 percent, indicating that reduced inequality complemented consumption growth. Similarly, the third column shows the poverty headcount that would have been observed if mean consumption remained unchanged and only the income distribution improved. The numbers in the final column indicate the contribution of the consumption and inequality components to the total change in poverty, showing that higher mean consumption accounted for nearly three-quarters of poverty reduction, while narrowing inequality contributed about one-quarter.[19]

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[18] The advantages of a non-parametric decomposition include simplicity and no need to assume a functional representation of the Lorenz curve. The disadvantages vis-à-vis a parametric decomposition (e.g., Datt and Ravallion, 1992) include lack of a clear identification of the residual component (interaction between growth and inequality changes).

[19] The contributions of two components do not sum up to 100 percent due to the presence of an interaction term (because all decompositions are path-dependent). However, the interaction term is quite small in this case.

Table 2.2: Growth-inequality decomposition of poverty changes, 2007-03

	2003	2007	Contribution from each component, %
Poverty headcount (% of population)	21.0	9.9	
Simulated poverty, only mean income growth		12.4	78
Simulated poverty, only distributional change	17.9		28

Source: Authors' calculations with JSLC 2003, 2007.

2.13 **Welfare improved all along the distribution of welfare per adult equivalent between 2003 and 2007, but households in the second and third deciles gained the most.** Figure 2.5 plots the percentage increase in welfare for each percentile of the distribution between 2003 and 2007—the growth incidence curve (GIC) of Ravallion and Chen (2003). As with all GICs not derived from panel data, the distribution of welfare gains is anonymous in the sense that households in bottom decile of the distribution in 2003 may not be the same households in the bottom decile in 2007. Even under anonymity, however, the GIC is a useful tool for summarizing distributional changes, and integrating under the GIC up to the poverty line provides a measure of the pro-poorness of growth (Ravallion and Chen, 2003). Figure 2.5 contains three lines: the GIC itself under two alternative smoothing techniques, and a horizontal line showing the average percent change in welfare per adult equivalent. The GIC makes clear that the 2003-2007 growth in Jamaica has been broad-based, with households in deciles two and three gaining more than average. Even though the poorest decile of the Jamaican population fared worse than average, these households still recorded substantial nominal welfare gains of 70-80 percent. Moreover, the second decile—which was still poor in 2003—gained more than average, which helped accelerate poverty reduction over the period.

Figure 2.5: Growth incidence curve, 2003-07

Source: Authors' estimates with JSLC 2003, 2007.

2.14 **Gains for the poor have been broad-based across urban and rural areas.** Poverty declined substantially in all three main localities: the KMA, other cities, and rural areas (see table 2.1). Although urban areas excluding KMA registered the greatest percentage decline in poverty, these areas account for less than a quarter of Jamaica's poor. Thus, the primary driving force behind the decline in aggregate poverty has been the lower poverty headcount in rural areas, which had a high concentration of poor in 2003 (see figure 2.6). The relatively larger improvement in the welfare of initially poorer parts of the population also explains some of the previously discussed reduction in inequality and is consistent with the GIC of figure 2.5.

Figure 2.6: Poverty Trends (urban and rural areas, 2003-07)

Poverty headcount by locality (population-weighted)

Box 2.2: Poverty and Crime

The total costs of crime to the Jamaican economy are high, but are likely even higher for poorer households and small firms. Francis et al. (2003) estimated the economy-wide costs of crime at 3.7 percent of GDP in 2001. His calculation included the health-care costs of violence-related injuries, the value of lost working time, the costs of funerals, and public spending on providing law and order. Overall, 0.4 percent of GDP was spent on violence-related health costs, yet these costs can impose a particular burden on the poor because their health expenditures tend to be large relative to incomes, and unexpected hospital bills can easily push households below the poverty line. More than 3.1 percent of GDP is spent on public security services; private security costs could also be substantial, but they are omitted from the study. A survey of business managers conducted by Francis et al. (2003) found that the overall costs of security to firms were around 2 percent of revenues. However, small firms spent 17 percent of revenue on security, compared to the large firms' 0.7 percent. In addition, 37 percent of respondents reported that crime discouraged productivity-enhancing investments, and 39 percent said crime made them less likely to expand their businesses.

Studies using national-level data find positive relationships between crime and inequality, low economic growth, high unemployment and large 14- to 24-year-old cohorts. Using a simple correlation analysis without control variables, Ellis (1991) finds that Jamaica's historically low growth, high unemployment, and large 14- to 24-year-old cohort are risk factors that have been associated with high crime rates. The demographic shift away from the younger cohorts over the past two decades magnifies the importance of the other two factors. A cross-country panel study on the determinants of crime by Fajnzylber, Lederman and Loayza (2002) finds a robust relationship between higher crime rates and higher inequality as measured by the Gini index. It also finds evidence that inequality leads to higher crime rates, although they do not test for the mechanism through which such a causal effect would run. Violent crime rates are also found to decrease as economic growth rates rise. These results suggest that reducing poverty at the national level would lower the incidence of crime in Jamaica.

Members of poorer households within high-crime parishes are more likely to be victims of violent crime. Using 2001 census data and focusing on the parishes of Kingston, St. Andrews, and St. Catherine, a World Bank report (2007) found that poorer households—as well as those with large percentages of males between 14 and 24—were more likely to be victims of murder, shooting, and wounding. In addition, households living in the poorer districts of these parishes were more likely to be targeted by criminals. Although the positive correlation between poverty and crime is well documented, it should be noted that these parishes have among the lowest overall headcount poverty rates in Jamaica (see Table 32). This introduces an important nuance in policy design and underscores the importance of geographic targeting. National-level policy interventions specifically targeting poverty alleviation would predominantly reach rural households living in areas that have lower crime rates and thus would be unlikely to substantially mitigate national crime.

2.15   **The poverty headcount is higher for households with a female head, mainly because these households are larger and have more children.** In 2003, the poverty headcount was nearly 4 percentage points higher for female-headed households than for male-headed households.[20] Both types of households experienced nearly identical rates of poverty reduction between 2003 and 2007, so the gap between the two groups remained the same in relative terms. Table 2.4 summarizes the relevant characteristics of households headed by males and females in 2003 and 2007, showing the relationship between household size, gender of the head, and poverty. The table show that the difference in a household's likelihood of being poor does not significantly vary by gender, even though female-headed households are over-represented among poor households in Jamaica,. In other words, without controlling for any other determinant of household welfare, there is no bias in poverty with regard to the gender of the household head. Households headed by males or females are equally likely to be poor. Instead, what accounts for the higher headcount among female-headed households is their larger size. The last rows of table 2.4 show that female-headed households are on average larger than male-headed households. The difference is the number of children. The gap is larger among the poor, with female-headed households on average having nearly two more children than male-headed household.[21]

Table 2.3: Household characteristics by Gender of the Head

	2003	2007
Composition of all households (%)		
Head is male	56.30	53.82
Head is female	43.70	46.18
Composition of poor households (%)		
Head is male	54.00	51.03
Head is female	46.00	48.97
Likelihood of the household being poor (%)		
Head is male	22.96	7.18
Head is female	25.20	8.04
p-value	0.25	0.48
Household size by gender of the head, all households		
Head is male	3.19	2.97
Head is female	3.82	3.68
Household size by gender of the head, poor households		
Head is male	3.66	3.56
Head is female	4.58	5.10

Source: Authors' calculations with JSLC 2003, 2007.

2.16   **On the other hand, the poverty headcount is lower for households where the primary earner is a woman.** For about two-thirds of Jamaican households, the household head and the primary earner are the same person. In the remaining one-third of households, however, someone other than the head earns the most, and the gender of the primary earner makes an important difference. Households with female primary earners tend to have higher per capita consumption and lower incidence of poverty than households with male primary earners. Several

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[20] The discussion in this paragraph refers to the head of the household as identified by survey respondents ("declared head"), rather than the primary earner in the household ("economic head").
[21] Poor households in general tend to be larger than non-poor households, with fewer working-age members and more children and elderly.

factors explain this difference. First, households where a primary earner is female have significantly more working-age members than households with male primary earners.[22] Moreover, female primary earners are much less likely than males earners to work in agriculture (8.6 percent vs. 30.9 percent), which pays significantly less than other sectors.[23] Related to this, female primary earners are much less likely to live in rural areas (28.7 percent vs. 41.2 percent), which have lower levels of welfare and higher incidence of poverty. Therefore, the difference in poverty by the gender of the primary earner has less to do with earning and much more to do with other household characteristics, including composition, employment sector, and locality.

Table 2.4: Household consumption per adult equivalent, 2003-07 (J$)

	2003	2004	2005	2006	2007	Cumulative % change, 2003 - 2007
Jamaica	**116,618**	**135,090**	**163,909**	**183,771**	**217,713**	**86.7**
Consumption per capita by:						
Locality						
KMA	167,800	174,250	218,007	236,021	288,766	72.1
Urban	133,268	153,100	175,117	192,820	235,650	76.8
Rural	89,399	103,325	125,182	144,279	160,319	79.3
Household Head Characteristics						
Gender						
Male	123,981	138,836	177,797	196,323	227,064	83.1
Female	108,693	131,637	150,445	172,029	208,905	92.2
Marital Status						
Married	125,194	133,150	178,161	198,845	225,363	80.0
Not Married	111,301	135,786	155,587	175,071	213,851	92.1
Household Primary Earner Characteristics						
Gender						
Male	112,942	127,837	167,005	179,179	210,103	86.0
Female	119,807	144,531	163,858	184,858	231,261	93.0
Sector						
Agriculture	73,572	83,424	113,774	115,074	134,844	83.3
Mining	103,982	175,469	211,443	267,147	326,752	214.2
Manufacture	141,978	119,973	150,490	174,919	216,013	52.1
Electricity, Gas and Water	125,533	106,964	241,346	328,972	311,676	148.3
Construction	99,598	116,983	143,027	198,627	192,227	93.0
Trade, Hotels, Restaurants	116,685	134,558	160,383	164,669	223,945	91.9
Transport & Communications	165,678	166,289	170,574	191,639	273,798	65.3
Financing	190,721	209,108	259,105	267,974	324,604	70.2
Community, Other Services	128,931	163,485	198,578	217,337	250,556	94.3
Industry Not Classified	122,747	139,459	156,867	195,149	211,504	72.3

2.17 **Poverty among households with the primary earner working in agriculture has fallen substantially, but at a slower rate than for households with primary earners in other sectors.** The headcount among households with the primary earner in agriculture declined from 37.3 percent in 2003 to 22.6 in 2007 (with a brief spike in 2006). However, poverty among households with primary earners in service sectors fell one-third faster. The slower rate of poverty reduction among agricultural households is correlated with two interrelated

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[22] This difference is significant at the 7 percent level.
[23] See the following section for a discussion of differences in labor earnings by sector.

developments. First, most of the aggregate reduction in poverty between 2003 and 2007 occurred in the rural areas where most agricultural households reside, but the rate at which poverty fell was faster in urban areas and KMA.[24] Second, the size of the agricultural sector—measured by the share of households with the primary earner in agriculture—has steadily declined from 23 percent in 2003 to 19 percent in 2007.[25] Normally, the richer households—those with greater physical and human capital assets—are more likely to exit the agricultural sector, and the households who do not shift into non-agricultural occupations tend be worse off on average. Consequently, the welfare of agricultural households increased at a rate slower than households with primary earners in other sectors (see table 2.5).

C. DETERMINANTS OF DISTRIBUTIONAL CHANGE

2.18 **This section builds on the results presented in the previous section by identifying the important drivers of distributional change in Jamaica between 2003 and 2007.** First, it examines the determinants of labor earnings and labor-force participation and their evolution between 2003 and 2007. Second, it connects these labor-market variables to the determinants of household welfare. Finally, it links the evolution of returns to education and sectoral wage premiums to the observed distributional change—as summarized by the generalized Lorenz of Figure 2.4 and the GIC of Figure 2.5 in the previous section.

2.19 **An analysis of real wage dynamics indicates that returns to education increased between 2003 and 2004 and declined thereafter but it was still higher in 2007 than in 2003.** Table 2.6 shows the results of estimating of a Mincer-type (Mincer, 1974) equation for a log of real labor earnings of Jamaican workers between 2003 and 2007. The real wage is calculated by deflating the nominal hourly wage from the LFS with the change in the JSLC poverty line relative to 2003, which allows for comparing results between years.[26] Educational attainment is measured by dummy variables that indicate the highest equivalent educational certificate that could be attained with the observed years of schooling, but not necessarily the actual attainment of this certificate.[27] This gives the dummies the interpretation of the return of completing each level of schooling relative to receiving no schooling at all.[28] Within each year, the educational dummies show increasing returns to higher levels of educational attainment. Across years, the evolution of the coefficients points to first increasing and then declining returns to education. This means that, for example, a person who has completed the requisite number of years for an A-cycle could expect 2007 real earnings to be less than a similarly qualified person of the same gender working in the same sector and locality in 2003. However, a person with a tertiary degree could expect to earn more in real terms in 2007 than in 2003.

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[24] This is due to the fact that most initial poor are rural poor (and, by extension, households deriving most of their income from agriculture).

[25] In 2007, the share of agricultural households increased from the previous year, when it was estimated at 16 percent.

[26] The poverty line is just one choice of deflator, and the results are robust using other deflators, such as the CPI. The poverty line is used to avoid combining data from multiple sources.

[27] For example, if an individual completed 10 years of schooling, one year in excess of the years normally taken to complete an O-level certificate, the O-level dummy for this individual would be 1 and all the other educational dummies 0.

[28] Because only the dependent variable is expressed in logs, the value of the dummy coefficient cannot be interpreted as a semi-elasticity. Instead, the relevant semi-elasticity should be calculated as $(e^{\beta} - 1)$.

Table 2.5: Determinants of individual real labor earnings, 2003-2007

	2003	2004	2005	2006	2007
Individual characteristics					
Completed primary cycle	0.0286	0.252***	0.224***	0.151	-0.0617
Completed O-level cycle	0.0838	0.310***	0.349***	0.218**	0.00486
Completed A-level cycle	0.544***	0.581***	0.642***	0.458***	0.373***
Has tertiary degree	1.122***	1.593***	1.582***	1.340***	1.302***
Years of experience	0.0274***	0.0161***	0.0145***	0.0163***	0.0219***
Years of experience squared	-0.000371***	-0.000158***	-0.000142**	-0.000201***	-0.000275***
Female	-0.200***	-0.180***	-0.159***	-0.145***	-0.167***
Sector of employment					
Agriculture, forestry, or fishing	-0.563***	-0.363***	-0.310***	-0.381***	-0.403***
Mining	0.360**	0.730***	0.646***	0.477***	0.605***
Manufacturing	-0.181***	0.0246	-0.0455	-0.00902	0.0456
Construction and utilities	0.0656	0.0787**	0.216***	0.171***	0.153***
Trade, hotels, restaurants	-0.268***	-0.0971***	-0.225***	-0.145***	-0.112***
Area characteristics					
Urban other than KMA	-0.231***	-0.236***	-0.246***	-0.257***	-0.129***
Rural	-0.158***	-0.271***	-0.297***	-0.281***	-0.194***
Intercept	4.105***	4.035***	4.008***	4.083***	4.090***
Observations	2,701	3,584	3,171	3,457	3,078
R^2	0.177	0.316	0.343	0.351	0.338

*** p<0.01, ** p<0.05, * p<0.1.
Notes:
Dependent variable is expressed in natural logarithms.
Real labor earnings (wages) for every year after 2003 are calculated by deflating the observed (nominal) labor earnings by the rate of annual growth in the poverty line from JSCL.
Observations are weighted by sample weights and regression estimated with robust standard errors.
Educational dummies correspond to the individual completing the requisite number of years for a specified certificate, rather than the actual attainment of the certificate.

2.20 **Similar pattern holds after adding controls for the determinants of labor-market participation.** To the extent that individuals may participate in the labor market only if the offered wage exceeds their reservation wage, the observed distribution of wage determinants (such as education, experience, etc.) is a non-random sample of the underlying population. Therefore, the OLS coefficient estimates of Table 2.6 will be biased if the same characteristics that determine real wages also determine the likelihood of labor- market participation. Moreover, to the extent that there exists a set of statistically significant determinants of labor-market participation, failure to take this selection process into account will result in omitted variable bias (a violation of the assumption of zero conditional mean of the error terms). Heckman's (1974) solution to this problem—known as the Heckit procedure—is to estimate a system of equations where the first stage (selection) is a probit determining the likelihood of labor-market participation and the second stage (outcome) is the desired Mincer equation. The Heckit estimates of real-wage dynamics are shown in Table 2.7: the first column for each year, ln(wage), shows the selection-corrected estimates of the real wage determinants, while the second column, P(wage), shows the determinants of labor-market participation, which include the full set of variables in the outcome equation as well as a set of identification variables that

explain participation but not earnings.[29,30] The tan (ρ) row of the table shows the results of hypothesis testing on ρ, the coefficient of correlation between the error terms in the selection and outcome equations. The statistically significant value of ρ in each year indicates that the selection bias is present and OLS estimates are likely to be biased. This can be observed, for example, by comparing the educational dummy coefficients in each year between Table 2.6 and Table 2.7. The estimated coefficients are lower in the latter because education is a significant determinant of labor-market participation, and the more educated individuals are more likely to be employed and earn a wage. However, it is also obvious from comparing the results of Table 2.6 and Table 2.7 that the overall pattern of returns to education remains broadly the same regardless of whether controls for selection are added to the equation; in other words, the returns to education appear to first rise and then fall without a very clear overall pattern.

Table 2.6: Determinants of individual real labor earnings with selection controls, 2003-07

	2003		2004		2005		2006		2007	
	ln(wage)	P(wage)	ln(wage)	P(wage)	ln(wage)	P(wage)	ln(wage)	P(wage)	ln(wage)	P(wage)
Household characteristics										
Number of persons aged 0-13		-0.0109		-0.0174		-0.0651		-0.014		-0.152**
(Number of persons aged 0-13)*female		-0.0434		0.0468		0.0809		0.0348		0.144*
Number of persons aged over 65		-0.0742**		-0.124***		-0.167***		-0.159***		-0.118***
(Number of persons aged over 60)*female		-0.0782		-0.014		-0.281**		-0.0717		-0.0516
Partner is working		0.454***		0.336***		0.238***		0.402***		0.461***
(Partner is working)*female		-0.519***		-0.498***		-0.364***		-0.478***		-0.529***
Individual characteristics										
Completed primary cycle	-0.172	0.339***	0.329***	-0.268**	0.278***	0.138	0.192*	0.0629	0.0392	-0.206
Completed O-level cycle	-0.11	0.440***	0.357***	-0.122	0.409***	0.272**	0.236**	0.281**	0.0912	-0.0167
Completed A-level cycle	0.0888	0.891***	0.547***	0.222*	0.634***	0.685***	0.394***	0.662***	0.327**	0.451***
Has tertiary degree	0.479**	1.196***	1.341***	1.133***	1.450***	1.735***	1.107***	1.565***	1.027***	1.328***
Years of experience	-0.0445***	0.113***	-0.0192***	0.112***	-0.00287	0.105***	-0.0121**	0.112***	-0.0140***	0.110***
Years of experience squared	0.000811***	-0.00183***	0.000447***	-0.00186***	0.000157	-0.00168***	0.000279***	-0.00183***	0.000348***	-0.00186***
Female	0.151***	-0.459***	0.0238	-0.569***	-0.0958*	-0.495***	-0.0132	-0.521***	-0.00749	-0.515***
Area characteristics										
Urban other than KMA	-0.219***	-0.06	-0.266***	0.151***	-0.263***	0.168***	-0.290***	0.190***	-0.161***	0.125***
Rural	-0.267***	0.0775*	-0.333***	0.164***	-0.325***	0.185***	-0.308***	0.154***	-0.234***	0.103***
Constant	5.765***	-1.805***	4.718***	-1.043***	4.370***	-1.580***	4.662***	-1.511***	4.799***	-1.238***
tan(ρ)		-1.194***		-0.859***		-0.458**		-0.726***		-0.836***
Observations	8,338	8,338	9,028	9,028	8,891	8,891	8,909	8,909	8,303	8,303

*** p<0.01, ** p<0.05, * p<0.1.
Note: Model is estimated with a Heckman maximum likelihood estimator with robust standard errors. First stage (selection) results are reported in the P(wage) column, second stage (outcome) results are reported in the ln(wage) column. Observations are weighted by sample weights;
Real labor earnings (wages) for every year after 2003 are calculated by deflating the observed (nominal) labor earnings by the rate of annual growth in the poverty line from JSCL. Educational dummies correspond to the individual completing the requisite number of years for a specified certificate, rather than the

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[29] Theoretically, the exclusion restriction can be satisfied simply by the non-linearity of the inverse Mill's ratio (IMR) in the outcome equation and therefore no additional identification variables are required. In practice, the IMR tends to be quite linear across most of its range, and the inclusion of identification variables improves the performance of the estimator.
[30] Note that the Heckit model does not include the sector dummies that were present in the OLS estimates. This is because the sector of employment is not observed for unemployed or those out of the labor force; since this variable cannot be included in the selection equation, it cannot be a part of the outcome equation.

2.21   **Other determinants of the real wage, such as experience and gender, do not exhibit an obvious trend between 2003 and 2007.** The OLS estimates of Table 2.6 show concave returns to experience and a negative wage premium for female workers, both fairly standard results in the Mincer equation. The Heckit estimates of Table 2.7, however, are very different: the female wage premium is insignificant for most years, and the returns to education become convex. The results could be due to the exit of skilled and high-earning women from the labor force (see the negative coefficient on the female dummy in the selection equation and the discussion in the labor chapter of this CEM). The concave relationship between experience and the likelihood of labor market participation suggest higher-paid workers may be able to retire (exit) earlier than lower-paid workers, driving down the observed wage for older workers. These results may also be linked to the increase in Jamaicans' reservation wages due to rising remittance inflows (documented in Kim, 2007), which could encourage older workers and women from families with migrants (who tend to be better-educated and higher-earning on average) to exit the labor force. Both the simple estimates Table 2.6 and the Heckit estimates of Table 2.7 show no clear pattern in the evolution of returns to experience or gender.

2.22   **Labor-market variables feature strongly in the determinants of household welfare.** Table 2.8 shows the estimated relationship between the log of real household consumption per adult equivalent for the years 2003 to 2007 and a set of explanatory variables pertaining to the primary earner, the household overall, and a set of locality dummies.[31] The education and primary earner's employment sector are strong determinants of household welfare, while the primary earner's experience does not appear to significantly affect welfare, once it is controlled for the first two factors. In each year, the returns to reaching a particular level of education become progressively higher as equivalent certificates become more advanced. The dummies for the primary earners' employment sectors show the difference in welfare that households achieve relative to a household with a primary earner in agriculture. The results indicate that, *ceteris paribus*, households with a primary earner in agriculture, construction, and utilities have lower average welfare levels, while those in mining enjoy a welfare premium. Beyond the labor-market variables, household size has a significant negative impact on household welfare, while the youth and elderly dependency ratios do not have a significant additional effect.[32] The effect of home ownership on welfare is positive and significant in most years, although the magnitude is not very large (e.g., the benefits of the primary earner completing even a primary cycle are much greater). Finally, lower levels of household welfare and higher incidence of poverty in rural areas—documented in Table 2.1 and Table 2.5—are confirmed even after controlling for lower average educational attainments and the greater prevalence of agricultural workers in these areas.

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[31] For years 2004-2007, observed household consumption has been deflated by the rate of growth in the poverty line to obtain real consumption per adult equivalent.

[32] The coefficients bear the expected negative sign in most cases, even though they are not statistically significant at conventional confidence intervals.

Table 2.7: Determinants of household welfare per adult equivalent, 2003-07

	2003	2004	2005	2006	2007
Primary earner characteristics					
Completed primary cycle	0.206*	0.278***	0.0634	0.116	0.216***
Completed O-level cycle	0.399***	0.407***	0.174**	0.181**	0.291***
Completed A-level cycle	0.668***	0.587***	0.447***	0.340***	0.498***
Has tertiary degree	1.008***	0.946***	0.974***	0.987***	0.846***
Years of experience	0.0136**	0.00404	0.0100*	0.00185	0.00155
Years of experience squared	-0.0000796	0.0000296	-0.000118	0.0000152	-0.000017
Primary earner sector of employment					
Agriculture, forestry, or fishing	-0.272***	-0.331***	-0.187***	-0.301***	-0.250***
Mining	0.0438	0.225*	0.219	0.331**	0.354***
Manufacturing	0.0741	-0.200***	-0.153***	-0.106**	-0.00609
Construction and utilities	-0.189***	-0.161***	-0.116**	-0.0157	-0.0744
Trade, hotels, restaurants	0.00116	-0.0788*	-0.0701	-0.129***	0.0294
Household characteristics					
Head is male	0.0457	0.0398	0.0206	0.0494	0.111***
Household size	-0.110***	-0.125***	-0.116***	-0.118***	-0.103***
Under-14 dependency ratio	-0.118	0.000481	-0.06	0.0808	-0.037
Over-65 dependency ratio	-0.504***	-0.151	0.0459	-0.14	-0.033
Owns a house	0.161***	0.0207	0.0994***	0.0745**	0.0633*
Area characteristics					
Urban other than KMA	-0.0677	0.0173	-0.112**	-0.0765*	-0.0754*
Rural	-0.257***	-0.159***	-0.302***	-0.189***	-0.286***
Intercept	11.40***	11.62***	11.90***	11.89***	11.85***
Observations	753	1,375	1,501	1,332	1,418
R^2	0.377	0.338	0.339	0.293	0.31

*** $p<0.01$, ** $p<0.05$, * $p<0.1$.
Note:
Dependent variable is expressed in natural logarithms.
For each year after 2003, observed welfare is deflated by the rate of annual growth in the poverty line.
Observations are weighted by sample weights and regression estimated with robust standard errors.
Educational dummies correspond to the individual completing the requisite number of years for a specified certificate, rather than the actual attainment of the certificate.

2.23 **The combination of the education and sectoral dynamics explains a significant portion of the observed decline in inequality between 2003 and 2007.** Table 2.9 contains the results of a simple empirical exercise to understand the determinants of the decline in Gini coefficient between 2003 and 2007. The first row of the table reports the observed Gini coefficients (same as table 2.1) for ease of reference. The second row recalculates the Gini using only the households with information available for estimating the welfare regressions of Table 2.8. In some cases, such as 2003 and 2005, the within-sample and overall Gini coefficients are nearly identical; in others, such as 2006 and 2007, the difference amounts to several Gini points. The third row shows the Gini coefficient calculated on predicted, rather than observed, welfare. In other words, the distribution of household welfare underlying the Gini coefficient reported in this row was obtained by using, for each household, the predicted (or expected) value of household welfare as given by the household's endowments and the estimated returns to these endowments (the coefficients in table 2.8). Not surprisingly, using the "average" estimated coefficients yields predicted inequality that is substantially below observed inequality. Finally, the last three rows of Table 2.9 show what inequality in each year could be if the returns to

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education and sectors remained the same as they were in 2003. In 2007, for example, the regression model yields an expected Gini of 20.23, more than 5 points below the predicted Gini of 25.53 in 2003. If the importance of education in determining household welfare had remained the same over this period, the predicted Gini for 2007 would instead have been 21.79 (fourth row of table 2.9). This suggests that the declining importance of education contributed as much as two Gini points to the reduction in inequality. Combining the effects of the educational and sectoral variables explains about half of the decline in inequality between 2003 and 2007, with the rest attributable to other variables and changes in household endowments.

Table 2.8: Observed and simulated inequality, 2003-07

	2003	2004	2005	2006	2007
Observed Gini	38.89	39.04	38.60	37.87	36.78
Observed Gini, within sample	38.85	35.11	38.16	32.37	32.26
Predicted Gini	25.53	21.78	23.96	19.36	20.23
Predicted Gini - 2003 education	25.53	23.14	23.36	21.19	21.79
Predicted Gini - 2003 sectors	25.53	21.39	24.84	19.40	20.64
Predicted Gini - 2003 education & sectors	25.53	22.68	24.27	21.23	22.20

D. CONCLUSIONS

2.24   **Between 2003 and 2007, the rate of poverty reduction in Jamaica far outpaced GDP growth.** During this time, real GDP per capita grew by less than 1 percentage point a year. However, consumption per capita—supported in great part by large and growing inflows of international remittances—grew nearly one-third faster. Poverty fell from 21 percent of the population in 2003 to less than 10 percent in 2007. The reduction was broad-based. The extreme poor benefitted at least as much as those living just below the moderate poverty line. Both urban and rural poverty fell substantially, although the urban declined at a faster rate. And households headed by males and females shared the benefits of poverty reduction almost equally.

2.25   **The reduction in poverty was driven by a combination of growth in mean consumption, reduction in inequality, and pro-poor changes in relative prices.** Nearly three-quarters of the total reduction in poverty between 2003 and 2007 can be attributed to the change in mean consumption. Had there been no change in inequality whatsoever, poverty still would have fallen by 78 percent of the observed reduction. This suggests that both increases in the average and pro-poor distributional shifts in consumption have been the drivers of poverty reduction in Jamaica, and neither alone would have been sufficient to deliver the observed decline in poverty. Moreover, the households in the second and third deciles of the income distribution appear to have gained the most over this period, providing further evidence of the positive distributional change. In addition, the pace of poverty reduction was also aided by a pro-poor shift in relative prices. Overall inflation was 57 percent and the prices of food and non-alcoholic beverages rose by 65 percent, while the cost of the consumption basket of the poor increased by just 49 percent between 2003 and 2007. Finally, poverty reduction has likely benefitted from specific government policies and programs, such as the PATH conditional cash transfer program. While the impact evaluation of such programs is beyond the scope of the current chapter, targeted programs to reduce poverty have likely played an important role in the overall effort to bring down poverty levels.

2.26   **A declining importance of education as a determinant of household welfare and a slight narrowing of welfare differences by the principal earner's employment sector contributed to the observed reduction in inequality.** Between 2003 and 2007, the real wage premiums of completing progressively higher levels of education did not exhibit an obvious pattern. However, the importance of education of the primary earner to overall household welfare appears to have fallen over time. On the other hand, part of the observed decline in inequality between 2003 and 2007 was also driven by a narrowing of welfare gaps determined by the primary earner's employment sector. After controlling for the level of education and the primary earner's experience, the narrowing can be seen as a potential sign of some improvement in the functioning of the labor market.

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CHAPTER 3.   GROWTH OBSTACLES IN JAMAICA

This chapter presents a growth diagnostics for Jamaica. The long term growth analysis of chapter 1 indicates that Jamaica's economic growth has been low for several decades and Jamaica was one of the world's slowest growing economies. Possible reasons for this poor performance include a large set of social and economic factors. The objective of this chapter is to identify the most binding obstacles for growth in Jamaica by filtering the set of possible factors that might be hindering growth. The analyses indicate that Jamaica's disappointing economic performance is a case of low productivity caused by (i) high crime rates, (ii) deficiencies in human capital and (iii) fiscal distortions (mostly tax distortions).

A. INTRODUCTION[33]

3.1   **Jamaica's growth performance has been low during the last four decades both at regional and global levels.** Chapter 1 of this report shows that Jamaica's longer term economic growth has been disappointing and underperformed most other countries. Jamaica's poor growth performance occurred in spite of political stability since independence in 1962, several market-oriented reforms since the 1980s, and relatively high rates of private investment over the years. Notwithstanding the low growth, poverty declined and income distribution improved overtime, creating a better social environment (see chapter 2).

3.2   **Jamaica's poor growth performance could have a number of explanations, including some related to natural conditions.** Jamaica is a small island, rich in natural resources, such as bauxite and beautiful beaches for tourism. However, it is also highly vulnerable to natural disasters, mainly hurricanes and floods, and to volatile international prices for its mining products. Jamaica has a history of chronic fiscal deficits and high public debt. The debt constrains the flexibility of macroeconomic policies, leaving Jamaica vulnerable to changes in market sentiment. In addition, Jamaica has an extensive regime of tax incentives for investments. They distort the allocation of investment funds; in some cases, they are generous enough to justify projects that otherwise would have had a negative rates of returns. Other possible explanations of the high investment/low growth puzzle are related to social behaviors, which may be outgrowths of economic and institutional policy. One notorious example is crime: Jamaica is the second most violent society in the world. Crime may be impeding the country's development by: (i) discouraging human capital accumulation; (ii) diverting resources into security and health care expenditures and away from productive industries; and (iii) increasing risks and constraining business expansion. High crime may have led individuals and firms to leave the island. Finally, it may have favored "enclave" investments—tourism is a clear

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[33] Planning Institute of Jamaica prepared a growth strategy titled "Growth Inducement Strategy for Jamaica in the Short and Medium Term" in March 2011. The objective of this strategy is reported as analyzing the current state of the economy and, on this basis, developing recommendations for policy and action to induce economic growth, starting with the upcoming budget process for the new fiscal year 2011/12 and going forward into the medium-term 2012/2014. This chapter is focused on long-term economic growth, and in this regard, it is complementary to PIOJ's strategy.

example—that are shielded from criminal activities but deliver few spillovers to the rest of the economy.

3.3   **When it comes to human capital, a very important input for growth, Jamaica shows a complex pattern.** The country's educational level is low for its level of development but in line with other Caribbean countries. The quality of education is low compared with other countries of similar development, and spending on workers' training and the stock of highly educated workers are both very low. Human capital is not abundant and the returns to schooling in Jamaica have been extremely high for at least 25 years, signaling a scarcity in human capital. However, investing more in education might not pay off in a country with high migration rates, particularly for highly educated people.

3.4   **In addition to creating brain drain problems, the historically high migration rate has generated growing remittances.** The incoming money flows grew two and a half times between 2000 and 2008, amounting to 16 percent of GDP at present. Remittances could affect growth and investments positively or negatively. On the positive side, they might help improve human capital accumulation, boost local consumption, and even help finance some investment. The negative aspects include the possibility that remittances will create dependence on external conditions, induce an overvalued currency (Dutch Disease problems), and provoke reductions in the labor supply by increasing reservation wages. For Jamaica, evidence seems to point to migration hurting the economy.

3.5   **Another feature of the Jamaican economy is a high and growing informality.** Some studies have found that informality has increased from 13 percent of GDP to more than 40 percent in the past two decades. According to economic research, informal activities usually are related to low-value-added, labor-intensive production, with limited potential for productivity growth, low capacity of capital accumulation, and virtually no access to international markets. In addition, informal labor limits human capital accumulation. In Jamaica, this characterization might not be so straightforward. The country's informal sector is very complex; it includes illegal activities such as drug trades, but also music & entertainment, one of the most creative and dynamic sectors of the Jamaican economy. The increase in informality could also indicate measurement problems related GDP and GDP growth.[34]

3.6   **This brief introduction shows that the list of potential candidates for binding constraints to Jamaica's growth is large, and the identification might be complex.** It also shows that it is necessary from a policy perspective not only to identify constraints but also to understand the interactions and generate a hierarchy of "most" binding constraints. That is the restraints that, if removed, would have the largest payoff in terms of economic growth.

3.7   **Identifying and creating a hierarchy of most binding constraints involves a complex search through many potential candidates, which must be validated by empirical evidence**. The Growth Diagnostics Methodology (GDM) approach is used to

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[34] According to the IMF country report (2006), the average annual GDP growth underestimation during 1991-2000 is about 3 percent.

study the Jamaican growth process and identify its binding constraints. Initially proposed by Hausmann, Rodrik, and Velasco (2005), the GDM approach seeks to simultaneously resolve the identification and sequencing issues that surround the removal of binding constraints. It closely resembles the "clinical economics" approach of Sachs (2005) in that the identification process requires formulating a set of questions about constraints to competitiveness and growth and looking for quantitative evidence to support an answer.

3.8   **The rest of the chapter is structured as follow**: Section B introduces the Growth Diagnostics Methodology (GDM) and discusses its relevance to the case of Jamaica. Section C presents a detailed analysis of high investment low growth in Jamaica and discusses existing distortions in the economy. Section D discusses access to finance and cost of financing Section E and F analyze the possibility of having low social returns and low appropriability in Jamaica. Finally, Section G offers concluding remarks.

B. METHODOLOGICAL APPROACH

3.9   **The GDM approach was originally developed to help identify and diagnose constraints to growth due to insufficient capital accumulation (investment).** GDM uses cost-benefit analysis to provide an orderly way to find binding constraints following a private investment decision. Low levels of investment are attributed to risk-adjusted private returns to factor accumulation that are lower than the cost of financing. This gives two initial alternatives for analyzing an economy: (a) private returns are reasonable but the cost of financing is excessively high, which indicates the economy is restricted by access to financing, or (b) the cost and availability of financing is reasonable but the economy has low private returns. These can be low because of problems of appropriability—that is, the economy has plenty of socially profitable returns (high social returns) but private investors cannot appropriate those returns. Examples of problems of appropriability are crime, corruption, and externalities. On the other hand, it could be that appropriability is fine but social returns are low. This could happen, for instance, because of a lack of complementary inputs, such as infrastructure or human capital, or because of the economy's lagging competitiveness. This structure allows the researcher to make an orderly search for the most binding constraints, going through all potential factors.[35]

3.10   **The methodology envisages a clinical economics approach to finding symptoms and establishing the source of problems**. In this search, it is not enough to find that a factor is deficient compared to other economies; it should also be observed that high prices (or shadow prices) for this factor as a signal of scarcity. For instance, human capital being low will not necessarily mean a binding constraint to growth. It is necessary to also find high returns to schooling, showing that its price is high and therefore the factor is scarce. Since the availability of information and the nature of the problems are often quite different across countries a test-type approach is not only impossible but also not recommended. In

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[35] Beyond identifying problem areas, a particular interest in applying GDM is trying to understand the constraints' interaction and hierarchies to better design economic policies. The hierarchy identifies the most binding constrains—that is, those that, if removed, would generate the highest impact on growth (i.e. constraints with higher shadow prices). The interaction among different constraints is complex and involves relationship of substitution (constraints that could be removed independently) and complementarities (constraints that need to be removed together in order to have an impact on economic growth).

this sense, the analysis has to follow the "clinical economics" approach proposed by Sachs: first find the symptoms (stylized facts) and then try to establish the pathology (the source of those facts). The approach has to combine quantitative with qualitative analysis. To a large extent, the methodology is based on benchmarking.[36]

3.11   **Applying the standard GDM approach to Jamaica requires some rethinking in the framework because the original methodology was developed with the assumption that growth constraints come from low investment.** First, the original GDM is consistent with a growth model incorporating exogenous productivity. If productivity is low, private returns to capital are low. Therefore, the GDM framework captures the effects of total factor productivity (TFP) on the economy through growth's complex interactions with factor accumulation. If productivity is endogenous, however, it is important to understand which factors are responsible. Second, the standard GDM does not consider the possibility of growth being low in spite of high investment rates. This combination might emerge, for example, if capital is misallocated across sectors, perhaps the result of misguided public investment or distortive subsidies to private investment. High investment might also yield low growth if an inefficient substitution of capital for labor arises due to high real wages pushed by powerful trade unions, labor market rigidities, or flawed tax systems that favor capital expenditures, even low productive ones.[37] Third, Da Costa (2007) and Auguste (2010) remind us that institutions and governance are very important to understanding the relative performance of English-speaking Caribbean economies. As Rodrik (2004) states, it is more important to find the right way of making policies than finding the right policies. In other words, the policy process needs more attention. The standard GDM approach does not explicitly take into account institutions and policy process.

3.12   **The standard GDM still provides a useful tool to analyze cases with endogenous productivity, high investment/low growth and significant differences in institutional and governance structures.** Sanchez and Butler (2009) propose to use a similar decision tree as originally proposed Hausmann et al (2005) to analyze productivity. They contend that the development and adoption of new technologies—the drivers of endogenous productivity—requires a cost and benefit analysis that is similar to the one used in deciding capital investment. Of course, the factors in the two analyses could be different. If investment is high due to high public investment, the cause of low growth is likely to be inefficient government—for example, a highly politicized public investment process. If private investment is high, however, it creates a greater need to understand and analyze the investment process and the factors motivating investment. The analytic tool remains the standard decision tree, looking first, for example, at whether high investment/low growth is due to distortions in financing or distortions in the private return to investment. Similarly, mapping the policy process will entail different factors in the GDM tree.

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[36] A natural comparison for Jamaica is the rest of the Caribbean economies, although Jamaica has a larger size. The fact that the country is an island is another issue that should not be neglected when making comparisons to other countries.
[37] Hopenhayn and Neumeyer (2004), for instance, argue that capital accumulation in Argentina, during the period when the government followed an import substitution strategy, was high but inefficiently allocated Investment went to sectors of low and falling productivity, largely because of significant price distortions.

Low Growth: and Low I/GDP

High Private Return but Barriers to Investment

Low Returns to Economic Activities (Lack of Opportunities)

Costly International Finance - High Country Risk
- Poor public debt management,
- FDI conditions unattractive
- Capital controls

Costly Local Finance
- Low Domestic Savings:
  1. Financial system weakness
  2. Inappropriate savings-boosting framework
- Poor Intermediation (high spreads)
  1. Little competition
  2. Weak Regulation
  3. Thin domestic markets

Low Appropriability

Government Failures
  1. Expropriation
  2. Legal Instability
  3. Corruption
  4. Crime
  5. High taxation or inefficient tax structure
  6. Poor banking regulations (high risk of banking crisis)
  7. Risk of financial or fiscal crisis
  8. Foreign exchange risk
  9. Informality

Market Failures
  1. Information Externalities
  2. Coordination failure
- Property Right badly defined or enforced

Low Social Returns
- Low supply of complementary inputs:
  1. Insufficient Human capital
  2. Poor infrastructure
- Poor Geography or Natural conditions (e.g. economies affected by natural disasters)
- High transport, telecommunications or shipping costs.
- Low Productivity & Competitiveness
- Too little self-discovery
- Little Technology Adoption

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C. IS JAMAICA A CASE OF MASSIVE DISTORTIONS?

C.1. High Investment and Low Economic Growth. Is There Really a Puzzle?

3.13   **A careful analysis is necessary to shed light on the puzzling case of high investment and low economic growth in Jamaica**. As discussed in chapter 1, Jamaica's growth performance lags significantly behind other economies with comparable investment ratios. Several studies pointed out various explanations for this apparent paradox. They include (i) potential mismeasurement of GDP growth; (ii) high replacement investment due to chronic natural disasters; (iii) distorted capital accumulation due to high level of crime; (iv) insufficient public investment due to debt overhang; and (v) large investment in construction with a significant unproductive part. The section below analyzes all these factors to see whether Jamaica is really a puzzle, or whether there are caveats to it.

Is real GDP growth is underestimated?

3.14   **Real GDP growth could be underestimated due to rising informality in Jamaica.** The 2006 IMF Country Report for Jamaica shows that the informal economy rose almost 16 percent a year in the 1990s, whereas registered GDP grew at only 0.29 percent. The non-registered sector increased from 12.9 percent of GDP in 1991 to 40 percent in 2000. Adding the informal economy to registered GDP raises the annual growth rate to 3 percent (see table 3.1). An IDB (2006) study on informality finds similar results. Using the monetary approach, electricity consumption method, and the method of additions, the study finds that the informal economy represented 43 percent of Jamaica's GDP in 2001.[38]

Table 3.1: Jamaica: Correcting GDP Growth for Informal Economy (in constant prices)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	Average
Share of informal GDP	14.9	16.3	21.1	20.9	27	25.1	28.4	34.7	41.2	39.1	
Formal GDP	19,098	19,416	19,799	19,977	20,181	19,970	19,624	19,558	19,473	19,603	
Formal GDP (adjusted for informal economy)	17,983	18,156	18,034	18,218	17,693	17,739	17,029	16,094	14,925	15,408	
Growth		0.96	1.97	0.9	1.02	-1.05	-1.73	-0.34	-0.43	0.67	0.29
Informal GDP	3,344	3,781	5,295	5,278	7,464	6,692	7,784	10,393	13,644	12,586	
Growth		13.08	40.03	-0.31	41.41	-10.34	16.31	33.52	31.28	-7.76	15.87
Total GDP	21,327	21,937	23,329	23,496	25,157	24,431	24,813	26,487	28,569	27,994	
Growth		2.86	6.35	0.72	7.07	-2.88	1.56	6.74	7.86	-2.02	3.07

Source: "Jamaica: Selected Issues", IMF Country Report No. 06/157, May 2006.

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[38] The results provided by the electricity consumption method (45 percent of GDP) are higher than those from the two alternative approaches. The authors believe the electricity data could overestimate the contribution of the informal sector to Jamaica's economy.

Table 3.2: LAC: Correcting GDP Growth for the Informal Economy (constant prices)

| Country | Informality (as % of GDP) | | Annual Growth Rate (1990-2005) | | |
	1990	2005	Formal Sector	Informal Sector	Total
Argentina	22.1	27.2	3.7%	6.8%	4.0%
Bolivia	55.4	67.2	3.9%	8.9%	4.4%
Brazil	32.5	41.8	2.6%	6.8%	3.1%
Chile	13.6	19.4	5.7%	9.5%	6.0%
Colombia	33.4	42.7	3.0%	7.2%	3.4%
Costa Rica	22	26.3	4.8%	7.8%	5.1%
Dominican Rep.	28.3	34.8	5.2%	8.8%	5.6%
Ecuador	28.9	35.2	3.0%	6.5%	3.3%
Guatemala	41.4	50.3	3.8%	8.0%	4.2%
Honduras	40.7	49.3	3.7%	7.9%	4.2%
Jamaica	**31.4**	**38.4**	**1.8%**	**5.5%**	**2.2%**
Mexico	24.1	31.7	2.9%	6.8%	3.3%
Nicaragua	40.1	48.1	3.3%	7.3%	3.7%
Panama	51.4	62.2	4.8%	9.6%	5.3%
Peru	47.1	58.2	4.0%	8.8%	4.6%
Uruguay	41.3	49.2	2.3%	6.3%	2.7%
Venezuela	27.4	35.4	2.2%	6.1%	2.7%
Average			**3.6%**	**7.6%**	**4.0%**

Source: Artana, Auguste, Panedeiros 2010

Figure 3.1: Measures of Informality and GDP Growth

Source: STATIN

3.15 **One limitation of both analyses is that Jamaica's informality is not compared to similar countries**. The argument that informality explains the high investment/low growth puzzle rest on the assumption that informality results in larger downward biases for GDP and growth in Jamaica than in other countries.[39] To overcome this shortcoming, informality in Jamaica is put in a LAC context using the Schneider and Klinglmair (2007) measure of cross-country informality. The results indicate that: (a) Jamaican informality is in line with its level of development, (b) a high correlation exists between informal and formal GDP growth, and c) there is no statistical evidence of a correlation between informality and I/GDP ratio. Using the Schneider and Klinglmair measures, Jamaica's GDP growth rate taking into account the increase in informality in 1990-2005 is estimated at 2.2 percent, underperforming the LAC average of 4 percent (see Table 3.2). The results also indicate that Jamaica's informal sector growth of 5.5 percent was below the regional average 7.6 percent.[40]

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[39] If both informality and investment are excluded from registered figures, there is no bias in the ratio. However, this depends conditions in each country: whether capital goods are imported or produced locally under similar informal conditions (i.e. both informal GDP and investment is underestimated), and whether informal sector is capital or labor intensive. For small open economies like Jamaica, the bias is to not register GDP while registering investment because it is imported, This tends to increase the investment to GDP ratio. On the other hand, it is generally assumed that informal activities are labor intensive, outweighing the previous bias. In the case of Jamaica, anecdotal evidence indicates the informal sector might differ from the standard characterization. More studies on the informal economy in Jamaica are needed, but there is no obvious evidence that the informal sector is capital intensive.

[40] Schneider and Klinglmair's measures of informality calculates GDP growth, adjusted for informality, at 2.2)percent a year, lower than the IMF's 3 percent. The time window used is different too. Even using the IMF's figure, Jamaica underperforms the LAC average.

3.16   **The informality argument could be a phenomenon specific to the 1990s and does not solve the high investment/low growth puzzle.** Both the IMF and the IDB studies focused on the 1990s. However, indications of rising informality seem to have weakened after 2000s. For instance, electricity sales, an indicator used to measure informality, increased significantly more than the real GDP growth throughout the 1990s. However, it converged to real GDP growth in the 2000s, implying that the level of informality might have peaked (see Figure 3.1). Even if rising informality in 1990s could partly explain that decade's low official growth numbers, it cannot explain why the growth has been low in four decades since the 1970s.

Replacement investment due to natural disasters

3.17   **Jamaica is exposed to high risks of natural disasters, which might cause significant capital stock losses; therefore, a substantial share of investment might be simply for replacement.** Compared to other countries in the region, Jamaica has an intermediate degree of exposure to natural disasters. A study by the Planning Institute of Jamaica (PIOJ) estimated the damages associated with major hurricanes at 65 percent of GDP for Hurricane Gilbert in 1988, 8 percent for Hurricane Ivan in 2004, and 1 percent for Hurricanes Michelle in 2001 and Dennis and Emily in 2005 (see Blavy, 2006). Newspapers reported the following monetary costs: Hurricane Dean at US$310 million (2007), Hurricane Dennis at US$31.7 million, Hurricane Michelle at US$18 million, and Hurricane Wilma (2005) at US$93.5 million (see Figure 3.2).

Figure 3.2: Natural Disasters, 1970-2007

Source: Artana, Auguste, Panadeiros 2010: Authors elaboration based on EM-DAT: The OFDA/Cred International Disaster Database. www.emdat.be Université Catholique de Louvain. Brussels for number of persons affected and damages.

3.18   **A Caribbean-level comparison shows that high investment to GDP is a common factor for most of the islands, although the countries do not have the same exposure to**

natural disasters. For instance, Trinidad and Tobago and Barbados, the two countries with lower than the average exposure, invest below the regional average and have grown faster than other Caribbean nations.[41]

3.19 **Not many studies attempt to define the extent natural disasters can explain the high investment/low growth puzzle**. A rough estimate by Longmore (2010) puts the cost of rehabilitation work arising from these shocks at an annual average of 5.8 percent of gross fixed capital formation since 2000. If this estimate is right, natural disasters can explain some but not all of the higher investment in Jamaica than in the Central or South America countries that have grown faster (see Figure 3.3). Nonetheless, natural disasters can generate other biases in capital accumulation—for instance, more expensive capital stock for the same output. More research is needed in this area. A lack of sectoral investment data and disaggregated use of investment goods is a major challenge for further research.

Figure 3.3: Investment and Growth from a Regional Perspective

	Gpc	GFCF/GDP
Antigua and Barbuda		53.1
Bahamas, The	0.50%	32.9
Barbados	1.33%	19.5
Belize	3.21%	21.4
Dominica	2.19%	27.4
Grenada	3.26%	38.3
Guyana	2.48%	28.6
Haiti		
Jamaica	1.68%	25.4
St. Kitts and Nevis	3.52%	44.5
St. Lucia	3.54%	24.5
St. Vincent and the Grenadines	4.30%	32.9
Trinidad and Tobago	3.74%	25.6
Average	**2.70%**	**31.2**
Costa Rica	2.77%	20.1
El Salvador	2.78%	16.3
Guatemala	1.51%	17.0
Honduras	1.50%	27.9
Dominican Republic	3.07%	20.2
Other island economies		
Fiji	1.52%	17.6
Papua New Guinea	0.18%	21.4
Tonga	1.13%	19.3
New Zealand	1.42%	22.0

Notes: G pc =Annual growth rate 1987-2007, GDP per capita (constant 2000 US$)
GFCF/GDP=Gross fixed capital formation (% of GDP), average 1987-2007

Distorted capital accumulation due to high crime

3.20 **Jamaica has one of the highest crime rates in the world and firms are forced to invest in protection.** Crime has grown rapidly in recent decades and currently is a major concern. According to World Bank (2004), expenditures on private security in Jamaica represent 1.3 percent of GDP. A large portion of such expenditures are related to capital expenditures (see figure 3.4). The increase in crime makes Jamaica a special case.

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[41] Honduras, another country with high exposure to natural disasters, has a similar low growth/high investment relationship. Auguste (2009) takes natural disasters into account in computing the country's capital stock, concluding capital accumulation has been much lower in Honduras than neighboring Costa Rica. However, Honduras has been investing 27 percent of GDP and Costa Rica 20 percent.

Figure 3.4: Crime Protection Actions by Firms in Jamaica

Measure	% Using Measure
Installing grill	58%
Upgrading accounting/records	50%
Special fencing of premises	49%
Hiring unarmed security guard(s)	49%
Internal security system	37%
Closing before dark	36%
Installing electronic alarm system	31%
Hiring armed security guard(s)	31%
Hiring community protection	9%

Source: UNOCD and World Bank (2007)

Sufficiency of complementary public investment

Figure 3.5: Gross Fixed Capital Formation as % of GDP

Source: Bank of Jamaica

3.21 **Public investment is often complementary to private investment or activities, raising the possibility that low public investment has been reducing productivity in Jamaica.** During 1993-2008, the central government's investment in Jamaica averaged 3.1 percent of GDP. Including public sector bodies, this spending rose to an average of 6.6 percent of GDP (see Figure 3.5). This data does not clarify whether public investment is too high or too low. International benchmarking is complex because activities carried out by the private sector vary widely across countries. In addition, Jamaica is affected by natural disasters and may need more public investment to sustain the same capital stock.

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Figure 3.6: Jamaica—Low Growth and Low Public Investment

Public investment (as a % of GDP) Vs. real GDP growth, average 1990-2009

Source: World Bank staff calculations

3.22 **Jamaica's economy trails the average growth rate of countries with similar public investment to GDP ratios, though more recent data points out to underperformance.** Blavy (2006) argues that Jamaica's growth is not much lower than average for countries with similarly low public investment ratios. However, repeating the analysis of Blavy (2006) using more recent data indicates that Jamaica still underperforms nations with similar public investment ratios (see figure 3.6). Jamaica's growth rate significantly below the regression line, given its level of public investment as a percent of GDP.

Construction

3.23 **According to Serju (2006), most Jamaican investment did not involve expansion of the productive capital stock but was concentrated in replacement of existing capital, security, and building construction.** Construction has accounted for an average of 45 percent of total investment since 1990, ranging from a minimum of 38 percent in 2002 to a maximum of 51 percent in 2008. Building construction dominates construction investment, averaging 92 percent of spending.

Figure 3.7: Investment in Construction
(% of total Gross Fixed Capital Formation, average 2000-2008)

Source: ECLAC

3.24 **Investment figures are not separated into residential and non-residential. Nonetheless, it is possible to make some inferences through other sources of information**. Clearly, a large part of construction investment is related to tourism. The stock of rooms increased by 65 percent between 1990 and 2008. Investment in residential construction is also significant, influenced by replacement investment after

weather-related destruction and the inflow of remittances. The government-administered Housing Trust Fund facilitates investment in residential housing through mortgage credits. Compared to the Dominican Republic, a Caribbean country also influenced by remittances and tourism development, construction's share of spending is not that high in Jamaica (see Longmore, 2010). Construction represented around 75 percent of total fixed investment in the Dominican Republic. However, this high share of total investment in construction has not limited economic growth in the Dominican Republic. Similarly, compared to a larger set of LAC countries, the share of construction in gross fixed capital formation in Jamaica is not high (see figure 3.7). Nonetheless, more research is needed in this area. Existing data does not allow for separating residential investment from non-residential to understand the level of productive investment in construction.

Conclusion

3.25 **The qualifications in this section are unlikely to alter the high investment low growth situation in Jamaica**. Measurement problems due to rising informality could have led to under estimation of GDP in certain periods but it does not explain the low growth in the last four decades. High replacement investment due to natural disasters is likely but Jamaica still underperforms other Caribbean and Central American countries which are also subject to major natural disasters. Investment towards crime prevention is significant but it affects the productivity of investment rather than making investment low relative to other countries. Complementary public investment is not lower than comparator countries which have grown faster. Level of investment in construction is also not higher than regional comparators.

C.2. If there are Distortions, Where are They?

Labor Markets

3.26 **Labor market conditions are not considered to be a binding constraint for growth in Jamaica.** Chapter 4 presents a detailed analysis of labor markets in Jamaica. The overall conclusion emerging from the chapter is that labor market regulations do not create any significant constraint to growth. Some studies point out that labor costs have grown faster than productivity changes, reducing competitiveness of tradable sectors (see chapter 4). However, there are valid reasons for this trend. The increase in crime, remittances' impact on the reservation wage, and migration are all factors that push wages up. Labor regulations in Jamaica do not seem to be particularly rigid compared to other LAC countries. High wages could encourage substitution of capital for labor. Since this situation seems to emerge from constraints unrelated to labor regulation, low productivity of investment cannot be attributed to labor distortions. Therefore, this is not a binding constraint to growth.

Tax Structure

3.27 **Jamaica's large number of tax incentives creates significant distortions, with possible negative impacts on innovation and productivity.** The incentives provide relief from income taxes on earnings and grant eligible enterprises concessions on import taxes and duties for up to 15 years. Some incentives provide other benefits, such as capital allowances. Many

incentives are specific to particular sectors, while others are available to any eligible applicant. The fact that tax incentives can be discretionary generates complex distortions. For instance, they might discriminate against new activities and new products, which do not have a business plan to show, or it might inhibit entrepreneurship because new enterprises do not have lobby power. Holden and Holden (2005) identified more than 200,000 different incentives—but they admitted that there may be even more. The identified incentives, according to the study, imply a 20 percent loss of government revenue. Tax incentives cover a wide range of activities. The sectors which benefited the most are tourism, industry, bauxite and mining, agro-processing, creative industries, shipping, and ICT.[42] In addition, companies that do not qualify under the incentive laws but show potential to contribute significantly to foreign exchange earnings and employment, may be granted relief from import duties for up to three years by the Minister of Finance.

3.28 **Jamaica's nominal income and corporate tax rates are relatively high in comparison to other Caribbean countries, but effective tax rates are very heterogeneous.** Among the largest taxpayers, for example, the collected tax rates were 2 percent for the telecommunications industry, 5 percent for the hotels/tourism industry, and 9 percent for the construction industry (see IADB, 2007). These effective rates, which result from generous tax incentives, are very low compared to the corporate income tax (CIT) rate of 33.3 percent (see figure 3.8).[43]

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[42] Some of the benefiting sectors and related legislation are as follow: Tourism (Hotels Incentives Act; Resort Cottages Incentives Act; Attractions Incentive Regulation); Industry (Export Industry Encouragement Act; Export Free Zone Act; Modernization of Industry Programme; Accelerated Depreciation/Special Capital Allowance; Customs User Fee Waiver; Factory Construction Law); Bauxite and Mining (Bauxite and Alumina Industries Encouragement Act; Petroleum Refinery Encouragement Act); Agro-Processing (Approved Farmer Status); Creative Industries (Motion Picture Industry Encouragement Act); Shipping (Shipping Act) and ICT (Export Free Zone Act; Accelerated Depreciation/Special Capital Allowance; Export Industry Encouragement Act; Moratorium on Duties).

[43] Some generous Free Trade Zone investment incentives the are exempt from CIT indefinitely, while investments in hotels and certain agricultural activities may receive a tax holiday of 5–15 years. Special depreciation schemes include a partial expensing (initial allowance) of 20 percent of the investment, with normal depreciation for the remaining 80 percent of the asset's historical cost. A more favorable special capital allowance designed for machinery purchases in basic industries (part of manufacturing and construction) allows for depreciation over two years. However, the most important tax break is an investment credit of the cost of the capital good, which ranges from 20 percent for basic industry to 40 percent for the sugar industry (Investment Allowance).

Figure 3.8: Average CIT Rate Paid by Top CIT-Paying Industries

Source: based on IADB (2007)

3.29 **Incentives related to CIT allow projects with negative internal rate of returns (IRR) to be profitable for the private sector**. Table 3.3 summarizes the before-tax (and net of depreciation) real rates of return for equity and debt-financed projects. In a country with a typical tax code, when there is no inflation and the opportunity cost of capital is 10 percent, a debt-financed project requires a 10 percent internal rate of return (IRR) if there are no tax breaks; however, if the project is equity-financed, investors will demand a 15 percent return in order to obtain, net of taxes, the opportunity cost of their funds. On the other hand, in Jamaica, certain sectors receive different tax incentives and calculation of IRR changes significantly. For instance, in a scenario with a 10 percent inflation rate, a debt-financed investment in the sugar industry with a negative 17 percent a year social rate of return may yield investors a 10 percent positive return because the government covers 40 percent of the investment cost. The implied allocation of capital is highly inefficient. In sectors without subsidies, equity-financed investments will demand productivity high enough to yield IRR in the range of 14 percent; in other sectors, productivity could be so low to generate negative IRR (Artana and Navajas, 2004). Such distortions may in part explain poor economic growth in an economy with high fixed capital formation.[44]

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[44] Some studies of Jamaica's incentives suggest substantial bias in favor of capital-intensive projects, and particularly larger projects. These tax exemptions encourage informality in the business sector and penalize those with small amounts of capital, a characteristic of the large majority of native firms. See Artana and Navajas 2004.

Table 3.3: Annual Rate (%) of Before-Tax Real Rate of Return, by Project Type

	Projected Inflation Rate (%)					
	debt financed			equity financed		
	0	5	10	0	5	10
Typical Tax code						
No investment tax breaks and no indexation	10.0	7.8	5.5	15.0	15.2	15.5
No investment tax breaks and indexation	10.0	10.0	10.0	15.0	15.0	15.0
Jamaica						
General tax code						
Initial investment allowance (20%)	9.1	6.7	4.2	14.0	14.2	14.4
Accelerated depreciation (2 yrs) for new machinery	5.8	3.6	1.4	10.2	10.3	10.5
Exempt activities						
(hotels and free-trade areas)	10.0	10.0	10.0	10.0	10.0	10.0
Tax credit						
20% (building and machinery in some manufacturing and construction)	3.0	-1.4	-5.8	9.0	7.6	4.2
40% (buildings and machinery in agriculture and chips)	-4.0	-10.5	-17.1	1 .0	-3.0	-7.1

Source: Artana and Navajas (2004). Assumptions: the opportunity cost of capital in real terms is 10 percent and economic depreciation of the asset is 10 percent per year.

3.30 **As a promotion instrument, tax incentives might not be very successful.** FDI in Jamaica increased from 4 percent of GDP in 1990 to 7 to 9 percent in recent years; however, this performance is not impressive when compared to regional and worldwide trends in FDI inflows (see figure 3.9). In addition, Jamaica's FDI concentrates in a few sectors, largely following the same pattern as credit to the private sector. The sectoral distribution of FDI between 1998 and 2008 started with mining at 25.2 percent, followed by 20 percent in tourism, and 18.3 percent in information technology/communications. These three sectors accounted for about 64 percent of total FDI in this 10-year period. The empirical evidence about the benefits of tax incentives to attract FDI is controversial; even so, the estimation of the fiscal cost and the social cost-benefit of this promotional policy are considered important.[45]

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[45] A 2004 report by the Jamaica Tax Reform Committee drew on previous studies of the country's tax system and made a number of recommendations for tax reform, including commissioning of an independent study on the costs and benefits of incentives to the productive sectors.

Figure 3.9: Inward FDI flows

Inward FDI flows as % of GDP

Inward FDI flows as % of World and LAC Inward FDI flows

Source: World Investment Report 2008 and IMF Statistics

3.31 **At present, an extensive review of proposed tax reform measures is underway, taking into account previous tax reform studies**. The Foreign Investment Advisory Service (FIAS) assisted in the review, and the reform proposals include a reduction of the CIT rate to 25 percent and elimination of all tax holidays. However, the long-term plan—Vision 2030 Jamaica—reveals a hesitant position on the subject, supporting the idea "…that it will be necessary to determine the optimal incentives system that will contribute to the successful achievement of the long-term economic development goal…" (PIOJ, 2009).[46]

3.32 **The evidence suggests that the tax regime could be a binding constraint on Jamaica's growth because it distorts capital accumulation.** At present, however, it is likely that fiscal incentives are very difficult to dismantle because of the strong lobbying by rent-seeking organizations, even though the reforms could have been introduced in response to perceived market failures in the past, justified by the notion that spillovers were associated with investment.

C.3 Labor Productivity: Shift-Share Analysis

3.33 **In the absence of sector level investment data, analysis of possible labor misallocations can help understand the extent of potential distortions in the allocation of capital.** If labor is mobile, as it seems to be in Jamaica, distortions in capital allocation should be reflected in the resulting distortions in labor allocation. This section utilizes shift-share analysis

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[46] Eliminating CIT incentives will have benefits and costs. The costs are clear—ending these incentives will, *ceteris paribus*, lower the net return to capital and discourage investment in the favored industries. In Jamaica, industries with tax incentives represent a large share of the total capital stock, so that in aggregate, capital returns will fall for a significant portion of the economy. The benefit from eliminating these exemptions is improved capital productivity. In a tax-package, it is possible to eliminate incentives, then to use the funds to lower the overall corporate tax rate. Such a package will raise the return to capital if the lower CIT rate encourages enough investment to offset the investment demand reductions by those sectors losing incentives.

to examine if major labor market misallocation exists in Jamaica (Artana, Auguste and Panadeirost 2010).[47]

3.34 **In the shift-share analysis, labor productivity decomposes into three components:**[48]

    (i)   *within-change or shift component*, a weighted average of each sector's incremental labor productivity, using initial labor shares (a weighted average of TFP, capital stock per worker, and average human capital in the sector, assuming constant returns to scale). This term should explain 100 percent of the variation in per capita output under balanced growth.

    (ii)   *between-change or share component*, which is the growth in GDP per worker corresponding to the reallocation of labor across sectors. If labor goes from sectors with low to high labor productivity, the term should be positive; and

    (iii)   *interaction effect*, which is negative if labor goes from a sector with rising average productivity to sectors with falling output per worker.

3.35 **First reporting from Klinov (1986), the shift-share analysis for Jamaica shows two different and opposite periods during 1960-1984**. Before 1972, labor productivity was growing 5.2 percent a year, while the shift component, related to balanced growth, indicated a growth rate of 3.6 percent a year. The share component was 1 percent, implying that workers were moving from low labor productivity sectors to high labor productivity sectors (in this period, labor moved away from a sluggish agricultural sector). The residual was positive, showing that labor was moving from sectors where labor productivity was falling to sectors where it was increasing. All these are signs of a healthy economy allocating labor in the right direction. However, the situation changed dramatically in 1972-1980. All the shift-share components were negative, and labor productivity fell at 5.4 percent a year. There was strong evidence of misallocation of labor in this period. During 1980-1984, average labor productivity grew 0.4 percent a year, too low to return to pre-1972 levels. The share component was 2.7 percent, revealing strong gains of reallocating labor as some of the policies implemented in the 1972-1980 period were reversed. However, the shift component was -1.5 percent a year, suggesting falling productivity in each sector.

3.36 **Artana, Auguste, and Panadeirost (2010) extend the shift-share analysis to 2007**. Despite different data sets, the results are similar in both studies for 1974-1980 and 1980-1984. Regarding the post-1980 period, the results indicate that aggregate labor productivity growth was very low across the board, implying that the shift component was negative except for 1995-2000. The share component tracking reallocation of labor to sectors with high labor productivity was positive in all sub-periods, particularly the late 1980s and early 1990s, when some structural

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[47] Artana, Auguste, and Panadeirost (2010) follows the shift-share analysis methodology used by Hopenhayn and Neumeyer (2004) to analyze the case of Argentina. Artana et al (2007) also conducts a similar study to analyze capital allocation at sector level and rate of return for Trinidad and Tobago, finding that capital was allocated to sectors with high rates of return. This is evidence against distortions in the allocation of capital.

[48] The information needed for this analysis is a time-series evolution of GDP and employment at the sectoral level. The analysis starts in 1953 at aggregate level (Penn Table Data) and in the 1960s at sectoral level. Data availability does not allow for a longer time series or highly disaggregated sector analysis, somewhat limiting the study.

changes caused a pro-efficiency movement of employment. Since 1995, the contribution of the share component has been very small. The interaction effect is negative, but this is typical of most of the economies (negative and relatively small).[49] The results of both studies are presented in table 3.4.

Table 3.4: Shift-share Analysis for Jamaica

	1974-1980	1980-1984	1980-1990	1991-1995	1995-2000	2000-2007
Shift	-4.48%	-2.43%	-1.42%	-1.50%	0.95%	-1.66%
Share	-1.41%	2.10%	2.14%	2.30%	0.02%	0.52%
Interaction	-0.15%	-0.13%	-0.32%	-0.13%	-0.56%	-0.13%
Total	-6.04%	-0.46%	0.40%	0.67%	0.41%	-1.27%

Source Artana, Auguste and Panadeirost (2010)

	1968-1974	1974-1980	1980-1984
Shift	3.60%	-3.80%	-1.50%
Share	1.00%	-1.20%	2.70%
Interaction	0.60%	-0.40%	-0.80%
Total	5.20%	-5.40%	0.40%

Source: Klinov (1984)

3.37 **The shift-share analysis does not produce evidence of any major distortion in labor markets.** Jamaica has not been able to achieve high labor productivity growth after 1980. The analysis indicates this is not due to distortions that moved labor to low-productivity sectors, but rather to low productivity growth across the board. The analysis also indicates that labor has been mobile across economic sectors despite apparently strong labor unions. Real wages and unit labor cost have followed a trend similar to labor productivity (see table 3.5). This is evidence that labor market conditions might have not seriously distorted the allocation of resources among sectors. In this sense, it is still possible that high wages distort the entire economy (labor vs. capital). However, there is no visible impact on the allocation across sectors.

Table 3.5: Labor Market and GDP growth in Jamaica

	1968-1972	1972-1980	1980-1984	1984-1990	1990-1995	2000-1995	2007-2000
GDP growth		-3.4%	1.5%	3.4%	1.8%	-0.2%	1.6%
Employment Growth	1.2%	2.1%	2.0%	2.4%	1.5%	-0.6%	2.9%
Labor Productivity Growth	9.4%	-5.4%	-0.5%	1.0%	0.4%	0.4%	-1.3%
Real Wage		-6.9%	-0.6%	3.0%	2.6%	1.7%	-2.8%
Unemployment (beginning of period)	19.9	21.1	27.3	26	16	16	9

C.4. Conclusions

3.38 **The Jamaican tax system is probably distortionary, while the other factors analyzed in this section do not show a particularly unhealthy situation.** The tax system in Jamaica is complex and creates distortions that are difficult to quantify. Sectors with high investment seem to be sectors with tax benefits, such as tourism or mining. This does not prove causality—that tax distortions are affecting the allocation of capital. The ad hoc and discretionary system used in Jamaica might be validating a pattern of investment that might otherwise emerge in equilibrium because tourism and mining have clear comparative advantages. In other words, there could be reverse causality, with these sectors lobbying successfully for privileges. As will be discussed in

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[49] See Hopenhayn and Neumeyer (2004).

the following two sections, conditions related to private returns to investment in Jamaica—social returns and appropriability—are far from being ideal. Tax breaks may compensate for government failures but only some sectors get access to favorable treatment. In other words, tax incentives could be forcing too much capital accumulation in a few sectors. Given that the overall performance of the economy was poor, this "development strategy" (or way out to rent seekers) was not effective.

D. ACCESS TO FINANCE AND COST OF FINANCING

3.39   **Even though high investment rates in Jamaica indicate that there are no aggregate financial constraints, it is still important to make an in-depth analysis of the subject because many Jamaican firms complain about access to finance**. The annex 1 presents a detailed analysis of the possibility of access to finance being a constraint for growth in Jamaica. Only a brief summery is provided in this section.

3.40   **As a small open economy, the overall funds available to Jamaica do not seem to be a binding constraint to growth.** From a macro perspective, Jamaica does not restrict capital flows and has in fact been promoting FDI with fiscal incentives. It has large inflow of workers' remittances, which could be invested if there were good opportunities. Instead, the money has been consumed or invested in housing. National saving rates are in line with Jamaica's level of development.

3.41   **Analysis of real interest rates and credit flows to the private sector does not support the crowding out argument**. Jamaica has a high ratio of public debt to GDP and fiscal sustainability has been a chronic problem in recent decades. Since the early 1990s, debt structure in Jamaica has changed towards domestic debt, increasing the likelihood of crowding out the financial resources needed for private sector.[50] However, with very high public debt in the 1980s, for instance, domestic credit to private sector was high at very low real interest rates. In the 1990s, domestic public debt increased while credit to the private sector continued to grow, albeit at a slow pace. In the 2000s, domestic credit to the private sector increased at a pace consistent with the liquidity in the international markets, while government debt was stable or slightly falling. No clear pattern emerges from this analysis. Similar results emerge from looking at private-sector credit as percent of GDP in Jamaica and Barbados. When Jamaica's public debt fell in the late 1980s and early 1990s, private-sector credit's share of GDP declined relative to the ratio in Barbados. More important, when the public sector started issuing local debt in the 1990s, credit to the private sector in Jamaica improved slightly compared to Barbados. Overall, the evidence seems to be against the crowding-out hypothesis.

3.42   **The international context also does not give support to crowding out.** Domestic credit to the private sector as a percent of GDP is lower than expected for Jamaica´s development level, whether measured by GDP per capita or financial depth (M2/GDP). However, Jamaica's domestic banking credit is in line with the expected level for its level of economic development as reflected in GDP per capita. This implies that the development of the non-banking credit is

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[50]This shift is consistent with the common trends observable in many developing countries and in several heavily indebted poor countries (see Presbitero (2010), Panizza (2008) and Arnone and Presbitero (2010)).

lagging. Given that non-banking credit usually competes less with government debt, this does not support a crowding out scenario.

3.43   **In addition, current real interest rates and domestic interest rate spreads are in line with levels expected at Jamaica's economic development and financial depth.** Real interest rates are also aligned with the local risk premium as well as with the strength of legal rights. If high domestic government debt is crowding out financing in the private sector, interest rates (if they reflect shadow prices) should be above the level expected from examining international standards based on economic development or financial depth.

3.44   **Even though financial market conditions analyzed so far are not particularly bad, a large percentage of Jamaican firms that access to finance is a major constraint**. A cross-country comparison indicates that Jamaican firms systematically complain more about credit conditions. However, it is possible that the results are affected by the small sample size (only 94 Jamaican firms were included in the 2006 World Bank Investment Climate Survey).

3.45   **In general, cost of financing is perceived as a business constraint worldwide. When responses are ranked differently, however, crime becomes the Jamaica's biggest constraint.** In the world sample, the top three factors most often chosen as severe or major constraints are: macroeconomic stability, cost of financing, and tax rates. This is also true for Jamaica. However, the question is biased because the businesses can easily understand these three factors' direct impact on profits. Another way to analyze the data is to compare the responses of Jamaican and world firms. Computing the ratio of firms finding a factor as a major or severe constraint in Jamaica relative to the world changes the initial conclusions: the first factor for Jamaica becomes crime, followed by the cost of electricity and inadequate workers' skills. These are the factors Jamaican firms complain about disproportionately compared to businesses in the rest of the world. Access to financing in this relative ranking is sixth and cost of financing is 10th.

3.46   **Jamaica's financial system is large and interconnected, with reasonably well-developed markets**.[51] Total assets amount to about 185 percent of GDP. All segments of an advanced financial system are present and closely interconnected via a handful of dominant conglomerates. Since the financial crisis of 1996, Jamaica has considerably strengthened its financial system oversight.

3.47   **In conclusion, access to financing and cost of financing do not seem to be major constraints in Jamaica. First, Jamaican firms show good indicators when compared to businesses in other economies.** Second, real interest rates are not high. Third, financial regulations have improved since the mid-1990s crisis. On the more intuitive side, Jamaica has been able to invest at a high level compared to other LAC countries, even after controlling for overestimations. If there is any financial constraint, it is not reflected in investment, and therefore its shadow price should be low. Although business opinion seems at odds with these stylized facts, the ratio of complaining firms in Jamaica to the rest of the world indicates that financing does not show up as an important concern in Jamaica's economy. For Jamaican business, the top three major constraints involve crime, cost of electricity, and workers' skills, according to this analysis.

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[51] See World Bank 2002 and 2006 IMF Staff report.

3.48   **It is still possible that some distortions in the financial markets affect the allocation of capital**. Access to finance ranks above cost of financing in Jamaica, while the opposite is true in general for the rest of the world and most of the LAC region. This might reflect problems for some firms in Jamaica, even if there is enough financing at the macroeconomic level. It might be a signal that there are some distortions in the allocation of credit among firms. Credit is also concentrated in a few sectors (see table 3.6). In 2008, tourism and distribution sectors accounted for more than 50 percent of the stock of loans to the private sector (excluding personal loans), a greater concentration than in 1995.[52]

Table 3.6: Distribution of Loans in Domestic Financial Sector

	1995		2008	
	Share	Share of sub-total	Share	Share of sub-total
Agriculture	5	6.5	1.5	3.1
Mining	0.7	0.9	0.3	0.6
Manufacturing	12.8	16.7	3.2	6.7
Construction	15	19.5	5.7	11.9
Financial Institutions	4.1	5.3	0.7	1.5
Transport, Storage and Comm.	9.2	12.0	4.3	9.0
Electricity, Gas and Water	0.5	0.7	1.2	2.5
Distribution	7.4	9.6	9.8	20.5
Tourism	8.4	10.9	14.5	30.3
Entertainment	0.6	0.8	0.2	0.4
Professional other services	13.1	17.1	6.4	13.4
Sub-Total	**76.8**	**100.0**	**47.8**	**100.0**
Personal	17.1		36.9	
Government Services	6.2		15.3	
Total	**100**		**100**	

Source: Bank of Jamaica

3.49   **It is also possible that public debt did not affect investment directly through traditional crowding out channel but caused a decline in Jamaica's productivity and growth.**[53] Presbitero (2010) argues that high debt burden reduced productivity in Jamaica. Two potential channels are less investment in public goods (government has fewer resources to spend)

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[52] In this period, personal loans and loans to government services category increased from 23.3 percent to 52.2 percent of the total. The increase in personal loans is consistent with trends in other countries in the 2000s.

[53] Using panel data estimations at aggregate levels, some empirical studies find a negative relationship between high public debt levels and growth. For example, Pattillo, Poirson, and Ricci (2004) show that high external debt stocks depress growth through capital accumulation and total factor productivity. Blavy (2006) repeats the panel estimations by Pattillo, Poirson, and Ricci (2004) including domestic debt, which is particularly relevant to Jamaica's experience. According to Blavy, doubling total public debt results in a 1.5 percentage point reduction in productivity growth. The channels through which high debt may distort resource allocation and hence hamper growth are increased uncertainty, higher financing costs, and fewer externalities from public investment. Corden (1989) and Serven (1997) provide discussion of the bias towards short-term projects as opposed to longer-term investment projects because of heightened uncertainty regarding debt service capability. Claessens et al. (1996) provides illustration of the underinvestment in activities with high up-front cost and only long-term effects, such as investment in education and health. Using an econometric methodology of threshold estimation and focusing on total public debt, Caner, Grennes, and Koehler-Geib (2010) estimate the point at which public debt starts to hinder growth in emerging markets. The estimated threshold is 64 percent of GDP, way below Jamaica's average debt to GDP ratios. According to their estimations, the high public debt levels could have reduced economic growth in Jamaica by an average of 1.3 percentage points a year, or a total of 18 percentage points over the past 13 years.

and higher taxes (governments need more resources to pay debt services). Public goods in general are complementary inputs for private physical capital—and therefore impact productivity directly (see section C.1). The effect of taxes on productivity is less direct. Raising taxes on all economic activities to pay high debt services would discourage investment on some projects, but everyone would be contributing to the economy at a similar rate—the gross-of-tax rate of return. If a country relies on tax incentives to promote some activities, however, the gross-of-tax rate of return would be lower in the favored activities, compared with the others that pay all taxes. As a result, capital in the favored activities will contribute less to the economy. In this sense, the distortions are not due to the high tax rates but to their heterogeneity. On the other hand, high taxes (for some) and small benefits for operating in the formal economy increase the incentives to become informal, which might explain Jamaica's high and growing informality. To the extent that it distorts the allocation of resources, informality might have a negative effect on productivity and growth.

E. Low Returns to Economic Activity: Low Social Returns

E.1. Human Capital Accumulation

3.50 **This section looks at human capital, with the objective of understanding to what extent it is scarce in Jamaica.** Showing a labor force with low levels of schooling or training is not enough to conclude that human capital is scarce; it is also necessary to observe high prices, or high returns to schooling, for this resource. It could be that private returns to schooling are low but social returns are high, implying that more education is needed.

Schooling

3.51 **Jamaica has a complex system of education and training institutions, which cater to the human resource needs of the country.** The educational system provides for early childhood education (age cohort 1 to 5 years), primary education (5 to 11 years), secondary education (11 to 18 years), and tertiary/post-secondary education (universities, colleges, institutes). Jamaica maintains a mix of secondary-level schools: traditional, technical, vocational/agricultural and all-age (grades 7 to 9), and junior high (grades 7 to 9). There are public and private secondary schools, with public institutions making up a vast majority of the enrollment. The technical and vocational schools accounted for approximately 8 percent of total enrolment in 2008, while traditional secondary schools accounted for 75 percent. The establishment of technical and vocational high schools was part of the" vocationalisation" process in the school system.

Figure 3.10: Years of Schooling in Jamaica and selected economies

Source: Barro and Lee

3.52 **From 1995 to 2008, Jamaica saw an increase in enrollment rates in both secondary- and tertiary-level education. However, schooling indicators are still below more developed countries.** Jamaica has universal primary education and both net and gross enrollment rates exceed 100 percent, although there has been some decline at the gross primary level since 2000. Secondary-level enrollment increased 12.5 percent from 222,900 students in 1995 to 250,800 in 2008. The gross secondary enrollment rate rose from 63.4 percent in 1998 to 93.4 percent in 2007. Importantly, the level and rate of enrolment at the tertiary level have risen significantly since the mid-1990s. Gross tertiary-level enrollment increased almost fourfold between 1998 and 2007. However, the literacy rate is still low at 82 percent, and gross enrollments are not high. This suggests that the labor force is not catching up through adult education. Compared to faster-growing Caribbean economies, such as Barbados and Trinidad and Tobago, Jamaica has fewer years of schooling and is not catching up (see figure 3.10). In addition, Jamaica's adult population has a low literacy rate compared to countries at a similar income level.

Table 3.7: Schooling Coverage: Jamaica and selected LAC countries

	GDP per capita, ppp	Enrollment Tertiary Education	Adult Literacy Rate	Enrollment Pre-primary	Net Enrollment Primary School	Net Enrollment Secondary School
Argentina	14,000	68.1	97.7	66.9	98.7	79.9
Brazil	10,080	30.0	90.0	69.1	92.8	76.7
Chile	13,250	52.1	98.6	55.8	94.4	85.3
Costa Rica	10,960	25.3	96.0	69.8	N/A	N/A
Dominican Republic	7,800	33.3	88.2	34.9	81.9	51.7
Panama	12,630	46.5	93.5	70.4	98.3	64.1
Uruguay	12,550	64.3	98.2	80.6	98.2	67.1
Average	**11,610**	**45.6**	**94.6**	**63.9**	**94.1**	**70.8**
Belize	5,940	2.6	N/A	40.2	95.0	64.4
Barbados	20,000	N/A	N/A	N/A	N/A	N/A
Dominica	8,300	N/A	N/A	77.1	82.8	85.6
Guyana	3,030	11.7	N/A	101.0	94.7	N/A
Jamaica	*7,370*	*19.3*	*85.9*	*93.3*	*88.7*	*77.7*
Trinidad and Tobago	24,240	11.6	98.7	86.0	89.0	69.6
St. Kitts and Nevis	15,490	N/A	N/A	125.1	87.7	84.8
St. Lucia	9,020	14.8	N/A	69.4	93.7	71.2
St. Vincent & the Grenadines	8,570	N/A	N/A	95.6	96.5	77.3
Average	**11,329**	**12.0**	**92.3**	**86.0**	**91.0**	**75.8**

Source: WDI. Notes: Schooling indicators, average 2002-2008

3.53 **Enrollment rates are low in tertiary education, although this is a common characteristic of all the English-speaking Caribbean countries**. Nonetheless, Jamaica has

been improving rapidly during recent years. Enrollment in tertiary education increased from 6.6 percent in 1991 to more than 19 percent in 2008 (see table 3.7). Returns to schooling, particularly for tertiary educated workers, are still high—showing that the demand is still high in part because a large proportion of the higher-educated workers migrate, mainly to Canada and the United States.

Table 3.8: Spending in Schooling: Jamaica and selected LAC countries

	Expenditure per student as % of GDP per capita			Public Spending in Education (% GDP)
	Primary	Secondary	Tertiary	
Argentina	11.7	17.4	12.4	4.4
Brazil	12.7	11.6	37.4	4.3
Chile	13.1	14.1	13.9	3.7
Costa Rica	16.6	20.0	43.2	4.9
Dominican Republic	7.3	4.8	N/A	2.0
Panama	10.0	13.3	29.5	4.1
Uruguay	7.4	8.6	18.1	2.8
Average	**11.3**	**12.8**	**25.8**	**3.7**
Belize	13.3	19.9		5.3
Barbados	23.0	27.9	46.3	7.1
Dominica	19.8	17.5	N/A	4.5
Guyana	17.2	19.9	38.9	7.3
Jamaica	*13.3*	*19.5*	*47.9*	*4.7*
Trinidad and Tobago	16.0	17.4	81.7	4.2
St. Kitts and Nevis	8.0	13.2	N/A	5.5
St. Lucia	14.8	17.7	N/A	5.8
St. Vincent & the Grenadines	23.2	21.0	N/A	9.3
Average	**16.5**	**19.3**	**53.7**	**6.0**

Source: WDI. Notes: Schooling indicators, average 2002-2008. For T&T spending in secondary and tertiary, 2001 values.

3.54 **Sizeable expenditures on education indicate inefficiency as the quality does not match with the level of spending**. For instance, expenditure per student in primary education relative to GDP per capita is low by Caribbean standards but high by Latin American norms (see table 3.8). The same is observed for the public spending in education as a share of the GDP, which is below the Caribbean average but above Latin American average. One reason for this: private school enrollment is much higher in Latin America. Among the Caribbean countries, public spending on education is higher in St. Lucia, St. Kitts and Nevis, and particularly in St. Vincent and the Grenadines.

Quality of Education

Table 3.9 : Jamaican Student Performance in the CXC
(General Proficiency, 1999-2008, % passes)

Year	English Language	Mathematics
1999	60.3	26.8
2000	50.7	37.4
2001	72.1	30.3
2002	54.0	36.0
2003	46.0	36.0
2004	41.0	23.0
2005	60.2	39.4
2006	50.1	35.7
2007	51.6	35.3
2008	54.4	43.0

Source: CXC

3.55 **Increased access to higher education has been accompanied by concerns about the quality of the education system.** The Caribbean Examination Council (CXC) general proficiency tests provide an indicator of "basic skills" development, and Jamaican students' performance has been weak in English and mathematics (see table 3.9). The average pass rate for English was marginally below 55 percent in 1999-2008, while the average pass rate for mathematics was below 35 percent. The pass rates for older secondary schools were consistently and significantly above those of upgraded and technical high schools. Results from Grade Six Achievement Test (GSAT) paint a similar picture. While girls have generally out-performed

boys in the sequence of tests, mean percentage scores were generally low. From 2003 to 2008, for example, the mean percentage scores for mathematics and language arts were generally below those for social studies, science and communications tasks (see Table 3.10). These results are reflected in the pass rates in exit examinations at the secondary level. The examination results suggest that persons leaving the school system for either the labor market or higher education have a low level of educational attainment.

Table 3.10: GSAT: Mean Scores, 2003-08

Subject	2003	2004	2005	2006	2007	2008
Mathematics	47.7	44.2	57.8	53.0	46.0	55.0
Language Arts	52.0	48.0	53.9	54.0	48.0	53.0
Social Studies	54.2	50.2	56.9	51.0	51.0	56.0
Science	47.6	46.1	51.6	55.0	52.0	58.3
Communication Tasks[1]	66.7	53.3	40.0	50.0	66.0	

Note: [1]Based on a rating of 12
Source: PIOJ: ESSJ, various issues

3.56 **Existing quality indicators put Jamaica below the Caribbean region average.** Jamaica does not participate in any international evaluation beyond the secondary regional examinations of the Caribbean Examination Council (CXC). Comparing the most recent results available on the World Bank EdStats database, Jamaica's students trail the simple regional average in math and English. In terms of primary education, there are no internationally comparable tests. Table 3.11 presents the scores for different primary-level tests taken in each of the Caribbean countries. However, the results are not comparable across countries.

Table 3.11: Acquisition of Cognitive Skills in Primary Education

Country	Name of the Exam	Grade level given	Year	Passing Rate in Math	Passing Rate in Language/ English
Belize	Belize National Selection Exam	8th	2001	35	22
Dominica[1]	Grade 2 National Assessment	2nd	2001	25.0	40.0
Dominican Republic	Pruebas Nacionales	8th	2001	40,9	71,1
Grenada	Minimum Competency Test	4th	2001	21	25,5
Guyana[2]	Secondary School Entrance Examination	6th	2001	43	36,4
Jamaica[2]	**Grade Six Achievement Test**	**6th**	**2000**	**49**	**58,1**
St. Kitts and Nevis	Test of Standards	6th	2001	29	62,3
St. Lucia[2]	Minimum Standards Examinations	4th	2000	26,2	36,8
St. Vincent/Grenadines	Common Entrance Examinations	6th	2001	75	75,9
Trinidad and Tobago	Secondary Entrance Assessment	6th	2001	68,3	63

Notes: 1/Students operating at their grade level
2/These are mean scores by subject which are marked out of 100 points.
Source: The World Bank

3.57 **Another way to analyze educational quality is to look at returns to schooling for United States immigrants who have studied in their home countries**. Using this concept, Bratsberg and Terrell (2002) find that Jamaica has an implicit quality similar to Trinidad and Tobago (see table 3.12). This puts Jamaica below the simple averages for South America and the world. Hanushek and Kim (1999) report a strong correlation between the implicit quality index obtained from Mincer equations for United States immigrants who have studied in their home countries and direct measures of school quality (standardized test). Therefore, the difference in returns to education can be interpreted as differences in educational quality. The World Bank

(2005) also suggests that quality is one of the most important issues among the Caribbean countries. It argues that educational outcomes have not been commensurate with high spending, suggesting efficiency problems.

Table 3.12: Returns to education for Caribbean Migrants in the United States
(average return to one additional year of schooling)

| Country | Rate of Return (%) | |
	1980 Census	1990 Census
Dominican Republic	1.22	2.10
Haiti	1.19	2.02
Jamaica	**2.46**	**3.64**
Trinidad and Tobago	2.7	3.75
Caribbean (av.)	2.1	2.9
Central America (av.)	2.2	3.0
South America (av.)	3.5	3.9
Europe (av.)	4.7	5.9
World (av.)	3.9	4.8

Source: Based on Bratsberg and Terrell (2002).

3.58   **Higher educational attainments could increase Jamaica's growth, although for many Caribbean countries, the historically high average educational expenditures in recent years might be a result of good economic performance**.[54] Francis and Iyare (2006), using cointegration and vector error-correction models, analyze Trinidad and Tobago, Jamaica, and Barbados. The results indicate that the causality, both in the short and long runs, goes from education to growth in Jamaica. This supports the argument that human capital has been scarce and the investment in education has paid off. For Trinidad and Tobago, it goes the other way—from GDP growth to expenditure on education, perhaps because growth has been related to the fortunes of the petroleum sector.

Returns to schooling

3.59   **Several studies have already shown that Jamaica's returns to schooling are high compared to other countries**. Bils and Klenow (2000), for instance, use a standard Mincer estimation to calculate the returns on years of schooling, based on data 1988 and 1989. They find that Jamaica has the highest returns to schooling among 52 countries (Jamaica was the only Caribbean country in the study). It has higher returns than countries with much worse schooling indicators, such as Guatemala, Honduras, or Cote d'Ivore.

3.60   **New research shows that Jamaica's returns to schooling are still very high.** Hausmann and Rodrik (2005) use data from 1998 to estimate the Mincer equation for several countries in Latin America (see table 3.13). Artana, Auguste, and Panadeirost (2010) replicate the study for this report, including Jamaica and Trinidad and Tobago (to have a regional benchmark). Returns to schooling in Jamaica were extremely high in 1988 and 1998. Compared to Trinidad and Tobago, the only other Caribbean country in the sample, Jamaica's returns to schooling were almost two times larger for each degree. Artana, Auguste, and Panadeirost (2010) find that the returns to schooling are particularly high at the upper educational levels. For primary and secondary education, Jamaica's returns are 37 percent higher than the Latin

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[54] Cross-country comparisons of years of schooling and economic growth find a high positive correlation. See Barro (1991), Benhabib and Spiegel (1994), Barro and Sala-i-Martin (1995) and Sala-i-Martin (1997). However, the causality is not obvious: schooling could drive growth or growth could drive schooling (by increasing the effective return to schooling). Bils and Klenow (2000) find that both effects are present, and the impact of schooling on growth explains less than one third of the empirical cross-country relationships found by Barro (1991) and others.

American average. For tertiary education, the returns are 63 percent higher. This suggests that scarcity is much more important at this level.

Table 3.13: Returns to Schooling

Country	Bils and Klenow (2000) based mainly on data 1988/1989 — One more year of schooling	Hausman and Rodrik (2005) based on data 1998 — One more year of schooling	Hausman and Rodrik (2005) based on data 1998 — Finishing primary school	Finishing secondary school	Finishing higher education
Argentina	0.107	0.091	0.422	0.789	1.127
Bolivia	0.073	0.113	0.781	1.283	1.425
Brazil	0.154	0.132	0.622	1.138	1.922
Chile	0.121	0.123	0.341	0.761	1.458
Colombia	0.145	0.119	0.449	0.908	1.668
Costa Rica	0.105	0.098	0.326	0.684	1.22
Dominican Rep.	0.078	0.068	0.281	0.377	0.896
Ecuador	0.098	0.135	0.681	1.31	1.833
El Salvador	0.096	0.105	0.557	1.027	1.482
Guatemala	0.142	0.136	0.841	1.347	1.991
Honduras	0.172	0.104	0.467	1.003	1.506
Mexico	0.141	0.126	0.709	1.225	1.732
Nicaragua	0.097	0.11	0.574	0.86	1.636
Panama	0.126	0.116	0.483	1.015	1.559
Peru	0.085	0.129	0.474	0.99	1.459
Paraguay	0.103	0.129	0.665	1.181	1.662
Uruguay	0.09	0.084	0.427	0.765	1.079
Venezuela	0.084	0.085	0.351	0.622	1.076
Latin America Average Caribbean	0.112	0.114	0.52	0.97	1.493
Jamaica (*)	**0.28**	**0.25**	**0.715**	**1.328**	**2.434**
Trinidad & Tobago (*)			0.178	0.607	1.503
Taiwan	N.A.	0.067	0.257	0.5	0.826
Thailand	0.091	0.192	0.915	1.827	2.361
United States	0.093	0.12	0.186	0.553	0.98
Maximum		0.192	0.915	1.827	2.361
Minimum		0.067	0.186	0.377	0.826
Average					

Source: Bils and Klenow (2000) and Hausmann and Rodrik (2005) except for Trinidad and Tobago and Jamaica which are based on Artana, Auguste and Panadeirost (2010).

3.61   **Estimates also show that returns for secondary and tertiary education increased significantly in the 2000s**. The results for different time periods indicate that returns to schooling are very high and relatively constant in the 2000s. The most recent results, when compared with the earliest year included in the analysis (1985), show that returns for primary education fell, but returns for secondary and tertiary education increased significantly (see table 3.14 and table 3.15).

Table 3.14: Returns to Years of Schooling, 2004-08

Variable	Dependent Variable: Gross average income in past year for population older than 25 years old				
	2004	**2005**	**2006**	**2007**	**2008**
Years of Schooling	0.257[***]	0.261[***]	0.245[***]	0.255[***]	0.260[***]
Age	0.057[***]	0.036[***]	0.049[***]	0.021[*]	0.050[***]
Age Squared	-0.000[**]	-0.000	-0.000[**]	-0.000	-0.000[**]
Gender Dummy	-0.542[***]	-0.428[***]	-0.433[***]	-0.388[***]	-0.521[***]
Constant	5.139[***]	5.659[***]	5.690[***]	6.100[***]	5.268[***]
N	3611	3181	3467	3101	3758
r^2	0.199	0.223	0.227	0.202	0.170

Source: Artana, Auguste and Panadeirost (2010)

	1985	1990	2004	2005	2006	2007	2008	2009
Primary	0.869***	0.89***	0.715***	0.877***	0.604***	0.925***	0.843***	0.758***
Secondary	1.354***	1.491***	1.328***	1.429***	1.517***	1.421***	1.686***	1.806***
Tertiary	1.728***	2.014***	2.434***	2.154***	2.037***	2.098***	2.2***	2.216***
Age	0.024***	0.039***	0.047**	0.019	0.024	0.001	0.056**	0.013
Age Squared	0.000***	-0.001***	0.000**	0.000	0.000	0.000	-0.001**	0.000
Constant	5.348***	5.698***	7.688***	8.404***	8.46***	8.924***	7.872***	8.417***
N	5577	4741	2937	2584	2858	2480	2570	2981
r²	0.183	0.195	0.214	0.223	0.236	0.224	0.215	0.2

Source: Artana, Auguste and Panadeirost (2010)

Emigration and Human Capital

3.62   **Migration of skilled people has been a significant problem for Jamaica and the Caribbean Region**. Human capital is one of the key ingredients emphasized in almost every policy prescription for economic growth and poverty reduction in developing countries. The presence of a skilled and adaptive labor force that is integrated with the global economy and is able to innovate continuously is crucial for sustained growth. In this context, international migration of highly skilled (or highly educated) people[55] has important implications for economic performance for a variety of complex reasons (See Bhagwati and Hanson, 2009 for a recent compilation of the main issues.). Chapter 4 of this report presents a detailed discussion of migration trends for Jamaica. The analysis indicates that migration rates are very high for Jamaicans, especially for skilled people surpassing regional averages. For instance, over 85 percent of people who have tertiary education and who were born in Jamaica are currently living in other countries. In general, it is believed that the people who migrate are more able, more entrepreneurial or less risk averse; therefore, the country can be losing very important assets for productivity, innovation and entrepreneurship.

3.63   **Migration is rarely the root problem but a symptom of myriad other policy failures**. High migration rates for educated workers create a puzzle: high returns to education suggest human capital is scarce but Jamaica has difficulty retaining highly educated workers. The current knowledge on causes and impacts of skilled migration indicates that it is rarely the root problem of economic underperformance but a symptom of other policy failures in education, public finance, labor and financial markets. Thus, it is mostly unproductive and sometimes dangerous to design policies targeted towards mitigating skilled migration without properly addressing other distortions in the underlying economic structure (see chapter 4). Jamaica is no exception to this.

Conclusions

3.64   **The available evidence shows that Jamaica has a low level of human capital, with poor quality of education and insufficient training of its labor force, despite the country's efforts**. On the other hand, there is evidence that the factor is scarce because private returns to schooling and private returns to training are extremely high, and they have not declined in recent

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[55] The distinction between the expressions "highly skilled" and "highly educated" is quite important as the income levels of obviously highly skilled but not so highly educated professional athletes would illustrate. However, it is hard to make the distinction in real country level data. Thus, in this report, the expressions "highly skilled" and "highly educated" are used interchangeably where they refer to people with some level of university education.

years. Given the strong wage signal, the market response has included an increase in enrollment in tertiary education. However, it has not been enough to depress returns. One potential answer is the quality of education at early age. Poor quality in the early stages of formal education might be a constraint in the later educational progress of the students and also in training programs. The rate of return on training matches the rate of return of high levels of education, suggesting that workers have a very profitable option for improving their skill levels.

3.65   **The human capital problems have long been recognized in Jamaica.** Several policies have been implemented, and more needs to be done. Government programs to tackle the deficiency on human capital have been biased to expanding post-secondary education and training institutions, while it seems that the constraint may be more on the early stages. The challenge for Jamaica is raising the overall quality of its human capital, starting from the early childhood. Another challenge is retaining qualified workers because the brain drain process has not stopped; on the contrary, the migration rate of qualified workers has increased. High wages for educated workers in the United States and Canada have motivated the migration, but Jamaica has more migration than other countries in the Caribbean region. Some other local problems may have a role, with crime likely the most important one.

E.2. Infrastructure

3.66   **The availability, reliability, and user cost of infrastructure and the provision of utility services is crucial for development because they are key inputs in the production of goods and services**. The World Bank studies in 2003 and 2005 undertook a comprehensive review of Jamaica's infrastructure. The results suggest that infrastructure in general would not be one of the main binding constraints on growth today, although more needs to be done in certain areas such as rural roads and water and sanitation services (see annex 2 for a detailed discussion). Nonetheless, there is some evidence that poor infrastructure might have limited development in the past.

3.67   **Fiscal constraints might have curtailed the provision of infrastructure services; however, this has been partly offset with more private sector participation**. Moreover, Jamaica's infrastructure is in better condition than many other LAC countries. For instance:

- Roads: In the international comparison, Jamaica has a high road density, along with high access to paved roads. However, most roads, particularly in rural areas, are in poor condition. Nevertheless, the quality of the roads is above the Latin American average— and even above economies that have performed much better, such as Dominican Republic or Costa Rica.

- Ports: Seaport activity in Jamaica is well developed. Jamaica has one of the highest levels of port activity per inhabitant in the region—four times Dominican Republic, two times Panama, and one third higher than Trinidad and Tobago. In 2009, Kingston Port was ranked 4th among Latin American ports for volume (Perfiles Marítimos, ECLAC). Furthermore, Jamaica's port infrastructure quality is ranked 28th out of 133 countries, according to 2008/2009 World Economic Forum survey.

- Airports: According to a World Economic Forum survey, Jamaica's airport service quality is ranked as the best among Latin American countries.

- Electricity: Coverage is high but there are issues with transmission losses and unreliability. Compared to Latin America, electricity prices are high. While efficiency gains may be possible, Jamaica's dependence on imported oil renders some of the higher costs inevitable.[56]

- Water and sanitation: In 2000, almost 20 percent of Jamaica's population did not have access to water services, putting the country behind the Latin American average of 15 percent. There is need for new investments.

3.68 **In conclusion, although more can be done, the infrastructure does not seem to be a major binding constrain.** Such countries as the Dominican Republic, Costa Rica, Brazil, and Argentina have performed better in terms of economic growth with worse infrastructure indicators.

E.3 Incomplete Linkages to the External Sector

3.69 **For a small open economy like Jamaica, the export sector can play an important role in its development possibilities**. Jamaica's exports are heavily based on raw materials on the traded goods side and tourism on the services side. The importance of services exports and tourism in particular has grown over time. Services accounts for around 55 percent of total exports; among services, tourism is most important, representing 72 percent of total commercial services exported and 42 percent of total exports. An in-depth analysis of Jamaican export performance can be found in the Section C of chapter 7. This section presents main highlight of the export performance from the perspective of identifying key growth obstacles.

Services

3.70 **Jamaica has been underperforming the world economy in the four main subsectors of commercial services: consequently, the country has lost market share**. Although travel services had a strong recovery in the early 1980s, Jamaica has been losing market share constantly since 1983. The business model has been based on large all-inclusive international hotel chains, located in protected areas, without much interaction with the rest of the economy. Compared to fellow English-speaking Caribbean countries, Jamaica has been gaining share in terms of total current U.S. dollars spent in travel services, but not compared to the Dominican Republic, a country that follows a similar all-inclusive model. Financial services suffered the worst loss of market share in the 1970s and early 1980s—and it never recovered. The boom in the 1990s in services related to communications led to a gain in market share, but this gain has been gradually eroded in the 2000s. Overall, Jamaica's export market share in services declined to less than 0.08 percent of the world exports in 2008.

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[56] One of the main issues to be addressed is energy theft, which has reached an unacceptable level and has negatively affected the financial performance of the sector's operators.

Merchandise Exports

3.71   **Jamaica's global market share in goods exports has been falling since 1980, while the average share for Latin America has increased**. In part, Jamaica's poor performance in merchandise exports can be explained by the erosion of trade preferences.[57] Jessen and Vignoles (2005) estimate that almost 55 percent of Jamaica's merchandise exports (in value terms) enjoyed some form of preferential treatment in 2004—plus another 37 percent received most favored nation (MFN) duty-free treatment. But Jamaican main export products—sugar, bananas, and textiles—suffered from the erosion of trade preferences. Bananas, for instance, were affected when EU introduced a single-market regime for this product in 1994. The apparel industry suffered first when the North American Free Trade Agreement (NAFTA) started in 1994 and later in the 2000s with the U.S.-Central American Free Trade Agreement (CAFTA).

3.72   **The diversification of the Jamaican exports is low, even by Caribbean standards**. Jamaican exports have become increasingly concentrated over time, both in terms of products and markets. By far, the United States is Jamaica's most important export destination. The US, UK, Canada, and the Netherlands continue to account for the large majority of Jamaica's merchandise exports—68 percent in 2008. Trinidad and Tobago, which has an energy sector accounting for 50 percent of its GDP has a better diversification index than Jamaica. However, it is also true that countries comparable to Jamaica—such as the Dominican Republic with a successful tourism development—are also showing some problems with diversity and faltering goods exports. Merchandise exports are largely mining products. Jamaica continues to rely heavily on natural resources for its export earnings, rendering itself vulnerable to swings in global prices and demand. The Open Forest analysis in chapter 7 shows that the current Jamaican merchandise exports pattern does not give the country many opportunities for further diversification. In spite of this, the country has in recent years added new types of exports: 315 new products with overseas sales of more than US$100,000 a year between 2004 and 2008, almost the double the number of new products for Guyana (157) or Costa Rica (159) and similar to Barbados (348). However, Jamaica's new products have not been very significant in terms of total exports. As of 2008, three products made up 75 percent of Jamaican merchandise exports, up from 60 percent in 2004.

3.73   **Export Free Zones (EFZ) continue to be the main policy instrument for promoting exports, although their success has not been obvious**.[58] EFZ can be economically rationalized as temporary policies to address market and government failures (a second best), such as the lack

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[57] Jamaica participates in four main preferential schemes: Caribbean Basin Initiative (CBI), with duty-free access to the US market for a specified list of products; Commonwealth Caribbean countries (CARIBCAN), with duty-free access to the Canadian market for most products, except for textiles and apparel, that satisfy rules of origin requirements; Generalized System of Preferences (GSP), with Jamaican products receiving benefits in Australia, Austria, Canada, the Czech Republic, the European Union, Japan, New Zealand, Poland, the Slovak Republic, and Switzerland; and the African, Caribbean and Pacific (ACP) group, with benefits for bananas, sugar, and rum sold in the European Union. These preferential trading agreements have been replaced by Economic Partnership Agreements, free trade areas that will enter fully into force in 2020. Trade liberalization is considered a major economic concern over the next years because many products—mainly from the agricultural sector—are losing preferential market access.

[58] Changes to this legislation in 1996 permitted publicly managed free zones, free zones under the control of private sector development and management, and single-entity free zones (SEFZ) outside the EFZ (that is, individual companies designated as free zones).

of infrastructure and crime. However promoting only firms that export most of their production discriminates in favor of footloose "successful" investment (Rodríguez-Clare, 2004). Panadeiros and Benfield (2010) conclude that Jamaica's Free Zone regime has at the macro level facilitated foreign and local investment in traditional as well as in new areas of business, and it has provided employment. But Panadeiros and Benfield criticize the policy for failing to contribute to foreign exchange earnings and promote non-traditional exports. Some of the firms under the EFZ show low value added and weak production linkages with local firms, partly explaining the Jamaican economy's investment-growth puzzle.

Conclusions

3.74 **Like other countries in the region, Jamaica does not have abundant export opportunities**. Earlier advantages, based on preferential treatment, generated distortions that later proved to be costly—for example, the garment industry. In other products, such as sugar and bananas, the country has lost competitiveness. The country has not been dynamic enough to find new products to overcome these adverse shocks, and exports have lost diversification despite the new export products of the 2000s. Given that trade is the growth driver in a small open economy, the poor performance in Jamaica's most competitive sectors is a challenge.

E.4. Adoption of New Technologies

3.75 **Low productivity growth can be associated with deficiencies in the availability or adoption of new technologies and innovative processes**. The innovative environment of any country comprises several dimensions that contribute to the introduction, development, dissemination, and use of innovations. They include: (i) the regulatory and legal framework to facilitate and promote R&D activities and technology transfer, including protection of intellectual property rights; (ii) the public and private expenditure on R&D; (iii) the ICT infrastructure; (iv) the education and training of the workforce; (v) the interactions among the universities, R&D institutes, and the business sector; and (vi) the relevance of trade and FDI in the economy.

3.76 **Even though Jamaica's first science and technology (S&T) policy was promulgated in 1960, a strong commitment to implement different mechanisms for improving innovation has been seen only in recent years**. The present policy was launched in 2000, and the initiatives to boost innovation have included increasing R&D expenditures; the establishment and capitalization of two funds to support S&T activities (the National Energy Fund and the Universal Service Fund); and the expansion of the ICT infrastructure and users. Several public entities are involved in R&D and S&T activities—such as the National Commission on Science and Technology (NCST), which is in charge of national S&T coordination and management, and the Scientific Research Council (SRC) and the R&D departments of some ministries. R&D also occurs within the main tertiary institutions, such as the University of the West Indies, the University of Technology, Northern Caribbean University, and the College of Agriculture, Science and Education.

Table 3.16: Intellectual Property and R&D Indicators

	Intellectual Property Protection		Patents		Company spending on R&D	
	Rank	Score	Resident patent filings per GDP	Utilities patents per million population	Rank	Score
Barbados	28	4,9		0	67	3
Dominican Republic	79	3,2		0,2	105	2,6
Jamaica	**69**	**3,5**	**1,3**	**1,5**	**77**	**2,9**
Trinidad and Tobago	80	3,2	55	0,8	98	2,7
Guyana	123	2,4		0	86	2,8
Honduras	90	3,1	0	0	109	2,6
El Salvador	2,9	96		0	116	2,5
Australia	12	5,8	4	61,5	20	4,2
New Zealand	7	6	17,7	25	31	3,8
Singapore	1	6,2	3,2	88,7	8	5,1
United States	19	5,4	18,6	250,9	5	5,6
World		3,8				3,3

Source: The Global Competitiveness Report 2009-2010 and WIPO 2009.

Note: (1) scores from 1 (very weak) to 7 (very strong). (2) scores from 1 (do not spend on R&D) to 7 (spend heavily on R&D).

3.77 **Although there are good intentions to promote innovation, intellectual property rights in Jamaica are lagging international norms.** For instance, patent duration is 14 years, compared to 20 years in strong systems. The Global Competitiveness Report 2009-2010 rated Jamaican intellectual property rights below world average. Jamaica was ranked 69th of 133 countries, which was low but above most countries in the Caribbean region (see Table 3.16). Jamaica has not signed the Patent Cooperation Treaty—an international treaty administered by the World Intellectual Property Organization that facilitates simultaneous patent protection in a large number of countries by filing a single international patent application.

3.78 **A similar pattern is observed for R&D expenditures, a crucial element of any country's innovation system**. Available data shows that Jamaica's R&D expenditures are 0.3 percent of GDP, about half the LAC region average.[59] Although Jamaica's R&D expenditures exceed some countries in the region, but some fast-growing countries elsewhere in the world surpassed Jamaica by four to eight times (see Table 3.17). The bulk of Jamaican R&D expenditures are attributed to the government because few firms are investing in research. Private sector expenditures on R&D are significant in many other countries. In addition, there seems to be a gap between R&D and inventions in Jamaica, especially in meeting the needs of the local private sector. For instance, Jamaica ranks 60th among 133 countries in collaborative R&D efforts between business and universities (WEF 2099-2010).

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[59] Kerry (2008). Public R&D expenditures were only 0.03 percent of GDP before launching the present S&T policy.

Table 3.17: Expenditure on R&D (% of GDP)

	Last available data
Guatemala	0,05
Honduras	0,04
Jamaica	**0,3**
Trinidad and Tobago	0,1
Australia	2,17
New Zealand	1,26
Singapore	2,61
United States	2,67
East Asia & Pacific	1,49
Latin America & Caribbean	0,66
Middle income	0,96
OECD	2,5
World	2,21

Source: WDI and Kelly (2008)

3.79 **Although innovative activity is an important factor for productivity, absorbing technology available elsewhere is the usual channel for expanding technological frontiers in a small economy like Jamaica**. High integration to international trade flows and high levels of FDI increase a country's access to new technology, and Jamaica does indeed maintain the level of external linkages that would be expected for an economy of its size. However, both trade and FDI are highly concentrated in Jamaica, with more than 70 percent in a few sectors, mainly tourism, mining and ICT. Most likely, there are large differences across sectors and firms in the need and ability to adopt new technologies. According to The Global Competitiveness Report 2009-2010, Jamaica's private sector perceives a relatively high access to the latest technologies, but the local absorptive capacity of innovations is considered poor (see table 3.18). The combination of two factors could explain this result: heavy FDI concentration and poor capacity to absorb technology.

3.80 **Survey evidence supports the hypothesis that a lot of Jamaican firms lack the capacity to absorb new technologies.**[60] The PSDP 2008 survey found that only 50 percent of responding firms considered technology/innovation/creativity to be a major strength in their business. A similar fraction used any form of ICT to conduct their everyday business activities. Considering the globally recognized potential of online business, it is disappointing that less than 6 percent of respondents sold their goods and services via this electronic medium.

Table 3.18: Indicators of Availability and Adoption of Modern Technologies

	Availability of latest technology		FDI and technology transfer		Firm level technology adoption		Capacity for innovation	
	Rank	Score	Rank	Score	Rank	Score	Rank	Score
Barbados	29	5,8	42	5,1	41	5,3	77	2,8
Dominican Republic	68	4,8	36	5,1	68	4,8	90	2,7
Jamaica	**46**	**5,3**	**74**	**4,7**	**69**	**4,8**	**103**	**2,6**
Trinidad and Tobago	62	4,9	34	5,1	78	4,6	131	2,2
Guyana	108	4	110	4,1	114	4	99	2,6
Honduras	92	4,3	55	5	91	4,4	93	2,6
El Salvador	78	4,6	68	4,8	79	4,6	110	2,5
Australia	21	6	11	5,4	16	5,9	26	4
New Zealand	27	5,9	67	4,9	18	5,8	24	4,1
Singapore	14	6,3	2	6,2	13	6	18	4,4
United States	5	6,6	32	5,1	5	6,2	6	5,5
World		4,9		4,7		4,8		3,3

Source: The Global Competitive Report 2009-2010.
Note: the scores range from 1 (worst state) to 7 (best state), and 133 countries are ranked.

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[60] PSDP 2008 covering large scale cross-sectional micro, small and medium enterprises at national level (1,931 respondents).

3.81   **Technology absorption seems better in modern segments of the Jamaican economy**. A survey of small production companies in the music and entertainment sector—a vibrant sector in Jamaica—reveals that most firms had invested in ICT in the previous year and most intended to maintain or increase the level of investment (ICT4D 2006). In addition, more than half of the respondents used the internet for promotion and about half claimed that ICT has helped their business performance in general.

3.82   **The country's insufficient capacity to absorb new technology and innovate in most sectors could be related to the scarcity of appropriate inputs.** Factors limiting absorption capacity could include poor educational attainments, low level of workforce training, limited availability of specialized services and professional manpower, and reluctance of entrepreneurs to address the challenges associated with the knowledge-based economy.[61] On the other hand, ICT infrastructure—another important input—does not seems to be an obstacle for productivity growth. In fact, quality education and training are among the most important factors in creating and driving the knowledge economy. Workers must have higher education levels and the ability to adapt, learn, and master new skills quickly and efficiently. Several indicators—HDI Index, literacy rate, and tertiary enrollment—suggest that Jamaica, like many countries in the Caribbean and Central America, lag far behind developed islands and fast-growing economies. Private enterprises in Jamaica have also noted the scarcity of local scientists and engineers. Jamaica ranks 117th of 133 countries in this indicator, according to The Global Competitive Report 2009-2010. This is a significant gap that needs to be addressed if Jamaica is to become a fast-growing economy. However, additional challenge for Jamaica is also to retain highly skilled workers.

3.83   **In the last decade, the ICT sector has been expanding in Jamaica and achieved a midway position in the world.** The ICT sector's expansion and modernization was part of a vertical promotion policy designed to shift Jamaica's economy away from natural resource-based primary products and toward knowledge-based and human-resource-intensive goods and services.[62] In accordance with this vision, the Jamaican government took steps toward the expansion of this industry, mainly through the privatization and liberalization of this sector in 1999. In addition, a number of tax incentives benefiting the ICT sector have been put in place, some of them included in the Export Free Zone Act. As a result, Jamaica has developed as one of the premiere destinations for business process outsourcing and contact centers for service providers. A.T. Kearney, a global management consultant, ranked Jamaica 23rd among the top 50 worldwide locations for the most common offshore functions. More interesting, it was the only English-speaking Caribbean location on the list. According to the same ranking, however, the skills and availability of workers represents the most important weakness in this activity, Jamaica ranks 48th in this category, better only than Ghana and Panama. A range of international benchmarking studies show that the development of Jamaica's ICT sector has achieved a midway position in the world. In 2007, for example, Jamaica ranked 43rd out of 69 countries in the e-Readiness ranking produced by the Economist Intelligence Unit (EIU), which provides an assessment of a country's status in terms of connectivity and its ICT environment. The World

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[61] The Jamaican government recognized this when declared, "The island's private sector is not only small, but also largely conservative in its approach to development, and shies away from taking risks in technological investments…" (NCST, 2005).

[62] See National Implementation Plan (NIP) 1996.

Economic Forum Network Readiness Index for 2009-2010 ranked Jamaica 66th of 133 countries in terms of the ICT environment, network readiness, and ICT usage.

3.84   **In sum, Jamaica's current innovation environment remains inadequate, an obstacle to the country becoming competitive and a fast-growing economy**. This largely reflects human capital deficiencies, concerning both the workforce and managerial capabilities. Brain drain could be one explanation. Another could be the government's development strategy based on promoting sectors that do not have major spillovers to the rest of the economy.

F.   LOW RETURNS TO ECONOMIC ACTIVITY: LOW APPROPRIABILITY

F.1. Quality of Governance

3.85   **Governance is defined broadly as the traditions and institutions by which authority in a country is exercised**. This includes the process by which governments are selected, monitored, and replaced; the capacity of the government to effectively formulate and implement sound policies; and the respect of citizens and the state for the institutions that govern economic and social interactions among them (Kauffman et al 2009). Based on the results of vast empirical research performed over the past decade, a growing consensus has emerged among both academics and policymakers that good governance provides the fundamental basis for economic development (Kauffman, 2005).

3.86   **Jamaica has been a stable democracy since its independence in 1962, and it has a relatively positive environment for investments and business operations.** Jamaica has relatively strong democratic institutions and traditions—high level of democratic participation, free media, freedom of expression, and political rights. Therefore, this dimension of governance has never been an obstacle for development. At present, it is reflected on the Jamaica's high score in the "voice and accountability" indicator by Kauffman et. al. (2009). The business environment did not support economic growth in the 1970s, when the country chose an inward-oriented development strategy that restricted foreign investments and increased state intervention in the economy. Counter-reforms implemented since the early 1980s transformed the country, and the business climate has become adequate for enhancing growth.[63]

3.87   **Despite the political and regulatory strengths, governance seems to be a binding constraint in Jamaica**. Indeed, Jamaica performs very poorly in many dimensions of governance, according to international rankings. Jamaica's most evident and severe problem is its violent environment, which erodes social stability and makes rule of law a critical area of concern (see Table 3.19). Crime has a negative effect on human capital because it creates incentives for migration, introduces inefficiencies into the economy, and diverts resources from investment to crime protection (see next section). In addition, considerable animosity exists between the police and average citizens, especially in inner-city areas, making this problem highly difficult to solve.

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[63] The regulatory quality indicator in Kauffman et al (2009) database captures perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private-sector development.

Table 3.19: Governance Indicators, 2008 (percentile rank)

Country	Voice	Political stability	Gov. Effectiveness	Reg. Quality	Rule of law	Corruption
Antigua and Barbuda	62.5	76.6	66.8	69.1	82.8	87.4
Aruba	78.8	97.6	86.7	76.3	79.4	87.4
Bahamas	87.0	73.2	83.4	79.7	87.1	90.8
Barbados	87.5	86.6	89.6	74.4	88.5	86.5
Belize	69.7	53.6	40.8	37.7	50.2	48.3
Cuba	3.4	45.9	36.5	3.4	21.5	56.0
Dominican Republic	52.4	48.8	42.2	45.9	33.0	31.9
French Guiana	58.2	47.4	75.8	76.3	67.9	75.8
Grenada	74.5	71.3	62.1	61.4	58.4	67.1
Guyana	53.8	26.3	49.3	31.9	27.8	37.2
Haiti	27.4	11.5	9.0	18.8	6.2	6.8
Jamaica	66.3	34.9	57.8	63.8	39.2	35.7
Martinique	63.5	70.3	75.8	76.3	79.4	75.8
Netherlands Antilles	63.5	91.9	75.8	76.3	79.4	87.4
Puerto Rico	91.3	63.6	72.0	80.7	69.9	71.0
St. Lucia	90.9	70.8	78.7	64.3	76.6	84.1
St. Vincent And The Grenadines	84.6	74.2	74.9	64.3	78.0	80.7
Suriname	63.0	51.2	55.5	25.6	44.5	55.6
Trinidad And Tobago	61.5	47.8	64.5	70.5	48.8	52.7
Virgin Islands (U.S.)	70.2	69.9	86.7	69.1	79.4	75.8
Regional Average	68.3	65.2	67.6	62.0	63.9	68.0
Sub-saharan Africa	32.6	33.5	26.3	28.9	28.6	30.8
Middle East & North Africa	23.7	37.3	46.7	46.3	49.4	48.3
South Asia	30.0	19.5	35.6	29.2	36.6	34.0
East Asia	49.9	59.4	46.5	42.1	52.9	45.1
OECD	90.6	81.9	88.7	91.2	90.2	90.2
Latin America	52.1	35.0	44.8	48.3	33.1	44.1
Eastern Europe & Baltics	63.3	56.1	61.3	69.2	58.5	59.1
Former Soviet Union	21.4	35.8	31.5	34.0	23.5	21.5

Source: Kauffman et al (2009).

3.88 **In addition to violence, Jamaica also performs poorly on its legal system.** Judicial operations, including court backlogs and alternative dispute resolution and sentencing, are areas where Jamaica performs poorly. For example, a typical major civil case takes up to five years before adjudication, although criminal cases go to trial much earlier. The backlog is especially serious within the Resident Magistrate Courts, which hear 85 percent of all cases. Regarding alternative dispute resolution, no system exists at the Supreme Court level to allow a judge to order civil disputes to be referred for resolution by a mutually acceptable third party.[64]

3.89 **Businessmen also perceive corruption to be particularly serious in Jamaica due to lack of transparency**. The prevailing paradigm for public-private dialogue is predominantly informal, with an alarmingly high amount of ministerial discretion in the provision of exemptions for taxes and customs. Informal dialogue led to rent-seeking behavior to the detriment of the wider economy. The scope for arbitrary favors has been a disincentive to new investment and to forming cohesive private-sector institutions (Panadeiros and Benfield, 2010). In a study where a lower rank signifies less corruption, Transparency International (2009) ranked Jamaica 99th among 180 countries in 2009. In a comparison of Caribbean countries, Kaufmann,

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[64] See Griffith 2001.

Kraay, and Mastruzzi (2008) put Jamaica 18th of 20 countries (where first is least corrupt) and showed that Jamaica's standing has slipped in recent years.

3.90   **Quality of public service provision—captured by "government effectiveness"—is also below the regional average.** Most Caribbean countries receive good marks on government effectiveness. Jamaica ranks better than the Dominican Republic, Belize, and Haiti and ties with Suriname—but all other countries have better rankings. One problem in Jamaica could be the lure of attractive working conditions and significantly higher wages in the private sector, which leads to the loss of capable civil servants. Consequently, economic and political development could be hindered by shortages of skilled government personnel at the higher management levels. In addition, Jamaican leaders frequently have bypassed the career civil service and ministries by creating statutory boards or corporations and appointing their supporters to high positions in these entities.

3.91   **In sum, democratic tradition and market-oriented reforms have not been enough to create a better environment for productivity growth in Jamaica**. Other dimensions of governance—mainly crime and corruption—detract from the country's growth potential. Most likely, an improvement in those aspects of governance would produce a large development dividend.

F.2. Crime

3.92   **Jamaica is one of the most crime prone places in the world**. At 27 per 100,000 population annually, intentional homicide rates are higher in the Caribbean than in any other part of the world.[65] With a murder rate of 60 persons per 100,000 inhabitants and an average of five murders a day, Jamaica has the region's worst record, and it is almost at the top among all countries in the world, ranking only a little better than Honduras (see Figure 3.11).

Figure 3.11: Murder Rates (per 100,000 population)

Source: UNOCD

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[65] Since most homicides come to the attention of the police, murder rates are generally considered the most reliable indicator of the violent crime situation in a country.

3.93   **Crime rates in Jamaica have been rising since the late 1980s**. This trend has been worrisome. After peaking during the politically driven violence of the 1980 election, murder rates dropped to pre-election levels by mid-1980s and remained relatively stable throughout the 1980s. However, crime rates increased steadily since then. Between 1988 and 2008, the homicide rate rose 3.5 times—from 17 to 60 per 100,000 inhabitants (see figure 3.12).

Figure 3.12: Evolution of Murder Rate in Jamaica (per 100,000 population)

Source: Jamaican Constabulary Force

3.94   **The empirical evidence shows that crime becomes difficult to stop once it is high. However, if it can be reduced, economic gains could be substantial**. A UNODC and World Bank (2007) study examines crime data from 61 countries, including Barbados, Jamaica, and Trinidad Tobago from the Caribbean region. Applying a multivariate regression analysis, the study finds that: (i) crime creates strong inertial effects, which means it may be difficult to reduce rates once they are high; (ii) crime-reduction efforts in the short-term are likely to have huge long-term gains; (iii) as countries develop, violent crime tends to decrease: (iv) income inequality is associated with violent crime, but the relationship does not hold after controlling for other variables: and (v) Caribbean countries show similar patterns to the world as a whole, with higher crime rates overall. Led by Jamaica, Caribbean homicide rates are 34 percent higher than countries with comparable per capita income, growth rates, inequality and past crime rates.

3.95   **Several factors heighten Caribbean countries' vulnerability to crime and violence— a primary candidate being drug trafficking.** The Dominican Republic, Haiti, Jamaica, and the Bahamas are all identified as "major" drug-transit countries in the U.S. government's most recent annual report on the international drug trade. Drug trafficking has an estimated street value that exceeds the value of the entire legal economy.[66]

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[66] According to UNOCD and World Bank (2007), the drug trade drives crime in a number of ways: through violence tied to trafficking, by normalizing illegal behavior, by diverting criminal justice resources from other activities, by provoking property crime related to addiction, by contributing to the widespread availability of firearms, and by undermining and corrupting societal institutions.

3.96   **The fact that Caribbean crime rates are above what purely economic variables would predict does not imply any causality: it may be the case that causality runs from violence to growth rates.** It is very likely that higher crime rates have decreased growth substantially in the region.[67] By this perspective, the Caribbean countries' economic performance is better than would be expected based on their crime rates alone.

3.97   **There are many channels through which crime may be impeding Jamaica's development.** Crime has diverted valuable resources from productive industries into security and health care expenditure. This problem seems to be more important in Jamaica than in most other countries. The Global Competitive Index 2009-2010 ranked Jamaica as 130th of 133 countries on the "business costs of crime and violence" indicator. The UNOCD and World Bank (2007) summarize the results of several studies on direct annual costs of crime in Jamaica. The overall estimate for the cost of preventing violence or reducing its consequences is approximately 5 percent of GDP. The main components are: Government spending on crime control (3.1 percent of GDP), private expenditure on security (1.3 percent of GDP), public health costs of treatments to victims or perpetrators (0.3 percent of GDP), private health costs on violence-related hospitalizations (0.1 percent of GDP), and direct production related losses due to mortality and morbidity of workers because of crime (0.2 percent of GDP). This figure does not take into account non-monetary costs like pain and suffering of victims and their families and the human welfare loss related to living in fear of being victimized.[68]

3.98   **The indirect effects of crime could even be larger than the direct ones**. Crime may adversely affect economic activities beyond the short-run costs of prevention measures. It may also constrain business expansion by reducing final demand and limit productive work hours because of the need to close firms early.[69] As a consequence of its effects on demand side and costs, crime also provides an incentive for firms to relocate outside the island. According to business opinions surveyed for World Bank (2003), 39 percent of firms responded that they were less likely to expand their business because of crime, and 37 percent reported that crime discourages investments that would improve productivity.

3.99   **Because Jamaica has a natural comparative advantage for the development of tourism, the effects of crime on this industry are of particular concern**. This has been party mitigated by the development of the so-called all-inclusive resorts, where tourists can enjoy beaches without leaving hotel facilities. Traditionally, Jamaica's promotion policy for the tourism sector has favored this business model. All-inclusive hotels, unlike the tourism industry worldwide, have little spillover effects to other areas of the local economy.

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[67] It is also possible that the negative correlation between growth and crime rates is due to a third factor which affects both variables.
[68] UNOCD and World Bank (2007) highlights a qualitative work carried out by C. Moser and J. Holland in 1997 ("Urban Poverty and Violence in Jamaica" in World Bank Latin America and Caribbean Studies: Viewpoints. Washington, D.C.). Moser and Holland note that residents of inner-city neighborhoods in Jamaica suffer from "area stigma." They are judged to be associated with criminals based on where they live, which makes it difficult for them to find employment.
[69] According to a business survey carried out as part of a background paper for World Bank (2003), 36 percent of firms opt to close before dark as protection against crime. This practice has high costs in the manufacturing sector, forcing it to operate at less than full capacity because second shifts cannot be scheduled.

3.100   **Like tourism, mining has also been capable of exploiting its competitive advantages in a violent environment.** The strategy for the mining sector has been "enclave development"—isolated, protected by private security forces, and highly promoted by tax incentives. Export Free Zones can be seen as another mechanism to address crime by providing physical protection to promoted firms.

3.101   **The high-crime environment could significantly reduce Jamaica's longer term growth.** Beyond short-run costs and isolated enclave industries, crime and violence can significantly hinder development in Jamaica. For instance, Jamaica has been facing one of the world's worst brain drains, and evidence suggests that crime and violence is the main reason behind migration of highly trained professionals and entrepreneurs.

3.102   **The UNOCD and World Bank study (2007) shows that long-term economic gains could be immense if Jamaica's crime rates were reduced.** The study uses cross-country panel data, which reflects the average relationship between crime and growth worldwide.[70] This approach provides a summary measure that in principle captures the ultimate long-run effects of crime through many channels. Based on research on the determinants of growth, the analysis involves regressing GDP per capita on homicide rates, controlling for a country's level of income inequality, the cost of investment, and average male and female education. The results point to very large potential gains for Jamaica from reducing violence. As an illustrative simulation, Jamaica could experience an increase of 5.4 percent annually in its per capita GDP growth rate if it could cut crime rates to the levels prevailing in Costa Rica. The result would entail a cumulative increase of income per person of 69 percent over 10 years.

3.103   **Even if the results overestimate the effects of crime on growth in highly violent countries, it seems clear that crime is a binding constraint impeding Jamaica's development**. This could be a case where investment tends to flow to sectors protected from the violent environment of the rest of the country, with low spillovers, resulting in misallocation even with undistorted markets. As Hausmann (2009) points out, "It is safe to infer that the few things that survive are those that are least intensive in the resource that is missing." It seems that peace is the scarcest resource for Jamaica's development.

F.3. Tax Pressures

3.104   **Jamaica's tax system is often considered as complex and cumbersome**. Taxes clearly affect the returns the private investor can appropriate, so excessive burdens can be a binding constraint to growth. Jamaica broadly reformed its tax system in the 1980s, adopting a basic structure with some desirable features. Nonetheless, it is still complex and cumbersome because the tax reform did not dismantle many of the pre-existent preferential treatments. Over the years, the tax structure has even become more ad hoc. The most recent global assessment indicates that Jamaica has one of the worst tax systems in the world, ranking 170th of 178 countries in the ease of paying taxes and number of required annual tax payments, 144th in the time required to pay taxes, and 128th in the total tax rate. Tax compliance is estimated to take an average of 414 hours

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[70] UNOCD and World Bank (2007) summarizes the results of a regression carried out in "Crime, Violence and Economic Development in Brazil: Elements for Effective Public Policy", Report No. 36525, World Bank 2006.

a year in Jamaica, compared to only 76 hours in Ireland and 71 hours in St. Lucia. Among the topics that form the index, paying taxes has consistently received the lowest rank (see table 3.20 and also chapter 7). Jamaica maintains a very high statutory tax rate and a very inefficient system of payment, making compliance costly.

Table 3.20: Paying Taxes in Jamaica

Indicator	Jamaica	Latin America & Caribbean	OECD Average
Payments (number per year)	72	33.2	14.2
Time (hours per year)	414	384.7	199.3
Profit tax (%)	28.6	20.9	16.8
Labor tax and contributions (%)	13.0	14.7	23.3
Other taxes (%)	8.5	12.4	3
Total tax rate (% profit)	51.3	48	43

Source: Doing Business 2011

3.105 **Average tax pressures are not excessive, but the problem is the large heterogeneity at firm level due to the different tax treatments that companies receive in Jamaica.** The current system is distortionary and discriminates against small firms. (Tax incentives' distortions are discussed in Section C.2 of this chapter.)

F.4. Externalities, Spillovers, and Coordination Failures

3.106 **An "enclave model" without major spillovers to the rest of the economy emerged from a growth strategy based on promotion policies aimed at market or government failures.** One of the main examples is Export Free Zones (EFZs). Export promotion through EFZs can be economically rationalized as incentives designed to solve some market failures, such as coordination failures. Another possibility is EFZs could be a facilitating channel for cluster development, considered a source of positive externalities.[71] In many developing countries, however, EFZs look more like a response to government failures. If the country is not attractive to investment because of insufficient infrastructure, high tax burdens, policy instability, or other government failures, geographically focused EFZs can provide specific public goods in a more efficient manner and isolate firms from other appropriability risks. In this way, EFZs can play an important role in attracting FDI by offsetting some aspects of an adverse investment climate through world-class facilities and best-practice policies. In Jamaica's case, crime and inefficient bureaucracy appear to be the most problematic factors for business growth. Failure to resolve these obstacles is partly addressed by creating EFZ facilities.[72]

3.107 **The potential benefits of EFZs should be compared with their costs or distortions**. Rodriguez-Clare (2004), for instance, points that EFZs could limit linkages between the firms located in the zones and the rest of the economy, making them a poor development policy. Non-exporting firms are discriminated against, which might generate costs for economic growth. In EFZ implementation, some sectors are often favored, and this approach generates the debate of selection and "picking the looser" costs. Most of the economic arguments justifying EFZs call for temporary subsidies (as a second best solution), tied to some performance measure, but in

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[71] Clustered firms improve productivity through technology or knowledge spillovers.
[72] Obviously, the most appropriate approach should be to eliminate those obstacles that provoke government failure.

practice this is often not the case Lobbying from current EFZ firms can affect the overall allocation of resources.

3.108 **In Jamaica, an "enclave model'' implemented through EFZs, tourism and mining industries did not generate the most needed spillovers**. A recent study points that EFZ firms show low value added and weak production linkages with local firms (Panadeiros and Benfield, 2010). The same study points out that the lack of spillovers is also observed in tourism. The dominant model—all-inclusive resorts promoted by generous tax incentives—can be regarded as a solution to promoting tourism in a violent environment (a government failure), but it only favors large-scale and isolated hotels, without linkages to the rest of the economy. The poor quality of local goods has been highlighted as the main justification for giving hotels the duty concessions, a policy that should be thought of as temporary and second best. First best would be to raise competitiveness and quality of the local production.

3.109 **New approaches have also emerged to encourage more spillovers and solve externalities and coordination failures**. One example is the Master Plan for Sustainable Tourism Development, formulated in 2003. It seeks to differentiate Jamaica from similar places in the region. It emphasizes stronger linkages between tourism and other productive sectors, greater community involvement, showcasing Jamaica's culture and heritage, and event-led promotions.[73] Some of the policies implemented in this framework are: (i) the Jamaica Tourist Board (JTB), the national agency in charge of tourism sector, has begun to make effective use of the web as a marketing tool, (ii) coordination with training and education policies to provide the necessary human capital to the tourist sector,[74] and (iii) minimizing leakages by creating linkages between the tourism industry and other sectors (food, drinks, linens, towels, etc.). The Jamaica Trade and Investment (JamPro), the national agency for investment and export promotion, has developed a strategic relationship with hotel chains to establish a reliable supply chain and create access to the hotel market for Jamaican food and beverages suppliers.[75] Similar initiatives were carried out through the Private Sector Development Programme and the Jamaica Cluster Competitiveness.

3.110 **In sum, Jamaican tourism has to move away from traditional promotion policies and toward modern approaches that would facilitate stronger spillover effects and linkages to the rest of the economy**. Enclave industry resulting from traditional promotion policies can be justified as a second best solution to address market and government failures, especially crime. However, such policies need to be temporary because it is important to remove the underlying binding constraints that justify this approach. Even though, in the last years Jamaican industrial policy is indeed moving towards a more modern conceptual design, a preliminary assessment suggests that the old schemes seem politically difficult to be dismantled.

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[73] In fact, the Jamaican tourism product is being further stratified to develop niche markets along the lines of eco, heritage, faith-based, community, sports, wellness, and rural tourism.

[74] Two programs serve as examples: First, efforts to foster closer linkages between the government and educational facilities, such as Human Employment and Resource Training (HEART), University of Technology, University of the West Indies, and Northern Caribbean University; and, second, the establishment of a School of Hospitality Training to solve the need for local mid- and upper- management staff.

[75] JamPro provides marketing information to help exporters promote their products and locate and penetrate foreign markets. It has opened offices in several cities, including New York and London, intending to facilitate trade and to represent Jamaican companies at trade fairs.

F.5. Information Externalities and Self-discovery?

3.111 **Discovering what a country is good at producing entails externalities because the process requires investment of resources and returns cannot be fully appropriated by potential entrepreneurs (see Hausmann and Rodrik 2002).** This argument parallels the externalities associated with innovation. If entrepreneurs cannot appropriate all the benefits associated with new technology, there will be suboptimal innovation in equilibrium. The coordination problem associated with producing new goods and services may be costly to solve. In addition, it can require investments in sector-specific public goods and a different set of non-tradable inputs.

3.112 **The nature of the market failure is not divorced of the characteristics of the economy and self-discovery is a much more difficult problem to solve for small island countries**. Deficiencies in human capital, poor institutions, insufficient external linkages, financial constraints, and other typical obstacles to growth can make the self-discovery process or the innovation process more difficult. Research often cites size and isolation as serious limitations for small economies and justification for production patterns specializing in a few good or services. At the same time, however, specialized production patterns or export baskets can limit the opportunities to develop new products, perhaps because of learning and externalities (Hausmann and Klinger, 2006; Jovanovic and Nyarko, 1996). When global market conditions call for a change in production patterns, the local economy might not be ready to change fast enough. However, other small islands such as Mauritius have done better. If Jamaica lags those countries, it should be because of other factors restricting growth.

3.113 **In sum, information externalities preventing self-discovery seem no worse in Jamaica than in the rest of the Caribbean region.** However, reducing the problem is not likely to be easy because little can be done to change Jamaica's small size and island characteristics.

G. CONCLUSIONS AND POLICY RECOMMENDATIONS

3.114 **This chapter shows that Jamaica's disappointing economic performance is a case of low productivity**. The Jamaican economy has often been described as a puzzle of high investment and low growth. However, the analysis makes Jamaica less puzzling by taking into account the economy-wide spread low productivity. Main causes of for low productivity are: (i) deficiencies in human capital and entrepreneurship due *inter alia* to quality deficiencies in education and training and high migration rates, (ii) a high-crime environment, which might be a reflection of past government failures but which presents a clear constraint to investment and retaining skilled workers and entrepreneurs: and (iii) the combination of distortive tax incentives, and the promotion of "enclave" development with little spillovers to the rest of the economy.

3.115 **Crime is the most evident and severe problem in Jamaica**. It might be considered as endogenous: it is an equilibrium outcome, probably as a result of past policies. Once crime is established, it is difficult to overcome, and it severely limits future growth, leading to a vicious circle as low growth further increases crime and higher crime rates further reduces growth. Crime erodes social stability and makes rule of law a critical area of concern. It has a negative

effect on human capital, creating incentives for migration. It constrains business expansion and diverts resources from productive activities to crime protection.

3.116 **Because of crime and other structural conditions, investment in Jamaica tends to flow into isolated activities**. All-inclusive resorts, mining, and EFZs are the best examples of this "enclave" development model with its low spillovers. This pattern is fostered by promotional policies. Jamaican fiscal incentives can be justified as short-term policies to address market and government failures. However they do not solve root problems. If the binding constraints that justify this approach are not removed at some point, conditions for long-term growth are not established.

3.117 **In Jamaica, the system of fiscal incentives has become very complex and distortive**. Some sectors are highly taxed, other not taxed at all, making profitable even projects with negative rates of return. Because tax incentives can be granted on discretionary basis, this regime generates complex distortions, discriminates against new and innovative activities, limits entrepreneurship, and facilitates corruption.

3.118 **Productivity is further hindered by the local economy's slow adoption of new technologies**. The poor absorption capacity is partly a reflection of human capital deficiencies in both the workforce and management, but it is also a side-effect of the heavily promoted "enclave" model.

3.119 **Jamaica's high public debt does not seem a significant obstacle to access to financing but it could be hurting productivity**. Private investment and credit to private sector are not low compared to countries at similar per capita income levels. Current credit conditions are not bad. However, public debt requires maintaining an unusually high primary surplus. The sins of the past are present in the form of high government debt service, constraining public provision of key inputs. The complex tax system does not help. In this environment, fiscal policy needs to be very efficient. However, this seems far from the case. Red tape, a complex budgetary process, and lack of transparency of fiscal accounts are hindering efficient public expenditures.

3.120 **Given the causes of Jamaica's low growth, policy recommendations likely to have large payoffs are: reducing crime, investing more in education and training (if the country can retain those workers), removing pervasive incentives, and moving out from an "enclave" development model**. Jamaica has to do this with limited fiscal resources. The recent debt swap will give the country more degrees of freedom, but public resources will not be abundant. The country, therefore, has to think of policies that can relax its constraints to growth with minimum spending—not an easy task. This entails a push for even more efficiency, eliminating distortions, and involving the private sector more.

3.121 **Crime should obviously be the top constraint to address**. UNODC and World Bank (2007), the most recent and comprehensive study for Jamaica, includes the following guidelines: (i) crime prevention through the study and design of environments to encourage desirable behavior and discourage antisocial behavior; (ii) a criminal justice-focused approach to reduce organized crime and drug trafficking, problems prevention approaches largely fail to deal with; (iii) given that Jamaica is a transit country and not a producer of cocaine, interdiction needs to be

complemented by strategies outside the region; significant assistance should come from destination countries to support interdiction efforts; (iv) better gun registries, marking, and tracking can help, as can improved gun interdiction in ports; (v) to address issues of youth violence, policymakers in the short run should borrow from the toolkit of evidence-based programs from other regions, such as early childhood development and mentoring programs, interventions to increase retention of high-risk youth in secondary schools, and opening schools after-hours and on weekends to offer youth attractive activities to occupy their free time; (vi) development of management information systems and performance indicators.

3.122 **Regarding the distortions, a simplified tax system with drastic reductions in incentives would help to alleviate the tax burden on non-promoted firms that pay their tax bills**. Jamaica should encourage other countries in the region to agree on harmonized tax incentives—if possible, none—to avoid the typical "race to the bottom" that foot-loose industries play very well.

3.123 **The very high returns to education suggest the potential for significant gains from investing more in early-childhood education, particularly on programs that improve quality, and improving labor skills through training,.** Given Jamaica's low level of entrepreneurship, and its problems with innovation, the country should consider improving the formal education system's focus on critical thinking and innovation. On the other hand, the country has to create a supply of skilled labor and make the economy more attractive to qualified workers and entrepreneurs, or at least internalize the cost of schooling for those who migrate. The evidence shows that migration is skimming the cream off Jamaica's human resources, which affects entrepreneurship, managerial abilities, and the workforce skills. Reducing the brain drain will demand successful efforts in other areas—in particular, a reduction in crime).

3.124 **Government promotion should shift priorities to address information and coordination failures.** A positive example of this more modern conceptual design of the industrial policy is the Master Plan for Sustainable Tourism Development, formulated in 2003. The plan highlights the importance of creating linkages between the tourism industry and other sectors.

3.125 **There is no silver bullet, a unique binding constraint that once removed would solve all Jamaican problems. Rather, the country needs an effort on several fronts**. It would hardly pay to improve human capital if crime is not reduced and brain drain not stopped, and reducing crime would be hardly pay if there were not better economic opportunities in the local economy. Enclaves do not generate spillovers, but if general productive conditions are not improved, only the protected sectors will thrive and the economy will continue developing in an enclave fashion. Government needs to move forward very efficiently, which calls for urgent improvement in accountability and governance.

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PART II: ENABLING ENVIRONMENT FOR GROWTH: KEY POLICY CHALLENGES

The analysis in Part I and particularly the growth diagnostics analysis in chapter 3 show that Jamaica's disappointing economic performance is a case of low productivity caused by: (i) deficiencies in human capital and entrepreneurship due inter alia to quality deficiencies in education and training and high migration rates, (ii) a high-crime environment constraining investment and retaining skilled workers and entrepreneurs in the country; and iii) the combination of high debt, distortive tax incentives, and the promotion of "enclave" development with little spillovers to the rest of the economy. In this context, this part of the report focuses on labor markets and public financial management with the objective of identifying the factors behind low labor productivity and fiscal distortions that hampers growth in Jamaica. The ultimate objective is to inform the design of reform options to remove these constraints and contribute to creating an enabling environment for growth. Among the key growth constraints, crime is deliberately left out of the scope of this report since it is heavily studied and lack of sufficient data on the result of recently initiated crime prevention projects does not allow for impact analysis.

CHAPTER 4. LABOR MARKET PERFORMANCE IN JAMAICA

The productivity analysis in chapter 1 and the growth diagnostics analysis in Chapter 3 demonstrated that human capital is a scarce resource and both labor productivity and total factor productivity are low in Jamaica. This chapter analyzes labor market performance in Jamaica with the objective of identifying the factors behind low labor productivity. The analyses indicate that overall labor market regulations are sufficiently flexible, with the significant exception of high firing costs. However, there exist substantial deficiencies in the quality of labor force resulting from low educational attainments and low percentage of workers who have received training. High rates of skilled emigration (brain drain) further constraints availability of skilled work force. These factors help explain the observed low labor productivity and total factor productivity in Jamaica.

A. INTRODUCTION

4.1   **The analysis in this chapter explores the main issues and challenges facing the Jamaican labor market, focusing particularly on their links to growth and labor productivity**. The analysis in Part I and particularly the growth diagnostics analysis in chapter 3 show that both labor productivity and total factor productivity are low in Jamaica, significantly constraining the economic growth. Therefore, identifying the factors behind low labor productivity and developing reform options to remove this constraint will be important for creating an enabling environment for growth. A well-functioning labor market is critical for economic growth and poverty reduction for many reasons. First, labor market contributes to growth by efficiently allocating this factor of production to where it is more productive. High labor productivity requires (i) that employers have enough knowledge of the skills of prospective employees and how they fit with production needs and (ii) incentives for employers to retain and train workers but also the necessary flexibility to hire and fire workers. From the supply perspective, job-seekers need to (i) know where the most appropriate openings are, (ii) be able to access these openings and show their credentials, and (iii) possess the resources and motivation to perform at full capacity on the job. Second, lower income households obtain most of their resources from labor earnings, so the labor market acts as a channel through which the benefits of higher growth reach the general population in the form of rising incomes. In this sense, a well-functioning labor market contributes to shared growth by providing opportunities to find jobs, obtain skills, and perform well on the job to all segments of the population.

4.2   **The chapter finds that the Jamaican labor market is characterized by** (a) mid-stage of demographic transition; (b) sufficiently flexible labor market regulations overall, with the significant exception of high firing costs; (c) substantial deficiencies in the quality of human capital as measured by graduates' low test scores and a low percentage of workers who have received training; (d) a high proportion of informality and growing labor market segmentation along formal/informal lines; and (e) high rates of skilled emigration (brain drain) and international remittances-induced declines in the rate of labor force participation.

4.3   **This chapter deals with each of these issues in turn.** Section B gives an overview of the labor market, describing the evolution of its main indicators over time and comparing these figures with other countries in Latin America and the Caribbean (LAC). Section C analyzes labor regulation, making international comparisons. Section D discusses the quality of human capital and the country's skills mismatch. Section E explores the characteristics of the informal sector in Jamaica, while Section F discusses the impacts of international migration and remittances on the labor market. Section G makes some concluding remarks.

B. GENERAL TRENDS AND CHARACTERISTICS OF THE LABOR MARKET

B.1. Historical Evolution of the Labor Market in Jamaica

4.4   **The main driver of per capita GDP growth between 1990 and 2007 has been a favorable demographic transition, while labor productivity and labor force participation rates have been declining.** Per capita GDP growth can be decomposed into contributions from labor productivity, the unemployment rate, labor force participation rate, and the share of working age population in total population:[76]

$$\frac{GDP}{pop} = \frac{GDP}{L} \times \frac{L}{LF} \times \frac{LF}{WAP} \times \frac{WAP}{pop}$$

Between 1990 and 2007, Jamaica's per capita GDP grew at an average annual rate of 0.44 percent. This can be decomposed into an increase of 0.8 percent a year in the share of working age population, partly offset by a decline of 0.37 percent per year in the rate of labor force participation. The rate of employed population over the labor force increased 0.31 percent per year on average, meaning that the ratio of employed to total population increased 0.73 percent a year. This would have been the rate of growth in per capita GDP had there not been an annual decline in labor productivity of 0.29 percent over the period.
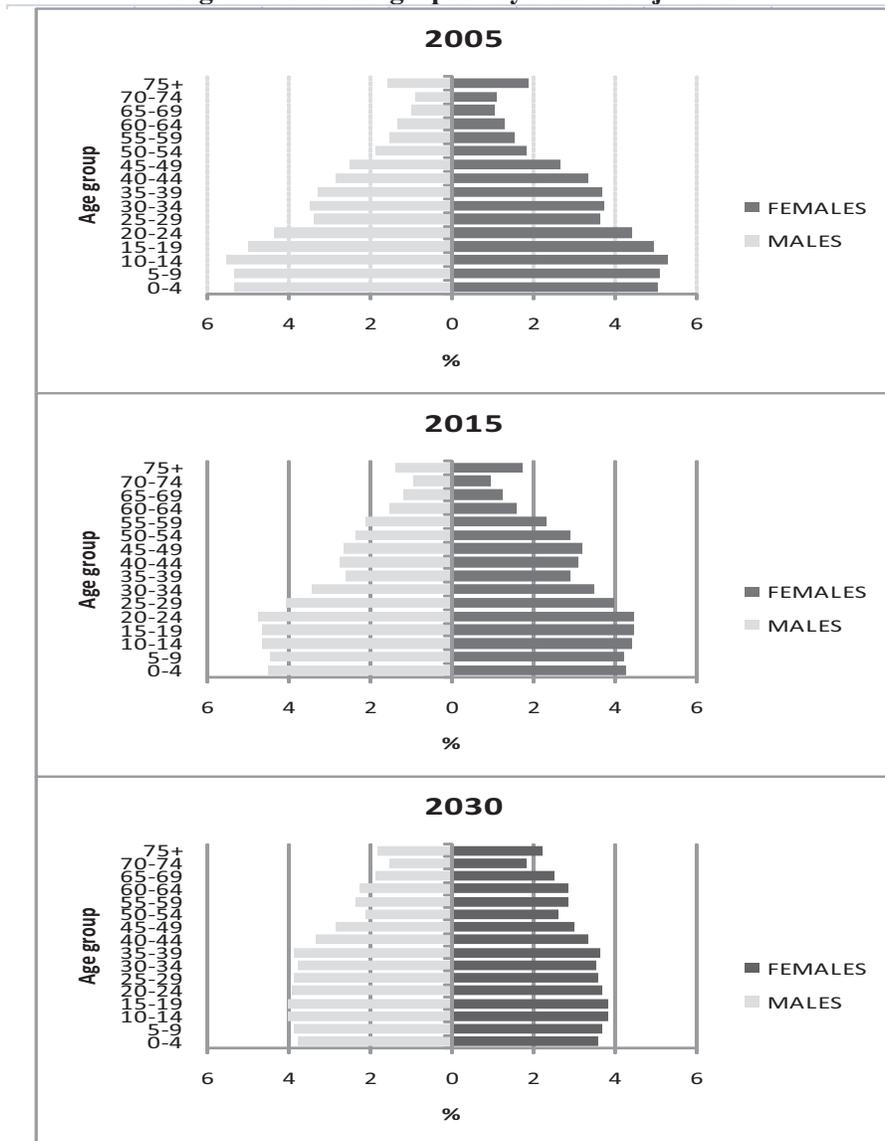
4.5   **Jamaica is in the mid stage of a demographic transition with declining fertility and mortality; so far, it has paid important growth dividends**. Since 1970, birth rates have decreased by more than 50percent. Mortality has also decreased from levels around 7.64 deaths per 1000 persons in 1970, to current levels around 6.5. This is consistent with an ongoing trend, although mortality levels seem to have been stabilized since the early 90s. As a result of these trends, population projections made by STATIN show a gradual flattening of the demographic pyramid. According to these projections, the share of the population between 15 and 64 years of age is expected to increase from 60 percent in 2005 to 65 percent in 2015, remaining at that level by 2030 (see figure 4.1). This demographic group approximates the country's potential labor force, although its actual size depends on such factors as secondary and tertiary school enrollment, female labor force participation, migration, and retirement behavior.

4.6   **Jamaica's labor force participation has shown an opposing declining trend**. Although a growing share of the population is of working age, a smaller share actually works or actively seeks employment. Labor force participation decreased from 69 percent in 1990 to 64 percent in 2009 (see Figure 4.2). This trend could be explained by several factors that affect

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[76] See Pagés, Pierre, & Scarpetta (2009) for a similar decomposition in Latin America.

labor supply. For younger cohorts, it could be an expansion of the educational system and higher educational attainment. According to secondary-school enrollment rates, this seems to have occurred in Jamaica between the early 1990s and the end of that decade. For other cohorts, factors such as increases in non-labor income and changes in intra-household allocations could be at play. For instance, Kim (2007) finds that remittances increase reservation wages and induce members of households with remittance income to withdraw from the labor force.

Figure 4.1: Demographic Pyramid Projection

Source: STATIN

4.7 **Unemployment was persistently above 15 percent during the 1990s but declined to 9.3 percent by October 2007**. Given the trends in labor force participation, this decline in unemployment may be partly explained by discouraged job seekers as opposed to net job creation in the economy. However, the unemployment rate among the youths ages 15 to 24 was twice the national average during this period. In recent years, unemployment has increased,
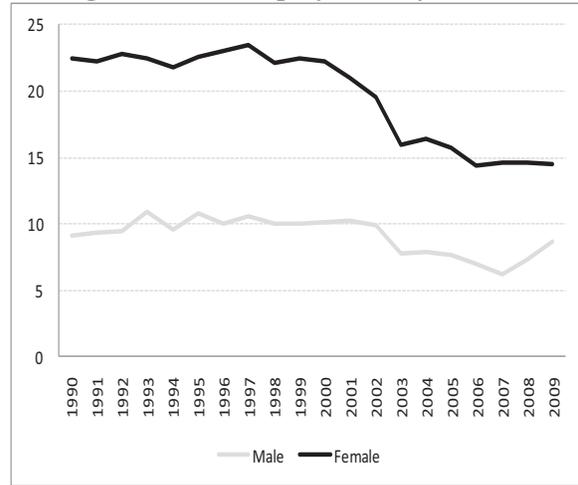
rising above 11 percent in 2009, most likely as a result of the global financial crisis (see figure 4.3).

Figure 4.2: Labor Market Indicators, 1990–2008
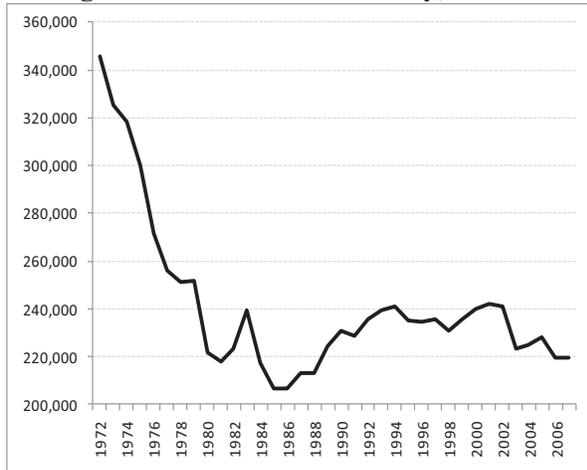

Source: STATIN, Labor force Survey

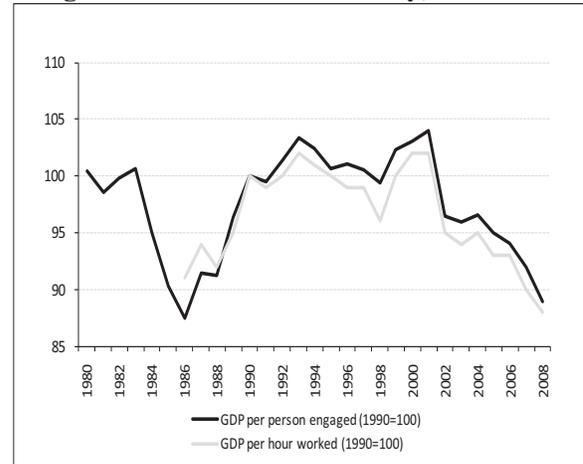**Figure 4.3: Unemployment by Gender**

Source: ILO

4.8   **After a large decrease in the 1970s, labor productivity remained stable in the 1990s before declining again in the 2000s.** This evolution of labor productivity shows up when measured as real GDP per employee based on STATIN data (see Figure 4.4). Alternative measures of productivity using International Labor Organization (ILO) data starting in 1980 paint a similar picture, either measuring as GDP per person engaged in constant PPP US$ or measuring GDP per hour worked (see figure 4.5). There is an important decrease towards the end of the period measured, which might hint at competitiveness problems.

Figure 4.4: Labor Productivity, 1972-2007

Source: STATIN

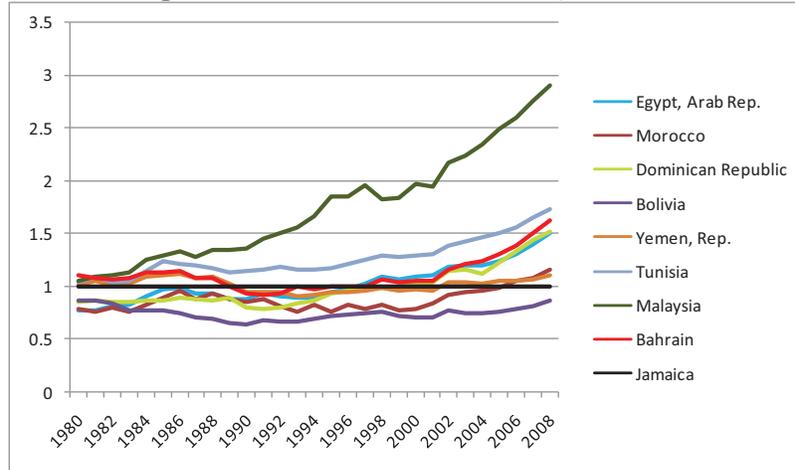**Figure 4.5: Labor Productivity, 1980-2008**

Source: ILO

4.9   **Jamaica's productivity has lagged in a period when other countries flourished, especially the Asian tiger economies.** In 1980, Jamaica had a GDP per worker of $9,960 at constant PPP. Among eight of the closest counties, Egypt, Morocco, the Dominican Republic, and Bolivia had slightly lower productivity, and Yemen, Tunisia, Malaysia, and Bahrain were slightly higher. The range was $7,627 for Egypt to $11,008 for Bahrain (see figure 4.6). By

2008, however, Jamaica's GDP per worker was equivalent to $8,822, only higher than Bolivia's. Meanwhile, Malaysia reached a GDP per worker of $25,590, and four other countries exceeded $13,000, or 1.5 times Jamaica's level. Labor productivity picked up early for Malaysia and Tunisia. During the 1990s, Jamaica actually was able to catch up with similar countries, but it started to lag countries like Egypt, Bahrain, and the Dominican Republic in the mid-1990s, ending up near the bottom of the pack after 2004, surpassing only Bolivia.

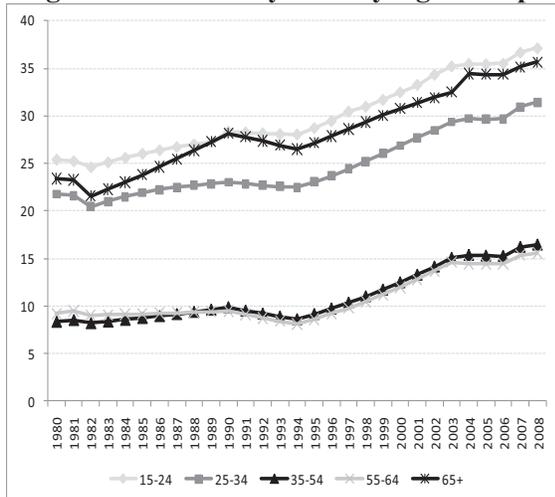**Figure 4.6: GDP per worker relative to Jamaica (constant 1990 PPP US$)**

Source: World Bank

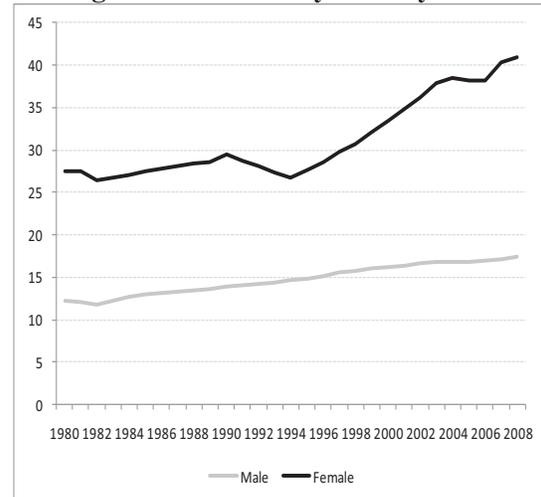## B.2. Labor Market Trends by Gender and Sector of Employment

4.10 **The decline in labor force participation is almost entirely due to a sharp increase in inactivity among women.** Decomposing labor force participation trend by age group, the increase in inactivity occurs across all age groups around the same time, starting in 1994 (see figure 4.7). However, the increase in overall inactivity comes from a steep decline of labor force participation of women, which shows a change in trend around 1994 (see figure 4.8).

Figure 4.7: Inactivity Rate by Age Groups (%)

Figure 4.8: Inactivity Rate by Gender
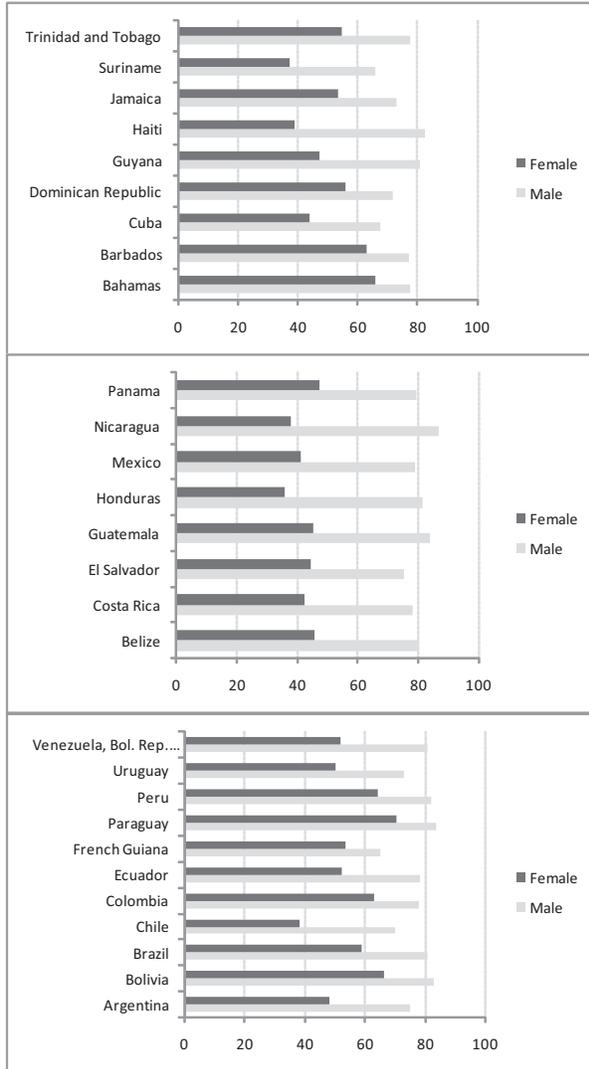

Source: ILO

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4.11   **Compared to other LAC countries, however, Jamaica remains above average in female labor force participation**—and it is below average in male labor force participation (see figure 4.9). Among Caribbean countries in 2008, the Bahamas, Barbados, and Trinidad and Tobago exhibit higher labor force participation than Jamaica for both men and women. In Central America, labor force participation by gender shows greater disparity, with overall figures higher than Jamaica for men but lower for women. For South American countries, labor force participation also tends to be higher than in Jamaica, with the exceptions of Argentina, Chile, and Uruguay. By age, Jamaica exhibits relatively high labor force participation for adults between 25 and 64 years of age but one of the lowest participation rates for the 15- to 24-year-old age group, trailing only Chile and Cuba (see Figure 4.10). This could be due to a high enrollment rate in secondary and tertiary education, which is consistent with Jamaica's relatively educated population.

4.12   **The decline in the unemployment rate that starts in 2001 is also stronger for women than for men** (see figure 4.3). Overall, this paints a picture of working-age women moving from unemployment to inactivity, increasing the proportion of women not participating in the labor force and decreasing the proportion of the population that is employed.
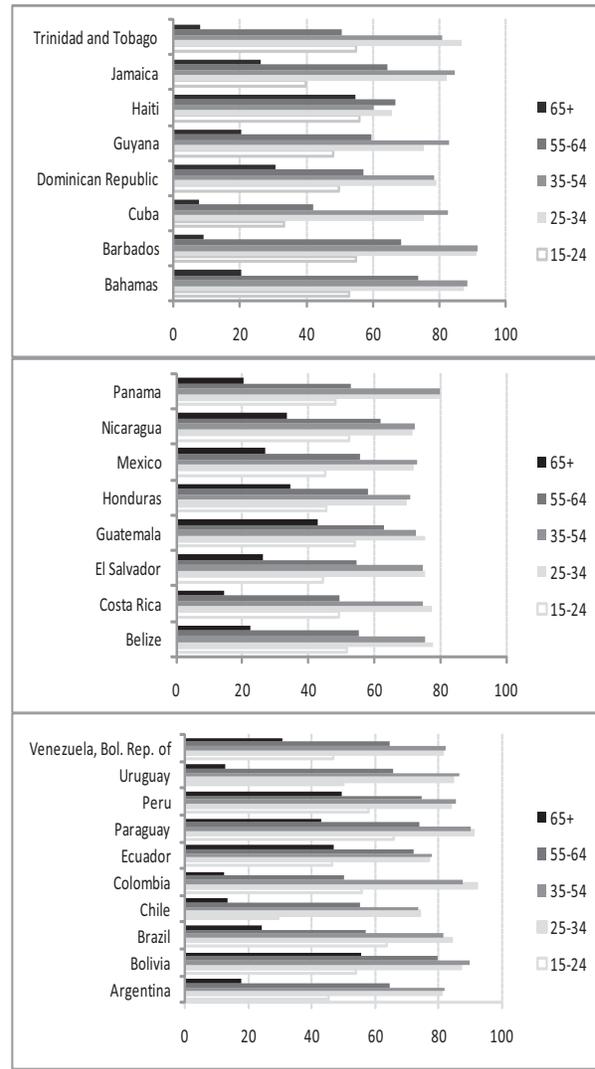
4.13   **The fall in labor force participation and unemployment rates explains the relatively mild declining trend in employment-to-population ratios for both men and women**. Over the 1991-2008 period, it is found that both males and females exhibit a decreasing trend in employment-to-population ratios among the young cohort (ages 15-24). This decline continues only among females over the age 25. Employment as a percent of the population remained stable for males older than 25. Higher education could be driving the falling employment rate for the young, while other factors are likely to be influencing the employment of women over time.

Figure 4.9: Labor Force Participation by Gender: Latin America and the Caribbean, 2008
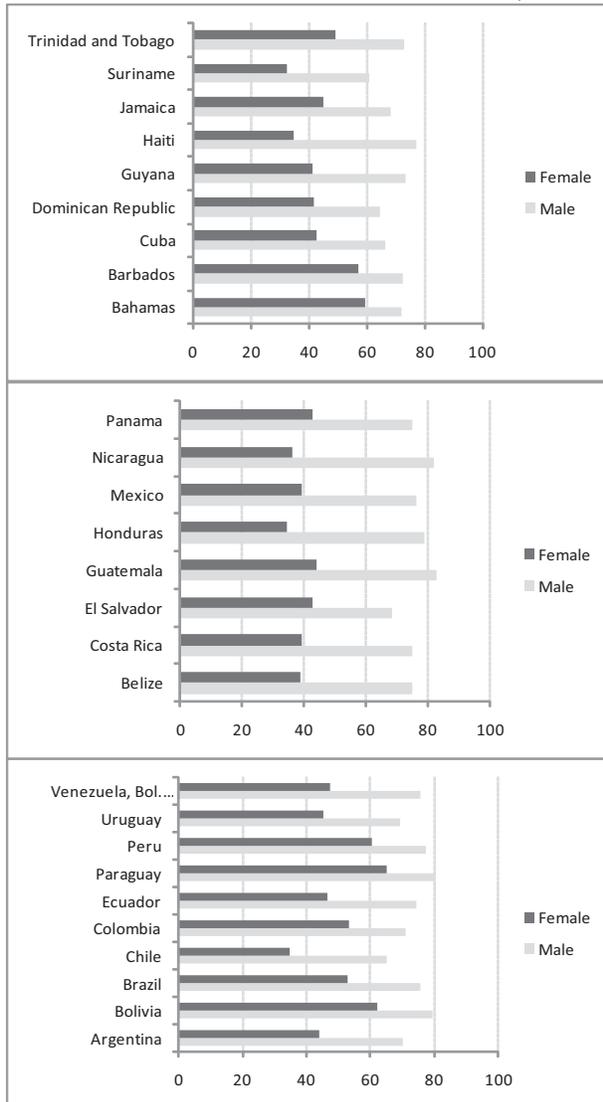

Source: ILO

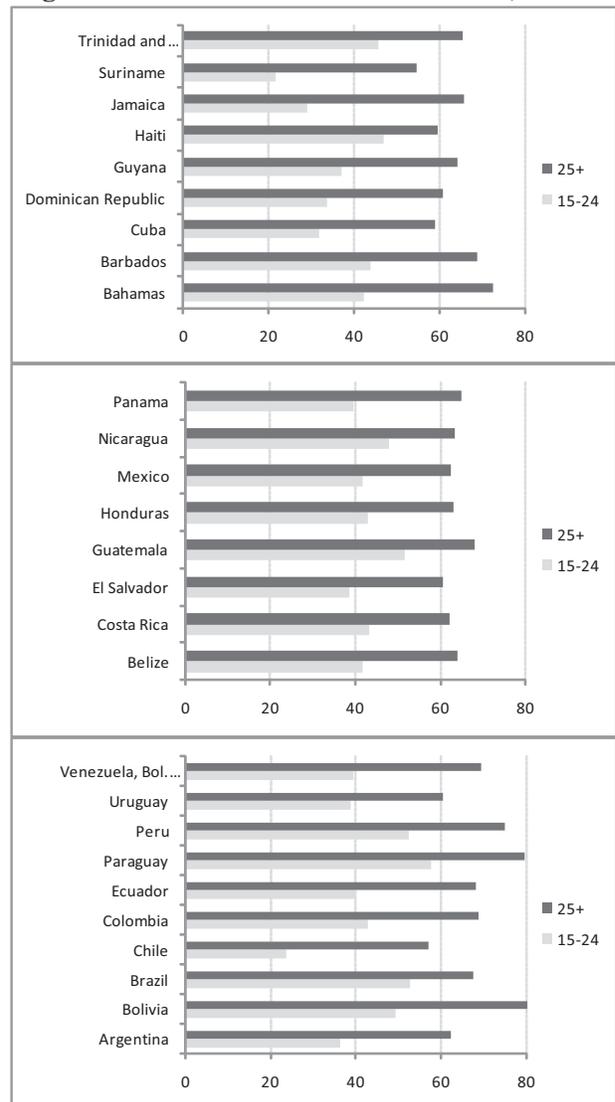**Figure 4.10: Labor Force Participation by Age: Latin America and the Caribbean, 2008**

Source: ILO

Figure 4.11: Employment to Population ratio by Gender: Latin America and the Caribbean, 2008

Figure 4.12: Employment to Population ratio by Age: Latin America and the Caribbean, 2008

Source: ILO

Source: ILO

4.14   **Jamaica is comparable with similar economies in the Caribbean in terms of male employment-to-population ratios and somewhat lower for female employment**. It is also in line with figures for Central American economies, although they tend to exhibit significantly lower female employment ratios (see figure 4.11). In general, South America exhibits larger employment-to-population ratios. When comparing across countries by age cohorts, Jamaica has low youth employment-to-population ratios when compared to Caribbean, Central American, and South American economies (see figure 4.12).

Figure 4.13: Labor Productivity by Sector, 1972-2007

Productivity

Source: STATIN

Figure 4.14: Real Wage by Sector, 1972-2007

Real Wages

Source: STATIN

4.15 **Since the 1990s, labor productivity has grown in mining and manufacturing, while it has declined in construction and commerce** (see figure 4.13). Looking at the pattern of labor productivity by sector, construction and manufacturing both experienced the declines in overall productivity that occurred during the 1970s and into the mid-1980s. From that point on, construction productivity continued to decline, manufacturing stabilized and recovered to its levels at the end of the 1970s, and mining started a trend of significant increases that peaked in 2002 at 3.5 times the sector's 1985 productivity level. The improvement in manufacturing productivity coincided with the large-scale expansion of the textile industry that occurred from the mid-1980s to late-1990s. The industry has contracted since 2000. During 2002-07, mining productivity, although volatile, remained at high levels, with an important decline in 2007. The mining sector increased in size and productivity when the Jamaican government provided several incentives to the manufacturing sector that encourage foreign to establish themselves in the country. Among the incentives were 10 years of income tax relief, plus exemptions on duty for imported machinery and raw materials.[77]

4.16 **Real wages have largely followed the evolution of labor productivity at the aggregate and sectoral levels, except for 1985-2002.** Figure 4.14 shows the evolution of the

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[77] These incentives include: The Export Industry Encouragement Act, The Modernization of Industry Programme, the Jamaica Export Free Zone Act, and the Accelerated Depreciation/Special Capital Allowance For more info: http://www.jamaicatradeandinvest.org/index.php?action=investment&id=1&oppage=4&optyp=mm.

GDP per worker and real wages in constant Jamaican dollars, each normalized to 100 in 1972 (data was obtained from the Jamaica Productivity Centre). Between 1977 and 1985, real wages fell more rapidly than labor productivity, but from 1985 to 2002, this relationship reversed and real wages outgrew productivity, which had become stagnant during that period. This trend, along with persistent double-digit unemployment rates, was viewed at the time as a sign of an ill-functioning labor market that was not able to clear supply and demand despite the consistent increase in real wages.[78] Since 2002, however, both average real wages and unemployment have shown declining trends. As a result, labor productivity in 2007 was 64 percent of its level in 1972 and real wages were at 67 percent of that year's level. At the sectoral level, a similar pattern can be observed, especially in the mining sector. However, figure 4.13 and figure 4.14 show that real wages did not fall as much as productivity in such sectors as construction or manufacturing. It is also interesting to note that real wages in mining move much more than in other sectors, which suggests there is more wage-setting flexibility in this sector.

Figure 4.15: Evolution of Employment by Sector

Source: STATIN

4.17   **Employment composition has shifted from agriculture to service-oriented sectors, showing an inverse relationship with labor productivity.** The composition of employment helps complete the picture of the labor market at the sectoral level. The employment shares of agriculture and manufacturing have decreased, while increases have come in wholesale and retail commerce (which includes activities related to tourism, such as hotels and restaurants), transport, and financial and community services (see figure 4.15). Overall output per worker has been falling in those sectors where employment share has been growing, and it has been rising in the sectors with shrinking relative employment. This is consistent with labor moving from low productivity sectors to high productivity ones and suggests that the returns to labor may have been falling at the sectoral level, underscoring the importance of policies to arrest this trend and boost labor productivity in an effort to maximize the demographic dividend from the growing working-age population.

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[78] View for example Kim (2007).

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4.18   **The rest of this chapter lays the groundwork for policy suggestions by analyzing the forces driving the observed behavior of the labor market**. First, it is relevant to analyze the flexibility of employment—the ease of movement to more productive sectors to foster more efficient allocation of labor. One constraint to increased employment productivity may be found in specific features of the country's employment regulations. In addition, it may be possible that new entrants to the labor market are not equipped with the necessary skills to be more productive than workers leaving the labor force. Therefore, a key element of the diagnosis is to understand the labor force's skill component and its evolution over time. It may also be the case that the composition of the labor force is shifting towards less productive workers. This could be the result of increasing informality, with its lower productivity, or a result of losing an important fraction of the most skilled workers due to emigration in the brain-drain phenomenon. Therefore, this chapter proceeds with the analysis of employment regulation, skills mismatch, informality, and migration as potential explanations the labor-market performance in recent years.

C. EMPLOYMENT REGULATION

4.19   **According to the 2010 Doing Business Report, Jamaica's labor market regulations are quite flexible.** The Doing Business rankings are based on methodology developed by Botero et.al (2004). As a common law country—in the tradition of other members of the British Commonwealth of Nations—Jamaica's employment regulations are generally flexible, and the country ranks 39th globally in ease of employing workers. In particular, it ranks among the top 10 in flexibility three sub-components—"difficulty of hiring," where regulation allows appropriate degrees of flexibility in the use of fixed-term contracts; "rigidity of hours," which considers the distribution of hours during the week and year to accommodate changes in business activity; and "difficulty of redundancy," where Jamaica maintains no legal restrictions on dismissing redundant workers.

4.20   **However, firing costs borne by firms are comparatively high even if there are no special requirements when dismissing workers.** According to information provided by ILO, the Jamaican law on employment termination is based on, and governed by, English common law, except to the extent the common law has been modified by statute.[79] The statues governing the termination of employment are summarized in box 4.1. In the Doing Business report, redundancy costs are calculated for a worker with 20 years of continuous employment. According to Jamaica's existing rules, such a worker must be given the equivalent of three month's pay as advance notice and an additional 50 weeks of salary as severance. This implies a redundancy cost of 62 weeks of salary for a worker with 20 years' employment, higher than the LAC average of 53 weeks and well above the OECD countries' average of 26.6 weeks. Although Jamaica ranks 39th on the overall ease of employment index, it ranks 132nd among 181 countries in redundancy costs. These redundancy payments are the only source of income protection for the unemployed that is provided for workers in the formal sector in Jamaica, given the inexistence of unemployment insurance, which may explain their generosity. However, reducing this burden would make a difference in improving Jamaica's overall level of flexibility of the labor market.

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[79] See ILO Industrial and Employment Relations Department, Profiles of National Legislation at http://www.ilo.org/public/english/dialogue/ifpdial/info/termination/countries/jamaica.htm.

Box 4.1: Regulations Regarding the Termination of Employment in Jamaica

There are two central statutes dealing with termination of employment in Jamaica:

the Employment (Termination and Redundancy Payments) Act, 1974 (as amended) (ETRPA), and

the Labor Relations and Industrial Disputes Act, 1975 (as amended) (LRIDA).

The ETRPA contains statutory minimum notice periods that apply in the absence of an agreement more favourable to the employee (sec. 3). These are as follows:

- two weeks notice for employees with less than five years of continuous employment;
- four weeks for between five and 10 years of continuous employment;
- six weeks for between 10 and 15 years of continuous employment;
- eight weeks for 15 to 20 years of continuous employment; and
- 12 weeks for 20 or more years of continuous employment.

As under the common law, notice periods may be waived, or payments in lieu of notice are allowed (sec. 3(3)(a), ETRPA). Greater notice periods will apply if the contract of employment so provides, or if custom requires a longer notice period (sec. 3(3)(c), ETRPA). In addition, employees with not less than two years continuous employment, who are dismissed on the grounds of "redundancy", are entitled to a redundancy payment. After the two-year qualifying period, the rates of redundancy payments are:

- for one to 10 years of service, two weeks pay per year;
- for service beyond 10 years, two weeks pay per year for years one to 10, then three weeks pay per year
- for each year of service beyond 10 years of service (ETRPA regulations).

D. SKILL FORMATION AND LABOR FORCE TRAINING

4.21   **Skill formation through schooling, job training, and learning-by-doing is critical to labor productivity and economic growth**. If producers are to efficiently meet the needs of consumer markets, it is important that the supply of skills match the demand for skills. Firms' productivity and quality of output can be adversely affected by mismatches of skill supply and demand. This section examines skills mismatches and labor force skills as the potential determinants of poor labor productivity performance in Jamaica. The section finds that: (a) the existence of skills mismatches can have adverse effects on realized labor productivity, but there is little evidence of them in Jamaica; and (b) the country has a major deficit in the quality of its human capital base, with more than 70 percent of the workforce being uncertified or untrained.

4.22   **Skills mismatch—which can be either vertical or horizontal—occurs where the skills offered by workers does not match the needs of employers.** Skills mismatch can refer to various types of skill gaps or imbalances that may be quantitative or qualitative in nature. *Vertical skills mismatch* (VSM) occurs when a worker's skills are lesser or greater than what is required to effectively perform a job (i.e., a gap between education or training and job requirements), and *horizontal skills mismatch* (HSM) takes place when workers have appropriate levels of qualifications but different skills than required to perform the job effectively (i.e., a gap between field of study and job requirements).

4.23   **In labor markets, skills mismatch shows up in three ways: unemployment or underemployment of skilled persons, vacancies for skilled persons (a shortage of labor), or emigration of persons to other labor markets.** For VSM, the main issue is over-education, where the job structure has not been able to absorb the increased supply of educated workers on their traditional occupational rungs (Tsang and Levin, 1985). Over-education is sometimes viewed as a short-term issue affecting new entrants (graduates) in the workplace, but it can

become chronic in a low-growth economy where the demand for skills rises at a much slower rate than the new job seekers supplied by education and training institutions (McGuinness, 2006). HSM has been partly associated with the "diploma disease," where workers seek additional qualifications (academic) but not the appropriate skills to perform on the job. It is also associated with a form of signaling in the labor market.

4.24   **Skills mismatch can have a negative impact on labor productivity**. The existence of a skills mismatch results in a less than optimal level of labor productivity in enterprises. Excess demand for skills can result in the hiring of less-skilled workers, reducing realized productivity. Excess supply of skills can result in a "bumping down" effect as more-skilled workers occupy jobs that could be adequately filled by less-skilled workers. As the mismatch is reduced over time, the enterprises are able to move towards their optimal labor productivity levels. Hence, an inverse relationship exists between skills mismatch and labor productivity—that is, better matching of skills to jobs in enterprises yields higher productivity.

4.25   **The challenge associated with analyzing skills mismatch in Jamaica and its effect on labor productivity is the lack of crucial information.** Quarterly labor-force surveys provide information on the degree of employment and unemployment by educational attainment and occupation, but no corresponding data on vacancies exists. Nor are there any direct studies of the extent and nature of skills mismatch using employer/employee surveys.

4.26   **An examination of advertised vacancies and unemployment rates reveals relatively low and declining skills mismatch.**[80] A review of vacancies by occupational group over the 2002-2008 period indicates that 46 percent of the vacancies were in the professional, senior official, and technician group (see table 4.1). Clerical occupations accounted for 14 percent, while service/sales occupations represented 20 percent of total advertised jobs. These data suggest an ongoing demand for skilled labor in Jamaica. Furthermore, the unemployment rates among professional, managerial, and technical and skilled agricultural/fishery workers tend to be relatively low (see table 4.2). Using an aggregate mismatch index based on unemployment data (SSMI), the size of the skill mismatch between these two broad categories is relatively low compared to the other occupational categories.[81] The degree of mismatch among professional, managerial, and technical persons declined from 10.9 percent in 1995 for to 7.3 percent in 2008. This indicates an improved fit between the supply of and demand for skilled labor.

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[80] The advertised positions may not reflect the full picture and conclusions should be interpreted with care.
[81] The index is due to Sneessens and Shadam-Metha (1995) and is calculated as follows:

$$\text{SSMI}_t = \frac{(1 - u_{ht})}{(1 - u_t)}$$

where u_t is the aggregate unemployment rate at time t
u_{ht} is the unemployment rate of the highly skilled labor h at time t.

Table 4.1: Advertised Vacancies by Occupational Group

(May 2002 to September 2008, number)

Occupational Group and Main Jobs	Count
1 Professional, Senior Officials and Technicians	**40,345**
1.1 Teachers	8,051
1.2 Lecturers	2,069
1.3 Accountant/Accounting Officer	1,772
1.4 Engineers	1,027
1.5 Marketing/Sales	984
1.6 Principal	949
2 Clerical	**12,144**
2.1 Receptionist/Customer/Client Service Representative	2,683
2.2 Cashier	1,803
2.3 Typist/Secretary	1,271
3 Service Workers/Shop Workers	**18,083**
3.1 Sales Representative	5,580
3.2 Bartender/Barmaid	2,139
3.3 Cook/Chef	1,186
4 Craft and Related Trade Workers	**3,368**
4.1 Technician	1,019
4.2 Mechanic	627
4.3 Tailor/Dressmaker	439
5 Plant and Machine Operators and Assemblers	**3,902**
5.1 Driver/Dispatcher	3,003
5.2 Machine/Drill Operator	252
6 Elementary Occupations	**9,732**
6.1 Domestic Helper	4,185
6.2 Janitor/Handyman	1,589
6.3 Casual Worker	1,448
Total Vacancies	**87,701**

Source: Ministry of Labour, Labour Exchange

4.27 **Despite low mismatch levels, assessments of skill needs suggest continuing problems for persons in the ICT, hospitality, health, and educational occupations**. Peters and Whittington (2009) report that in focus group exercises held for students, employers, and tertiary level institutions, the main jobs/skills that are regarded as the drivers of national development were ICT, hospitality, and technical (especially health). The stakeholders indicated that there was a need to promote training in ICT, entrepreneurship, and social skills.

4.28 **These findings suggest that skills mismatch did not feature significantly in the observed productivity decline.** While the previous paragraph reported some evidence of skills mismatch, especially among the professional, managerial, and technical occupations, it is not very large and seems to have declined over the years. Labor productivity, however, declined rather than increased over the same period, suggesting that skills mismatch was not the main culprit. The challenge for Jamaica is raising the overall quality of its human capital, starting from early childhood education.

Table 4.2: Unemployment Rates by Occupational Group

(Occupation in which the person last worked 1995-2008, %)

Occupational Group	October 1995	October 2000	October 2004	October 2008
Professional, Senior Official, Technicians	5.9	8.5	4.4	3.6
Clerks	17.0	14.0	14.1	10.7
Service/Shop/Sales Workers	16.1	15.9	12.2	12.7
Skilled Agricultural/Fishery Workers	1.8	1.0	1.3	1.3
Craft and Trade Workers	10.1	11.7	8.5	9.0
Plant/Machine Operators	8.2	15.3	6.8	7.9
Elementary Occupations	15.0	15.4	13.7	15.5
Unspecified Occupations	100.0	50.0	100.0	55.6
TOTAL	16.8	15.6	11.4	10.3

Source: STATIN, Labour Force Reports

Figure 4.16: Distribution of Labor Force by Training Received

Situation at 2008	Evolution 1995-2008

Source: STATIN: Labour Force Survey

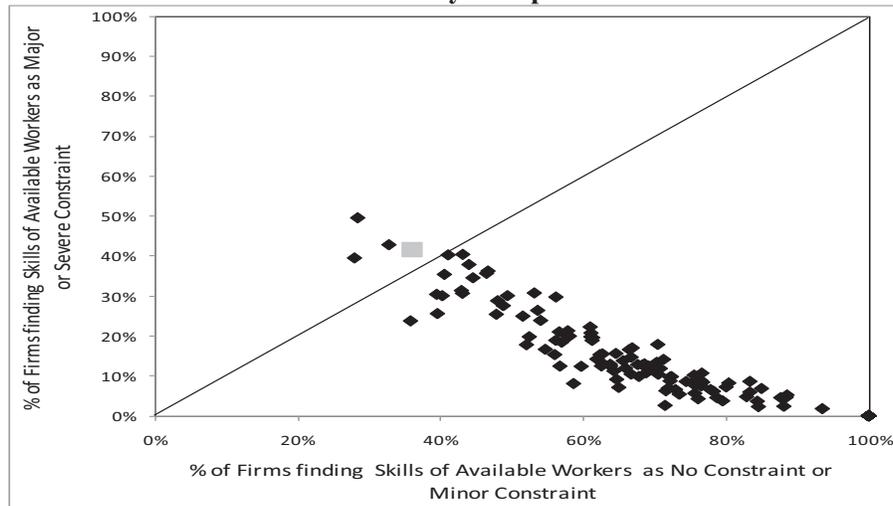4.29   **A large portion of the labor force in Jamaica has no formal training**. In 1995, as much as 80 percent of the labor force indicated that they had no training; by 2008, the share was still high at 72 percent (see Downes, 2010). Recent trends in the stock of workers with some training are not encouraging either: a small gain in the ratio of workers with some professional or vocational training has been offset by a decline in on-the-job training (see figure 4.16). The combination of low educational attainment and low levels of training suggest an overall low quality of the human capital, which can be expected to have a negative impact on the level and growth of productivity.

4.30   **According to the 2006 World Bank Investment Climate Survey, a significant portion of Jamaican firms cite lack of skilled labor as a severe constraint for growth, although results should be taken with caution due to sample size**. The Investment Climate Survey (ICS) asks whether skills and education of available workers is "a problem for the operation and growth of your business." On average, 56 percent of the firms do not find this factor as a binding constraint for the world sample of more than 59,000 firms in 95 countries between 2002 and 2006. In contrast, only 19 percent of Jamaican firms do not find skills and education to be a constraint, the second lowest response in the sample.[82] Figure 4.17 explores this variation, showing that the perception is more generalized in Jamaica than in other countries. Consistent with this evidence, a survey of research on labor productivity in Jamaica pointed to the inadequate quality of the human capital as a major factor in the relatively low level of labor productivity (see Downes, 2004).

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[82] A caveat is in order: cross-country comparisons should be taken with care because it is not clear what "skills and education" means in each country and for each firm. Even among firms within a country, there is a lot of variation in the response.

**Figure 4.17: Jamaica: Skills of Available Workers
Cross-country Comparison**

4.31   **Available studies indicate that a lack of skills is a constraint on realized labor productivity.** There are not many studies analyzing returns to training. One by James, Williams, and Hamilton (2005) finds (i) the private and social rates of return to technical and vocational education were greater than the opportunity cost of providing such education, and matched or exceeded the returns to traditional education (after adjusting for the period of training during the period of education); and (ii) the rates of return to technical and vocational education were highest when students have performed well in the traditional educational system. Downes (2010) points out that in Jamaica (i) skills mismatch have an adverse effect on realized labor productivity; (ii) a major deficit persists in terms of the quality of its human capital, with more than 70 percent of the workforce being uncertified or untrained; and (iii) underinvestment retards education and training, especially at the post-secondary level.[83]

4.32   **The skill formation and human capital challenges facing Jamaica have long been recognized.** Over the years, various institutional and policy initiatives have been implemented to address both the quantity and quality dimensions of the human resources problem. A commission was established in 2003 to boost the performance of students at the early-childhood education level. Enrollment rates have been above 90 percent, although the number of children enrolled in early-childhood programs declined from 134,458 in 1995 to 111,050 in 2007. A special fund was established to provide for school equipment, curriculum development, and teacher training. The government has sought to reform the secondary-school system by improving teacher training and upgrading facilities and equipment, but the emigration of trained and experienced teachers and the high level of vacancies have hampered the reform process.

4.33   **A generally low level of unemployment persists among tertiary-level graduates, who either find jobs in Jamaica or immigrate to other countries.** Tracer studies indicate a

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[83] According to Downes (2010), the most significant arrangement to satisfy the skill needs of the Jamaican labor market is the establishment of the Human Employment and Resource Training Trust (HEART) and the National Training Agency (NTA) to provide technical and vocational training.

relatively good fit between tertiary-level graduates and labor market needs in both the short and medium rums. Among graduates from University of the West Indies for 2007-08 (Mona Campus), 90 percent of those surveyed were employed within the first year of graduation, mainly in the areas of education, health, finance, and banking. Forty-nine percent indicated their first degrees were the minimum requirement for their jobs, especially in the private sector. Fifty-one percent indicated that their fields of study were related to their jobs. Fifty-six percent indicated that they planned to engage in graduate studies in fields other than the subject of their first degrees. Some areas included human-resource management, business management, marketing, law, and education. Most respondents were in the 19- to 24-year-old cohort and were generally satisfied with the UWI-provided skills and competencies, including critical thinking and ability to work independently. The basic results suggest some degree of labor-market assimilation takes place over time, although there might be some degree of over-education (over-qualification) for entry-level jobs. There is a small measure of mismatch associated with these graduates in the short run, which declines over time.

4.34   **The HEART Trust/NTA has been Jamaica's main agency providing technical and vocational training.** An estimated 380,000 persons were trained by the agency between 1982 and 2008. It uses work-based training—namely, traineeships, apprenticeships, and general workforce development. A National Qualifications Framework (NQF) that is standards-driven and competency-based is employed by HEART Trust/NTA. By focusing on competencies and enterprise-based training, workers have been better matched to the labor market. While the agency has contributed to improved labor productivity through its trained and certified graduates, the output is only a small percentage of the needs of a highly technological era. McArdle (2008) has argued that the HEART Trust/NTA has contributed significantly to the human-capital formation process and, as a result, improved productivity in Jamaica. However, Hutton (2009) argues that the vocational/technical programs in the school system and important contributions by the HEART Trust/NTA have not be enough to close a formidable skills gap in Jamaica, especially given the technologically driven age. Furthermore, the emigration of skilled persons means that the training system is continuously being forced to replace lost workers.

4.35   **Graduates of the HEART Trust/NTA programs also receive favorable ratings in the labor market.** Tracer studies have been ongoing since 2005, and the most recent one, conducted in 2008-09 for 2006-07 graduates, indicated that 93 percent of graduates were employed in the labor market, with most in agriculture, construction, hospitality, and ICT. Persons trained at the higher levels were more likely to be employed than those at lower levels. Typically, graduates from these institutions obtained their education and training and then opted for salaried employment. The percentage of graduates who were self-employed was small at 3 percent to 9 percent.

4.36   **Jamaica has also emphasized life-long learning as part of the process of human-capital development.** The Jamaica Foundation for Life-long Learning (JFLLL) was established in 2006 as a transformation of the Jamaican Movement for Advancement of Literacy (JAMAL). Its goal is to bridge the gap between the school system and the educational and training facilities established to make persons more productive. As an offspring of a national literacy program, JFLLL caters largely to persons who did not complete secondary-level education through a High

School Equivalency Program (HISEP). This program has been developed to reduce the gap between educational attainment and employment skill requirements.
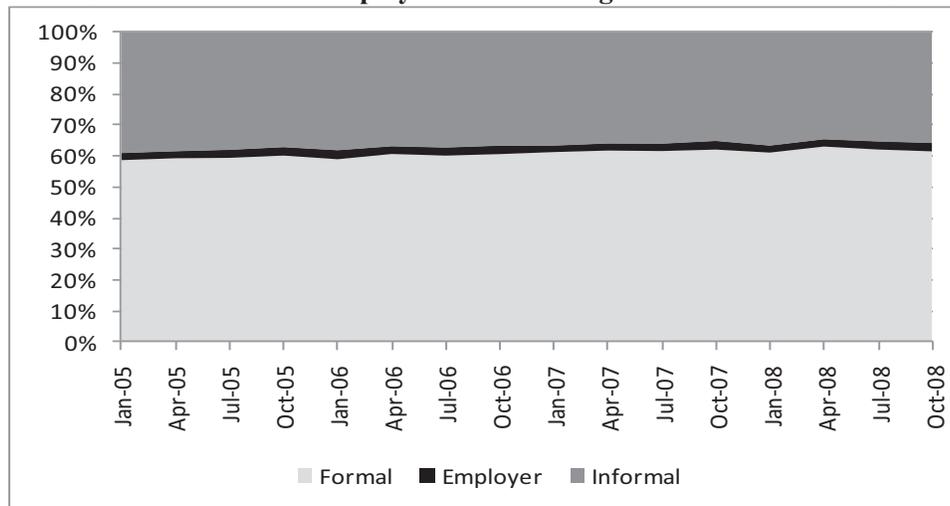
4.37 **In addition to the programs aimed at adult skills formation, Jamaica targets early childhood development.** A conditional cash-transfer initiative called the Program for Advancement of Health and Education (PATH) provides assistance to vulnerable groups (children, elderly, disabled mothers) and seeks to improve the health and educational levels of the poor. Studies point to a lack of human capital as a major cause of Jamaican poverty. The PATH has been designed to reduce child labor and to boost school attendance by requiring the children in beneficiary households to attend school regularly and obtain medical check-ups. The PATH arrangement is being strengthened as part of a welfare-to-work program. A step-to-work program provides counseling and referral services to adults in households receiving conditional cash transfers through the PATH, seeking to encourage participants to use existing employment-related services. The government is also implementing a project called TACKLE administered by ILO/MLSS/MOE to tackle child labor in Jamaica.

4.38 **Overall, the Jamaican authorities have introduced a number of policy and institutional measures to address the severe skills gap facing the country. However, more needs to be done at all educational levels and in the area of social trust**. The existence of a large group of uncertified and untrained workers led to measures that start at the primary level and go to the tertiary/post-secondary level. Even though some improvement has taken place, increasing realized labor productivity requires more work at all levels of the education and training system. In addition, the nature of the social relations needs to be changed. Carter (1997) points out that the degree of distrust between workers and employers is a barrier to increasing labor productivity in Jamaican enterprises. Both human resource management and social relations policies would be needed to overcome the degree of distrust.

E. INFORMALITY

4.39 **The informal sector's share of employment has decreased in recent years in Jamaica.** The ILO defines vulnerable employment as the self-employed plus unpaid family workers, and the share of these workers in Jamaica's total employment decreased from 42 percent in 1991 to 33 percent in 2007. It increased to 36.5 percent in 2008, most likely due to an international economic crisis that led to similar results in other countries. However, informal labor may take other forms as well. Even among employees, the job may not include coverage of basic social security services. Unfortunately, information on the coverage of such social security components as pensions or health benefits is lacking at this point in Jamaica. Although Jamaica's informal employment has been decreasing in recent decades, it is still higher than it is in other English-speaking Caribbean countries. Actually, the level of informal employment is more comparable to what can be found in other Latin American countries, such as Peru or Venezuela (see figure 4.18 and figure 4.19).

Figure 4.18: Share of Informal Employment According to Two-Dimensional Classification

Figure 4.19: Share of Informal Employment, 2007

4.40   **The evolution of the relative size and relative wages of the formal and informal sectors suggests the existence of a segmented labor market in Jamaica**. If markets were integrated, the increase in relative wages in the formal sector would attract more workers, increasing the formal sector's relative size. Since the contrary occurs, some force is precluding workers from moving between sectors in response to shifts on their relative wages. The distribution of earnings varies by formal or informal employment, and the minimum wage is starting to have a binding effect on the market, especially since 2008. Earnings are more unequally distributed in the informal sector than in the formal sector, with a slightly lower mean—although the mode is remarkably similar in both sectors. Jamaica increased its minimum wage in 2008. As a result, the minimum wage as a percentage of average earnings jumped from 46 percent in 2007 to 58 percent in 2008. It now seems to have a binding effect, contracting the earnings distribution from the left in both the informal and formal sectors, especially in 2008. The informal sector's distribution of earnings becomes bimodal in 2008, with one of the modes at a significantly lower level than the minimum wage.

4.41   **The minimum wage increase in 2008 was well above the gain in real wages, resulting in a sizable proportion of workers earning less than the minimum wage and an expansion of the informal sector.** Between 2007 and 2008 the minimum wage increased 15.6 percent in nominal terms. This increase was well above the actual change in wages in an economy adversely affected by the global financial crisis. As a result, workers earning less than the minimum wage increased from 15.7 percent in 2007 to 45.3 percent in 2008 (see figure 4.20). The proportion of workers earning below the minimum wage is higher in the informal sector and its share of employment expanded significantly in 2008 (see figure 4.21). In addition, the unemployment rate increased slightly in 2008.

Figure 4.20: Wage Distribution Relative to the Minimum Wage

Source: Authors calculations based on Labour Force Surveys, 2004-2008.

Figure 4.21: Employees Earning below Minimum Wage (%)

Source: Authors calculations based on Labour Force Surveys, 2004-2008.

4.42 **Informal employment is more common among individuals with low educational attainment, older workers, and people living in rural areas**. Table 4.3 shows the proportion of informal workers among different groups. Informality rates are higher among men than women, workers with lower education levels, older workers, heads of households and workers located in rural areas. In particular, the informality rate is low in Kingston metropolitan area at 33.3 percent and among individuals with tertiary education at 5.4 percent.

4.43 **Multivariate analysis shows a significant effect of education on the probability of being informal and a significant change in some determinants of informality for 2008**. To analyze the characteristics associated with being an informal worker, a probit model is estimated with the indicator of informality as a dependent variable

Table 4.3: Characteristics of Informal Workers

2008	Informality Rate	% of Total Informal
by Gender		
Male	54.8	61.2
Female	45.0	38.8
by Age Group		
14-24	35.5	8.3
25-34	41.4	22.7
35-44	52.2	29.6
45-54	57.1	19.1
55-64	62.0	10.8
65+	79.9	9.4
by Educational Attainment		
No Primary	84.0	4.6
Primary	75.8	15.7
O-level	67.5	44.9
A-level	38.7	33.2
Tertiary	5.4	1.1
by Relationship to Head		
Not Head	45.7	41.5
Head	54.6	58.5
by Area		
KMA	33.3	22.5
Urban	48.6	18.5
Rural	64.0	58.9

Source: Authors calculations based on Labour Force Surveys, 2004-2008.

using data from the Labor Force Surveys between 2004 and 2008. The results, presented in annex 6, show that informality exhibits an inverted U-shaped age-profile when controlling for education, gender, area of residence, and sector. Relative to individuals with less than primary education, individuals with secondary education are 7 percent to 8 percent less likely to be informal, while individuals with tertiary education are almost 40 percent less likely to be informal. Informality is also significantly higher among workers in the primary sectors (agriculture, mining, fishing, etc.); individuals in any of the other sectors are 50 percent less likely to be informal.

4.44 **The pattern of informal work shifted in 2008, increasing the probability of working informally for men and residents of Kingston metropolitan area.** Two features seem to distinguish 2008 from the other years. First, holding everything else constant, women were at least 5 percent more likely than men to be informal between 2004 and 2007, but this relationship weakens in 2008, when it is only significant at the 10 percent confidence level. In addition, individuals residing in other urban areas were just as likely as those in the Kingston area to work informally between 2004 and 2007, while individuals in rural areas were 6 percent to 7 percent more likely to be informal during the period. In 2008, however, the likelihood that a resident of Kingston works in the informal sector increased relative to other localities. These results suggest that the effects of the international financial crisis, which started being felt in 2008, disproportionately affected the propensity to work informally for men and Kingston residents.
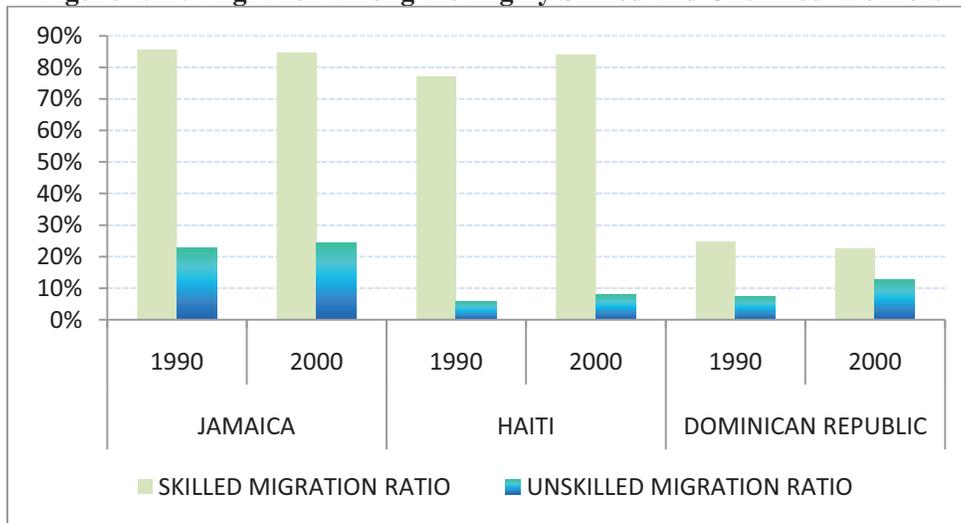
4.45   **Reducing the informal economy's size is a challenge faced by many developing nations, and it requires strengthening both the demand and supply for formal labor.** In general, this requires strengthening the demand for labor in sectors that are more likely to engage in formal employment. For this purpose, a solid business climate that gives stability for potential investors is key. On the supply side, strengthening the labor force's skills component is an important step. This requires increasing access and improving the quality of education, especially at the post-secondary level. Individuals with tertiary education are significantly less likely to work informally. International evidence also shows that technical and vocational education that trains workers in job-relevant skills improve the chances of finding jobs in the formal sector. A strategy that aims to improve the skills component of the labor force would likely help to improve labor productivity in the future.

F. MIGRATION

4.46   **A sizable portion of Jamaica's potential labor force emigrates each year and a large portion of the population lives abroad.** For example, as of 2000, slightly less than 3 percent of the world population was living in a country other than the one in which they were born. The same ratio for Jamaicans was over 35 percent, which is very high compared to 4.2 percent in upper middle income countries, 5.8 percent in countries with population between 2.5-10 million and 15.3 percent in the Caribbean (Ozden et. al, 2011). In 2008, Jamaica had a net migration rate of -5.88 per 1,000 people, ranking 166th among 180 countries in the world. It actually was the worst ranked among countries with at least 1 million inhabitants. Since 1975, the net emigration rate has not been below 6 per 1,000 people, with the exception of the first half of the 1980s and 1989. Due to its location and colonial history, physical and social costs of migration are relatively low for Jamaicans when compared to people living most other developing countries. Having English as medium of education, being in close physical proximity to the US (the largest migrant destination in the world), and having large diasporas that enable low assimilation costs lead to high rates of immigration for Jamaicans of all education levels.

4.47   **Further dissection of the overall migration ratio reveals an interesting pattern that is common in many developing countries—the large difference between the migration rates of highly skilled versus the unskilled workers**. As the Figure 4.22 illustrates, over 85 percent of people who have tertiary education and who were born in Jamaica are currently living in other countries. This ratio changed very little since 1990 and is very close to another island country in the Caribbean—Haiti at 84 percent in 2000—but much higher than the level in Dominican Republic which was 23 percent 2000. In comparison, the migration level of unskilled workers (people with secondary education or less) was 23 percent in Jamaica. This rate is significantly higher than the 8 percent in Haiti and 13 percent in the Dominican Republic. Yet, the single number that immediately catches the attention is that 85 percent of all Jamaican college graduates are living abroad. This is one of the highest skilled migration ratios captured in the data (Docquier, Marfouk, Ozden, Parsons, 2011).

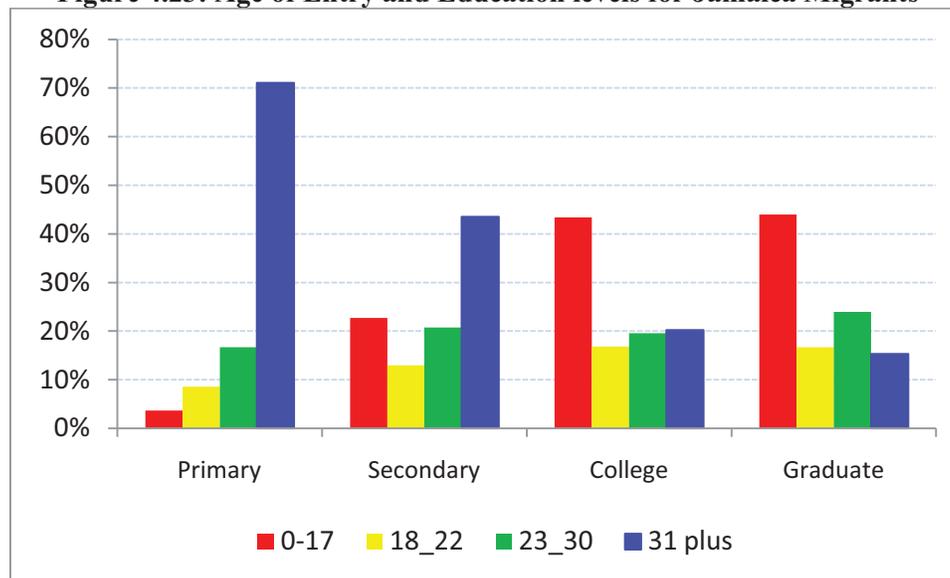**Figure 4.22: Migration among the Highly Skilled and Unskilled Workers**

4.48   **Three countries account for over 99 percent of tertiary educated Jamaican immigrants**. The United States is the home for 70 percent of 287 thousand tertiary educated Jamaicans living abroad in 2000 whereas Canada was the destination for 23 percent and the United Kingdom accounted for the remaining 7 percent. Furthermore, while the number of skilled workers in Jamaica increased by almost 90 percent between 1990 and 2000, indicating significant educational achievement, number of skilled migrants in the United States also increased by 90 percent. The parallel numbers were 46 and 82 percent for Canada and the United Kingdom, respectively. The more recent data for 2010 is not completely available yet since migration data come from the censuses of destination countries and 2010 round of census data have not been fully released. The latest available for the United States is based on the American Community Survey (ACS) which is designed as a "mini" census with a smaller sample. According to the 2008 ACS, there were 236 thousand Jamaicans with tertiary education in the United States which indicates only an 18 percent increase from 2000. This relatively slow increase is mostly likely due to the financial crisis and the resulting high unemployment levels which significantly weakened the pull factors that attracted millions of migrants annually to the United States in the preceding two decades.

4.49   **The raw numbers presented above, however, hide very important patterns which make the skilled migration levels and their relative impact on origin countries to be more severe than they actually might be**. A large number of Jamaicans migrate to the United States, Canada and the United Kingdom either as children with their parents or as students to complete their education. Figure 4.23 presents this pattern clearly using data from the latest American Community Survey (2009), which includes information on the country of birth, age, education and age of migration for all people sampled. The blue bar represents people who migrated as children (between ages 0-17), the red is for people who migrated during college years (between ages 18-22), the green bar is for people who migrated as young adults (ages 23-30) and the purple is for older migrants (age 31+). Looking at the people who only have primary school education, over 70 percent of them have migrated after age 31 and only 4 percent migrated as children. A lower but still a significant gap exists for people with only secondary education where 44 percent migrated after age 31 and another 21 percent between ages 23 and 30. On the

other hand, 44 percent of people with college or graduate degrees migrated as children and another 17 percent migrated during college years (ages 18 to 22). In other words, over 60 percent of tertiary educated Jamaican migrants in the United States actually obtained their tertiary education there, not in Jamaica. Assuming the same ratios apply to Jamaican migrants in Canada and the UK, only 114 thousand of the 287 thousand tertiary educated Jamaican migrants actually completed their tertiary education at home which means actual skilled migration rate falls down to a still high but less disastrous 35 percent. Similar ratios for upper middle income countries and countries with population between 2.5-10 million were 7.9 percent and 13.5 percent in 2000 respectively.

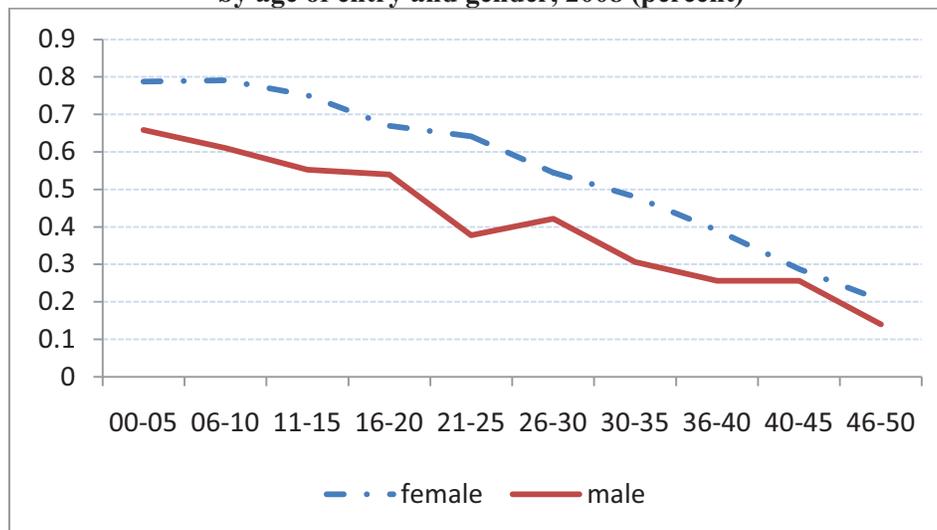**Figure 4.23: Age of Entry and Education levels for Jamaica Migrants**

4.50   **A different angle to observe this pattern is to look at the education levels of migrants by their age of migration**. Figure 4.24 presents the percentage of migrants with at least some college education by their age of migration. The top (dash) line is for female and the bottom line is for male migrants. It is clear that migrants who arrive in the United States are more likely to have obtained college education. For example, over 65 percent of male and 80 percent of female migrants who came before the age of 5 have some college education. The same ratios drop to 55 and 42 percent for female and male migrants respectively if they migrate after age 25. Of course, the other interesting observation is that Jamaican women in the United States are more educated than Jamaican men, regardless of their age of entry.

4.51   **The data indicates that a large number of Jamaicans who have tertiary education and who are living abroad did not complete their tertiary education in Jamaica.** The key question for policy debate is whether these people would have obtained tertiary education if they had stayed at home and how should they be treated in the "brain drain" debate. Given the constraints in education, it is probably safe to assume that a large portion of the skilled Jamaicans who obtained their education abroad would have the same opportunities if they stayed home. Actually, in migrant surveys, improving the opportunities for their children is among the most cited reasons of migration to Western countries. Even if it is assumed that some of these people would have obtained education if they had stayed, their absence means somebody else in

Jamaica is most likely to take their slot at the university. As a result, the fiscal and skill externality of people who complete their education abroad is likely to be more limited when compared to other migrants who move after the completion of their education.

Figure 4.24: Jamaican migrants (Age 18+) with some college education, by age of entry and gender, 2008 (percent)

4.52   **Jamaica faces the important challenge of low levels of human capital but how to retain educated people in the country is a complex problem**. The policy choices regarding tertiary-educated migration which can be divided along two main dimensions: First is what stage of a migrant's professional career should be targeted by the policies—before or after education is obtained? Second is who actually implements the policies—Jamaica or the destination countries such as the United States?

4.53   **The two key educational issues are tuition policies and the type of education offered**. In terms of tuition, a clear dilemma exists. Many technical professions (engineering, information technology) are keys to sustained growth and they also have become highly global in nature where the professionals can easily assimilate the labor markets in rich countries. Yet education in these areas is also the most costly. Requiring students to pay for a portion of the cost of their education is frequently recommended, especially on economic efficiency grounds (Clemens, 2008). On the other hand, these are the professions that generate highest social positive externalities so there is some economic rationale to subsidize such education. Furthermore, high tuition levels might limit the educational opportunities to the wealthy since most people might not have access to credit markets. One suggested solution is a two-tiered tuition system which means partial (or full) cost recovery for a portion of students and free tuition for the rest, where eligibility depends on academic merit, public service requirements, or both. Since a large portion of the economic gain from migration accrues to migrants and their families, a partial ex ante recovery of the cost of the education might be economically efficient. Another alternative is for governments to offer scholarships for poorer students which could substitute for direct public funding. High levels of skilled migration also influence the type of education provided by the government. A frequently suggested policy is to change the education mix—for example, by training physicians' assistants rather than physicians or health aides rather than nurses. However,

such policy suggestions are controversial and may have serious negative welfare implications, prompting an explicit trade-off between quantity and quality (Soucat and Scheffler, forthcoming). They should be simply based on the policies and needs of the country, not on their impact on skilled migration patterns.

4.54   **Other policy options exist but their effectiveness is questionable**. Public service requirements after graduation are among other popular policy options. However, they need to be properly designed as they might encourage immediate immigration or exodus from such occupations altogether if they become very onerous. Another popular alternative is to impose additional taxes/payments on migrants (generally referred to as the Bhagwati tax). Although such a practice sounds efficient and fair, in practice it is difficult to impose and enforce, because the cooperation of destination countries' government or courts may be needed (see Wilson 2009 for a detailed analysis). Another policy is to restrict travel, by refusing to issue passports or diplomas to students and recent graduates. These policies are not likely to be effective, especially for countries like Jamaica in close proximity to the US, and they violate basic principles of human rights.

4.55   **Brain drain is likely a consequence of low perceived career-development opportunities for highly educated individuals.** If the policy response is based on retaining individuals by making emigration more difficult, the result could be counterproductive because households and the school-age population will not factor in international labor market into their education decisions and therefore may have less incentive to acquire higher education.[84] If internal demand for highly skilled individuals were stronger, brain drain would be less of a problem. Therefore, a positive policy response would involve boosting demand for skills with career opportunities in Jamaica. Such policies would most likely increase productivity and foster growth.

4.56   **Enhancing career prospects in Jamaica for highly skilled individuals depends on factors that would improve the country's overall business environment and living conditions, such as reduced crime, and better health and education systems.** These goals mesh well with the government's general agenda, but even a piecemeal approach aimed specifically at the problem of emigration of highly skilled workers could complement such efforts and work toward the desired objective of greater retention of talented workers through the improvement of job opportunities.

4.57   **Some governments try to implement policies that encourage the return of professionals by helping returnees finding jobs and subsidizing housing or return expenses**.[85] There is no systematic evidence of the effectiveness of such policies. Thorn and Holm-Nielson (2008) find that although adequate pay is necessary, the primary determinants of decisions to return include the quality of the research environment, professional reward

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[84] See for example Stark et.al (1997) and Beine et. al. (2001).
[85] An example of a potentially beneficial program is the Return of Talent Program sponsored by the International Organization for Migration in Jamaica between 1994 and 1998. This program facilitated the return of 59 highly trained professionals to fill public-sector vacancies (see Thomas-Hope 2002). Although it attracted these highly educated individuals and retained them in the country, the program's scope was very limited and its development potential has not been assessed. The concept proposed here is to be long-lived and driven by private-sector demands, while government would serve as coordinator and provide adequate incentives for migrants' return.

structures, and access to state-of-the-art equipment. Financial incentives are also likely to create distortions, such as penalizing professionals who never migrated or subsidizing returnees who were planning to return even in the absence of the incentives. In addition, such policies may result in adverse selection, with the least skilled returning and the more skilled remaining abroad.

4.58 **To foster "brain circulation," projects may be directed toward making members of the diaspora invest directly in productive projects or act as entrepreneurs**. Such initiatives would encourage migrants to extend their contributions to economic development beyond sending remittances to their families. An example of this kind of stimulus exists with Indian migrants starting up firms and branches in their home country. These experiences have been labeled "brain circulation" because they depend on talent living abroad being able to carry out productive investment by taking advantage of knowledge and links they maintain with their home countries. In this sense, it is important that links between migrants and Jamaica be maintained, and the active involvement of diaspora organizations might achieve this objective.

G. CONCLUSIONS

4.59 **Jamaica is in the mid stage of demographic transition with positive impact on growth. However, a smaller share of the population actually works or actively seeks employment.** The decline in labor force participation could be explained by almost entirely with the sharp increase in inactivity among women. Nonetheless, compared to other LAC countries, Jamaica remains above average in female labor force participation. Between 1995 and 2008, the working-age population and employment increased, despite declining participation ratios, while the growth rate averaged 0.7 percent. This has implied stagnant labor productivity, with a sharp declining trend since 2002. Had Jamaica not benefitted from the demographic transition, growth would likely have been even slower.

4.60 **Jamaica's labor market regulations are sufficiently flexible and do not constrain labor productivity.** According to the 2010 Doing Business Report, Jamaica's employment regulations are generally flexible, and the country ranks 39th globally in ease of employing workers. In particular, it ranks among the top 10 in flexibility in three sub-components. However, the generous level of redundancy payments increases the costs of dismissals and negatively affects flexibility.

4.61 **Labor productivity has been declining since 1970s with the exception of few years and it remains law.** Jamaica's labor productivity has lagged most other countries. At sectoral level, labor productivity has grown in mining and manufacturing, while it has declined in construction and commerce. Meanwhile, employment composition has shifted from agriculture to service-oriented sectors, showing an inverse relationship with labor productivity. Real wages have largely followed the evolution of labor productivity at the aggregate and sectoral levels, except for 1985-2002.

4.62 **The findings of this chapter suggest that low level of educational attainments and labor force training are major constraints on realized labor productivity, while skills mismatch did not feature significantly in the observed productivity decline.** A large portion of the labor force in Jamaica has no formal training. In 1995, as much as 80 percent of the labor

force indicated that they had no training; by 2008, the share was still high at 72 percent. According to the 2006 World Bank Investment Climate Survey, a significant portion of Jamaican firms cite lack of skilled labor as a severe constraint for growth, although results should be taken with caution due to sample size. Available empirical studies also indicate that a lack of skills is a constraint on realized labor productivity. On the other hand, an examination of advertised vacancies and unemployment rates in Jamaica reveals relatively low and declining skills mismatch.

4.63   **An additional phenomenon that works against the labor market productivity is the high level of migration among the most skilled workers**. This puts additional pressure on the national educational system to produce enough skilled workers to compensate for losses due to emigration. Brain drain is likely a consequence of low perceived career-development opportunities for highly educated individuals. Enhancing career prospects in Jamaica for highly skilled individuals depends on factors that would improve the country's overall business environment and living conditions, such as reduced crime, and better health and education systems. The challenge is to turn the phenomenon of "brain drain" into a process of "brain circulation," where the highly skilled population living abroad is given the opportunities and the appropriate channels to engage in the country's development. To foster "brain circulation," projects may be directed toward making members of the diaspora invest directly in productive projects or act as entrepreneurs.

4.64   **Informal labor, although highly prevalent in Jamaica, has been declining in importance since 1990.** Despite this trend, some evidence points to a diverging distribution of wages between formal and informal labor. The informal sector is complex and it includes music & entertainment, one of the most dynamic and productive sector in Jamaica. Reducing the informal economy's size requires strengthening both the demand and supply for formal labor. Creating demand for labor in sectors that are more likely to engage in formal employment is important. For this purpose, a solid business climate that gives stability for investors is key. On the supply side, strengthening the labor force's skills component is an important step. Individuals with tertiary education are significantly less likely to work informally. International evidence also shows that technical and vocational education that trains workers in job-relevant skills improve the chances of finding jobs in the formal sector. A strategy that aims to improve the skills component of the labor force would likely help to improve labor productivity in the future.

4.65   **The skill formation and human capital challenges facing Jamaica have long been recognized but efforts need to be intensified.** Various institutional and policy initiatives have been implemented to address the human resources problem. A commission was established in 2003 to boost the performance of students at the early-childhood education level. In addition, Jamaica targets early childhood development through a conditional cash-transfer initiative (PATH). The Government has sought to reform the secondary-school system by improving teacher training and upgrading facilities and equipment, but the emigration of trained and experienced teachers and the high level of vacancies have hampered the reform process. The HEART Trust/NTA has been Jamaica's main agency providing technical and vocational training. An estimated 380,000 persons were trained by the agency between 1982 and 2008. However, these efforts have not been sufficient to close the existing skill gap. Therefore, the government will need to intensify its efforts to achieve concrete results in this area.

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CHAPTER 5. PUBLIC FINANCIAL MANAGEMENT AND GROWTH

The analysis in Part I and particularly the growth diagnostics analysis in chapter 3 show that tax distortions could be binding constraint to growth in Jamaica as they distorts capital accumulation and encourage an "enclave" development pattern with little spillovers to the rest of the economy. Other weaknesses in fiscal management can magnify these effects. This chapter analyzes public financial management in Jamaica with the objective of identifying policy and institutional weaknesses that create fiscal distortions, hampering growth in Jamaica. The analyses indicate that several fundamental issues continue to affect fiscal performance and growth. The weak link between government priorities, planning, and budget, the lack of effective in-year expenditure controls, and the lack of comprehensive financial statements contribute to inefficient monitoring of public spending. Debt management is still plagued by substantial weaknesses. Highly complicated tax policy and incentives create distortions for resource allocation and contribute to the Jamaica's consistent low growth rates. Underlying institutional and political economy factors also produce significant impediments.

A. INTRODUCTION

5.1 **This chapter focuses public financial management in Jamaica with the objective of identifying policy and institutional weaknesses that create fiscal distortions hampering growth in Jamaica**. Jamaica's fiscal policies and budget-management practices have always been major challenges to the countries development. High debt-servicing costs and a high wage bill have reduced the fiscal space available for productive government spending.[86] Inconsistent and complex tax policy with numerous exemptions and special privileges not only reduce government revenues but also create distortions for the allocation of capital and lowers investment productivity. The analysis in Part I and particularly the growth diagnostics analysis in chapter 3 show that tax distortions could be binding constraint to growth in Jamaica as they distorts capital accumulation and encourage an "enclave" development pattern with little spillovers to the rest of the economy. The adverse effects on economic growth are magnified by other weaknesses in fiscal management, such as weak legislative and institutional structure for debt management, inefficient public investment, weak link between government priorities, planning, and budget, the lack of in-year expenditure controls, and the lack of accurate financial statements. While the government has made progress in strengthening the management of public finances, current practices and processes limit the government's ability to strengthen its fiscal position.

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[86] Debt servicing costs increased from 12.2 percent of GDP in FY2008/09 to 16.0 percent of GDP in FY2009/10. Similarly, the wage bill increased from 10.8 percent of GDP in FY2008/09 to 11.8 percent of GDP in FY2009/10. To partly offset these increases, Jamaica's government had to reduce capital spending from 4 percent in FY2008/09 to 3.3 percent in FY2009/10. [Source: World Bank, 2010]

5.2   **Underlying institutional and political economy factors are significant impediments for strengthening public financial management.** Institutionally, existing rules and organizational structures have not supported the required consolidation. From a political economy perspective, the relatively sharp division of the country into opposing political camps has often made it difficult to reach a national consensus and make binding commitments. Moreover, Jamaica is grappling with an implicit social contract that includes a significant role for organized crime in the economy and society.[87] This is eroding the legitimacy of the state and undermining the degree to which formal rules are regarded as binding, which affects such fiscal issues as revenue collection and expenditure management. Moreover, organized crime and high crime rates draw political attention to security issues, require significant spending and limit space available for other expenditures, and divert political attention to security issues at the expense of pressing needs for fiscal consolidation and public-sector actions that support growth.

5.3   **This chapter analyzes key public financial management practices that exacerbate fiscal weaknesses and contribute to low growth.** Overall, the chapter looks at the institutional structures, public financial management practices and processes, and political dynamics that underlie the financial management process that affects fiscal balances and economic growth. The chapter includes sequenced policy recommendations to strengthen fiscal management in Jamaica. Section B provides a brief context to public sector and fiscal management in Jamaica. Section C analyzes the key constraints in Jamaica's fiscal management that contribute to low growth. Section D analyzes the wider institutional and political economy underpinnings of fiscal policy choices in Jamaica. Section E offers concluding remarks with a matrix of recommendations.

B. PUBLIC SECTOR AND FISCAL MANAGEMENT: THE CONTEXT

5.4   **Jamaica's economic performance has been severely constrained by unsustainable fiscal balances.** The country's fiscal situation is characterized by consecutive years of high primary surpluses at the central government level which are insufficient to bring down the large overall deficits created by interest payments. The fiscal situation got worse when public bodies are taken into account. In FY2007/08, the primary surplus of the central government stood at 6.8 percent of GDP, while the overall central government deficit amounted to almost 6 percent of GDP. In addition, public bodies had a primary deficit of 2.5 percent of GDP and an overall deficit of 4.2 percent in FY2007/08 (see table 5.1). Consequently, the aggregate public sector deficit amounted to 10.1 percent of GDP in this period.

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[87] The latter issues go beyond the scope of this chapter and will not be explored here; but they are widely acknowledged as part of the challenge of transforming Jamaica, linked with the challenges of fiscal consolidation and growth.
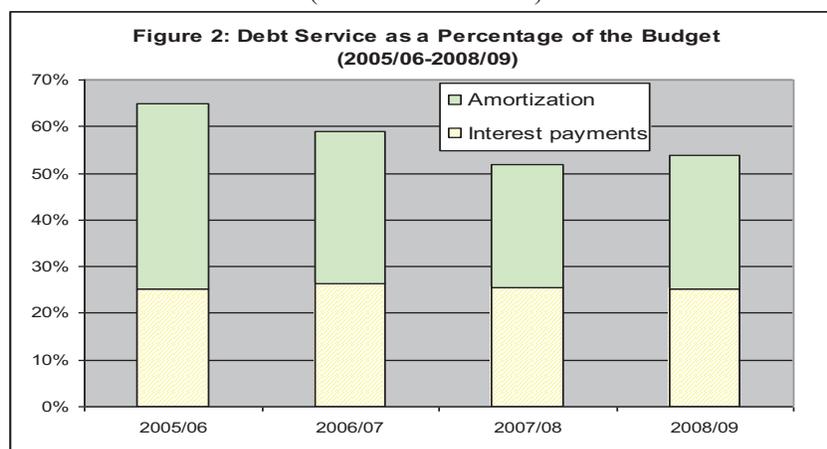
Table 5.1: Jamaica's Fiscal Sector for Central Government and Public Bodies

	2006/07	2007/08	2008/09	2009/10	2010/11
Fiscal Sector					
Central Government (as GDP %)					
Revenues	29.3	30.9	29.6	29.5	30.7
Expenditures	35.1	36.7	35.4	34.9	35.2
Primary Balance	8.1	6.8	7.4	7	7.4
Overall Balance	-5.8	-5.9	-5.8	-5.5	-4.6
Public Bodies (as GDP%)					
Revenues	31.3	32.2	18.3	18.5	18.5
Expenditures	34.1	36.4	23.1	22.7	22.6
Primary Balance	-1.2	-2.5	-3.1	-2.3	-2.2
Overall Balance	-2.8	-4.2	-4.8	-4.2	-4.1
Public Sector Deficit (as GDP%)	-8.5	-10.1	-10.6	-9.7	-8.7

Source: MFPS Website

5.5 **A very high debt-to-GDP ratio and the resulting large interest expenditures are creating risks to macroeconomic stability.** Jamaica has a long history of high public debt due to chronic public deficits, weak budget coverage, and contingent liabilities arising from a large number of weakly regulated public bodies. The increase in debt has also been influenced by frequent policy swings—the reforms and counter-reforms of the 1970s and 1980s, the financial crisis of the mid-1990s (see chapters 1 and 3). The high level of debt also means that a large portion of government revenue is used up paying interest on the existing debt stock. The interest expenditures represented close to 25 percent of the budget in FY2008/09. Total debt service, including principal amortizations, was about 54 percent of budget expenditures (see Figure 5.1).

Figure 5.1: Debt Service as a Share of the Budget
(FY2005/06-2008/09)

Source: Various Budget Memorandums. Ministry of Finance and the Public Services.
Note: Debt service includes payments of both interest and principal.

5.6 **The government of Jamaica (GOJ) has started to make significant efforts in strengthening fiscal management, adopting a set of measures on fiscal responsibility, tax administration, public investment management, and public-body rationalization.** The GOJ

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has enacted amendments to the Financial Administration and Audit Act (FAA) and the Public Bodies Management and Accountability Act (PBMA) that seek to promote fiscal responsibility by stipulating greater transparency, more stringent rules about borrowing authorization for public bodies, and setting deficit and debt targets to be achieved by 2016. GOJ is in the process of restructuring the Tax Administration and is taking steps to ease paying taxes.[88] The government is also introducing medium term budgeting and a new methodology for evaluating and prioritizing public investment. The Ministry of Finance and the Public Service (MFPS) has made efforts to train public bodies for expanding the coverage of fiscal reports. The rationalization of public bodies is also continuing, although progress has been slow.[89] Furthermore, lead by Public Sector Transformation Unit (PSTU), the GOJ has been developing significant reforms of its public-sector institutions.

C. STRUCTURAL WEAKNESSES AND STRENGTHENING FISCAL MANAGEMENT

5.7 **Past efforts for fiscal consolidation have only partly succeeded because of structural weaknesses inherent in public financial management policies and processes and the underlying political dynamics of the budget process.** The key structural weaknesses that have played a significant role in Jamaica's debt build-up and creating a fiscal environment not conducive to growth can be consolidated into five main areas: (i) weak institutional structure; (ii) ineffective fiscal policy (or central government revenue and expenditure policies such as tax policy, wages, and public investment allocation); (iii) inefficient budgeting processes, including insufficient control over public expenditure and public investment planning process; (iv) ineffective debt management practices and debt build-up; and (v) the weak management of public bodies. Each of these issues is discussed in detail below.

C1. Institutions[90]

5.8 **Fiscal management in Jamaica is guided by a set of rules that does not support a strategic approach necessary to address existing challenges.** Budgeting and budget execution in Jamaica is directly governed by the Constitution—chapter 6, articles 114-122—and by the FAA, originally adopted in 1959. The process of parliamentary budget approval is governed by the Standing Orders of the House—the section on Financial Procedure, articles 65-67. Other acts, such as the PBMA, are indirectly relevant because they affect government fiscal liabilities. This

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[88] World Bank, 2010 (DPL)

[89] There were approximately 200 public bodies registered with the Public Enterprise Division (PED) of the MoPS at the end of FY2008/09. The rationalization plan developed in 2008/09 identified 74 inactive public bodies that were candidates for being shut down, plus another 35 public bodies to be merged and 21 to be privatized. A December 2009 Cabinet note reported the progress to date on the 74 public bodies identified as inactive—20 have actually been closed, 11 will not be shut down because they are either still active or the process has been terminated or suspended, three are slated for divestment, and two are unknown and may not be public bodies. Of the remaining 38 inactive public bodies, six are nearly completed, with facilitating documents already filed with the Companies Office of Jamaica. The status of one entity is "uncertain," while the winding up of 31 entities is at various stages in the process. Of the 35 entities to be merged, the regulatory functions of three bodies have been proposed for merging: the Port Authority of Jamaica, Airports Authority of Jamaica, and the Maritime Authority of Jamaica. As part of its rationalization program, the government privatized six publicly-owned sugar estates, Air Jamaica and Hotel Pegasus. Other government assets are also in the privatization process.

[90] This section explores key issues that are relevant in the context of this CEM. Future Public Expenditure Reviews by the World Bank is expected to explore the institutional dimensions of PFM in greater depth.

existing legislation is largely silent on budget preparation and on principles for fiscal management. The FAA does not contain any specific guidance on budget preparation. It defines the Consolidated Fund (CF) as the core budget and provides detailed rules for the management of accounts, for the authorization of withdrawals from the CF, and for loans and advances. It also covers the role of the auditor-general. However, no provisions cover principles and processes for budget preparation or execution with a view toward achieving good performance of the public sector and maintaining fiscal sustainability. Newly introduced amendments are designed to rectify some of these shortcomings.

5.9 **Existing legislation promotes treating a large share of expenditures as fixed.** The Constitution contains key provisions regarding expenditures that are considered "statutory" (article 116), including debt-service payments and any payments required by law (although the latter restriction has some lee-way because many laws do not specify exact spending amounts). An advantage of the constitutional provision is that it promotes a perception of strong debt-servicing commitment. A disadvantage has been the fact that large shares of spending are treated as fixed rather than as subject to review and debate about key priorities.

5.10 **Budget planning is fragmented, especially for capital expenditures**. Jamaica has a separate Planning Institute (PIOJ), located under the Office of the Prime Minister. The PIOJ is directly involved in public investment projects funded from resources provided by development partners. In FY2009/10, about half of all capital expenditures were funded from bilateral and multilateral sources.[91] In contrast, MFPS takes a leading role for domestically funded projects, and PIOJ is not actively involved. Ongoing efforts seek to enhance investment planning and introduce more rigorous project appraisal and rating processes. Making such a system operational will also require agreeing on the respective roles of MFPS, PIOJ, and line ministries in assessing public-investment proposals. Moreover, investments undertaken by self-financing public bodies are currently not part of government-wide discussions about priorities in terms of growth-promoting public investments.

5.11 **Jamaica's legal rules and actual practices have not promoted effective tracking of the government's overall fiscal stance**. Public bodies have been allowed to operate with implicit or explicit government guarantees, but prior to the recent fiscal-responsibility amendments, there was no requirement to make the resulting fiscal liabilities explicit in budget deliberations. Given that legal rules are not explicit in this regard, the MFPS has not been effective at collecting and analyzing the range of information needed to generate an overview of wider fiscal liabilities and risks.

5.12 **Budget preparation and important aspects of the linkages between adopted budget plans and budget execution are governed by secondary regulation**. The planning and management of public investments is not addressed in the FAA or other legislation. The FAA does not provide clear guidance on institutional rules and roles for budget development aimed at delivering policy programs or supporting overall budget credibility and sustainability. The specific guidance for annual budgets is set out in the budget calls issued by MFPS in September or October each year.

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[91] Based on the FY2009/10 Appropriation Act as passed by Parliament.

Table 5.2: Supplementary Budget Approvals and Dates 2000-10

Budget year	First supplementary budget	Second supplementary budget
2000/2001	03/13/2001	--
2001/2002	02/05/2002	03/18/2002
2002/2003	12/10/2002	03/18/2003
2003/2004	03/02/2004	--
2004/2005	12/07/2004	03/15/2005
2005/2006	03/07/2006	--
2006/2007	02/27/2007	--
2007/2008	11/27/2007	03/18/2008
2008/2009	01/27/2009	--
2009/2010	09/22/2009	03/16/2010

Note: date format is mm/dd/year

5.13 **In recent years, supplemental budgets have been adopted at least once and in some cases twice a year: however, existing rules did not encourage sufficient scrutiny of what changes are being made and why**. In general, parliament's role in reviewing the budget is limited (see sub-section C3 below). Members of Parliament (MPs) have to review the budget without any specialized staff to support them (other than staff at the disposal of MPs who hold cabinet positions).[92] Approval of supplementary budgets occurs near the end of the fiscal year— *after* decisions on administrative transfers have been made (see table 5.2). Furthermore, the information compiled and presented is incomplete in important respects, and it was subject to very little review, probing, or debate.

5.14 **Recently, the GOJ has adopted a Fiscal Responsibility Framework (FRF)**. The FAA and PBMA have recently been amended with a view to introduce FRF. The legislative changes include specific fiscal targets as well as provisions intended to strengthen MFPS control over expenditures and any lending. In addition, the changes add measures to strengthen transparency by requiring the GOJ to provide an overarching and detailed picture of the country's fiscal stance and challenges to Parliament. In contrast to Brazil and other countries that have introduced fiscal-responsibility legislation, Jamaica has decided to adopt selected amendments to existing legislation rather than a free-standing law. The amendments focus on making authorization for borrowing by public bodies more stringent and defining specific fiscal goals through 2016.[93] The government is working on a new draft debt-management bill to strengthen the institutional and legislative structures for debt management, including government guarantees and contingent liabilities. Fiscal-responsibility rules are essentially self-policing in the sense that their enforcement depends on elected officials who in principle retain the power to suspend these same rules (see von Hagen, 2005). Overall, the enhanced stringency on fiscal consolidation rests with the MFPS without clear reinforcing responsibilities assigned to the prime minister, Cabinet, or Parliament. The government is drafting new amendments to further strengthen enforcement of the FRF.

C2. Fiscal policy

5.15 **Sound fiscal policy can influence the working of the economic system to maximize economic welfare.** The proper framework requires: (i) formulating a fiscal plan to determine policies, objectives, and resources needed; (ii) formulating a budget that provides the operational

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[92] The best-known example of specialized staff supporting budget review is the US Congressional Budget Office, which was created in 1974 and currently has a staff of 235. A majority of countries reviewed by Wehner (2006) did not have specialized staff supporting parliamentary budget review; however, countries that are noted for good public fiscal management practices, such as Chile, South Korea, Indonesia and Mexico, have such support functions.
[93] See also IMF (2010).

legal framework to determine the allocation of resources to meet the policy objectives; and (iii) implementing the budget with assurances that specific tasks are carried out economically, efficiently, and effectively. Fiscal policy also determines the availability of budgetary resources for growth-enhancing investment that does not jeopardize the sustainability of the government's financial position or the stability of the economy.

5.16   **Key components of Jamaica's fiscal policy that adversely impact the government's fiscal position and growth include tax policy, the public wage bill, and public investment planning and prioritization.** Despite ongoing reforms, tax policy is burdened with inefficiencies and inconsistencies. The central government's wage bill increased significantly in recent years and absorbed a considerable amount of budgetary resources. Public investment planning is skewed toward non-productive projects and characterized by inefficient allocation of scarce resources. The technical issues are well known and are briefly discussed below as background for the political economy analysis in Section D.

5.17   **Fiscal-policy issues are inherently very political, especially when they relate to taxes, wages and salaries, and allocation of resources for public investments.** In Jamaica, the political economy dynamics underlying fiscal policy have a significant impact on the determination of fiscal policy, growth, and debt build-up.

Tax Policy and incentives

5.18   **Jamaica has highly complex and variable rates with many exemptions and special regimes.** Major taxes include a 33.33 percent corporate income tax rate; a 4 percent property transfer tax; a 3 percent stamp duty; varying special consumption tax (SCT) rates on cigarettes, petrol, and alcohol, etc; and the general consumption tax (GCT). The GCT rate structure includes: the standard 17.5 percent (also applied to motor vehicles in addition to an SCT rate tied to the vehicle's engine size), 25 percent on telephone services (such as telephone calls, importation and sale of telephone instruments, and telephone cards), 10 percent on the tourism sector, 10 percent on the supply of electricity to residential and commercial/industrial customers, and 22.5 percent on commercial imports. Capital goods are exempt from the 22.5 percent GCT at the ports as well as goods imported under the Deferment Scheme pursuant to Section 42 of the GCT Act. The SCT on beverages with alcohol by volume (ABV) between 6 percent and 57.1 percent harmonized at 25 percent ad valorem; SCT on spirits in excess of 57.1 percent ABV is 30 percent ad valorem; the SCT on wines, cordials and liqueurs with ABV between 10 percent and 15 percent is US$0.40 per litre. The SCT on cigarettes is $10,500 per 1,000 sticks. The SCT on fuel was reintroduced at a rate of 15 percent (this was frozen since 1999); specific SCT on gasoline is $16.1061 per litre for 87 octane and $16.4792 for 97 octane. Property-tax revenue goes to local governments rather than the Consolidated Fund. Effective April 1, 2010, property-tax rates were increased. The flat rate, applicable to property with unimproved value up to J$300,000, rose from J$600 to J$1,000. For property with unimproved value exceeding J$300,000, the rate is now 0.75 percent for every additional dollar, up from 0.5 percent.

5.19   **Despite the tax-structure reforms undertaken in the past few years, Jamaica's tax system remains complicated, with many deductions and exemptions.** Reforms include increasing uniformity of indirect tax rates, including conversion of some GCT zero-rating into

exemptions in 2006, and making custom duty rates more uniform and reducing the number of exemptions. This would eliminate the MFPS' authority to make ad hoc exemptions. The government increased rates (and fees) on tobacco, guns, and cars in 2008, which has raised revenue and addresses some the social costs of these activities. Nonetheless, numerous tax brackets, concessions, and tax waivers continue to be disincentives to taxpayer compliance. SCT and GCT structures are complex.

5.20　**There are large numbers of incentives and waivers given either by law or by Minister on a discretionary basis, leading to a complex and distortionary tax structure.** Jamaican government offers waivers and incentives for a large group of activities and purposes, including charitable organizations, promotion of domestic manufacturing, investment in tourism and other industries and certain public goods. The current system of waivers and incentives has two distinctive aspects: (i) nearly every economic activity gets one or more types of waivers/incentives; (ii) a significant portion of these waivers and incentives are discretionary. Table 5.3 lists incentives given by statue or law and waivers and discretionary incentives. Waivers granted on a discretionary basis, speaks to those that are not instituted by law but rather determined on a case by case basis utilizing the power of the Minister in the remission of part or whole of taxation as pursuant to the tax Acts listed in table 5.3. A detailed explanation of the type incentives/waivers and the benefiting sectors are provided in annex 8.

Table 5.3: Supplemental Budget Amounts and Frequency

Waiver and Discretionary Incentives	Incentives/ Remission of Taxes Given by Statute or Law
1. Customs Duty – Sec. 11	1. Bauxite and Alumina Industries (Encouragement) Act
2. Education Tax – Sec. 10	2. Export Industry Encouragement Act
3. General Consumption Tax Act – Sec. 47	3. Foreign Sales Corporation Act
4. Human Employment and Resource Training – Sec. 16	4. Hotel Incentives Act
5. Income Tax Act – Sec. 86	5. Industrial Incentive (Factory Construction)
6. Property Tax – Sec. 11	6. Industrial Incentives Act
7. Stamp Duty – Sec. 80B	7. International Finance Companies (Income Tax Relief)
8. Transfer Tax – 46	8. International Finance Corporation Agreement Act
9. Travel Tax – Sec. 4	9. Jamaica Export Free Zones Act
	10. Petroleum Refining Industry (Encouragement) Act
-----------------	11. Resort Cottages Act
Discretionary considerations given to additional	12. Shipping Incentives Act
incentive like regimes such as the	13. The Motion Picture Industry (Encouragement) Act
1. UDrive/Jamaica Rent-A-Car Association Car	14. Urban Renewal Act
Concession. Utilized Minister's discretion under both	
the Customs Act and General Consumption Tax Act.	-------------
2. Tourism subsector – Ground transportation	1. Approved Venture Capital
particularly for tour operators	2. Approved Agricultural Activity
3. Application for motor vehicle policy to encourage	3. Attractions Incentive
importation of hybrid and/or flex fuel vehicles.	4. Modernization of Industry

Source: Ministry of Finance and the Public Service

5.21　**The current complex system of waivers and incentives weakens the government's ability of collecting taxes and undermines accountability and governance in public sector.** The exact amount of forgone revenue is not known but it is estimated to be very high. Administrative costs to the government in the granting of the large number of exemptions are also significant. The current system introduces complexity in administration and increases the

possibilities for rent seeking and non-compliance. There is no centralized management system and uniform guidelines do not exist. The existing regime is open to serious accountability risks. Many of the waivers and incentives in Jamaica are open-ended and vague. There is wide ministerial discretion in granting waivers and exemptions.

5.22   **Complicated tax policy and resulting low tax collections create distortions for resource allocation and contribute to the Jamaica's consistent low growth rates in at least three important ways**. First, an inefficient tax structure affects tax revenues, increasing deficits and reducing the fiscal space for productive public investments that would boost growth. The country's complex tax structure, with its numerous exemptions and special regimes, has reduced tax revenue by an estimated 20 percent.[94] Second, the high transaction costs of paying taxes adversely impact revenue collection, further adding to deficits and reducing growth-enhancing public investments. The costs include complex tax structure with numerous exemptions and barriers faced by tax administrators in getting information and pressing enforcement. In particular, this seems to affect small businesses (discussed in detail in the chapter 7 of this report). Third, the complex tax and incentives system creates distortions in allocation of capital and decrease the productivity of investment, lowering the potential growth of the Jamaican economy (see chapter 3, Section C2 for a detailed discussion).

5.23   **Jamaica's challenge is designing and implementing significant tax reform in an environment of fiscal stress**. Key issues are simplifying and broadening the tax structures, reducing the bureaucracy and number of tax payments that serve to make it difficult for those who are willing to pay taxes. Any combination of lowering tax rates and broadening the tax base has to include a very tight commitment to quick success on the latter to avoid even temporary revenue shortfalls. Jamaica made an attempt to reform its tax system in 2004. At the time, the Tax Policy Review Committee undertook a major review that set out a number of weaknesses and inequities. However, this review's recommendations have largely remained unimplemented. Jamaica would significantly benefit from reforming its waivers and incentives regime with the objective of removing all discretionary exemptions. The first step would be to determine the scope and fiscal cost of extensive range of waivers, exemptions and incentives. The objective should be narrowing the scope and reducing forgone revenues. The guidelines for granting any waivers and incentives should be transparent and uniform. There should be regular reporting and monitoring systems to inform policy decisions regarding fiscal cost of waivers and incentives and their success in achieving the targeted groups and activities.

5.24   **Several changes to the tax system were introduced in late 2009 to meet the IMF program's requirements but increasing revenues purely through raising taxes is problematic.**[95] While necessary to avert a fiscal crisis, changes that seek to increase revenue purely through raising tax rates are problematic. They leave underlying problems untouched— for example, high rates of informality and the presence of too many exemptions—and they potentially increase perceptions of unfairness by compliant tax payers. In particular, efforts to eliminate a variety of GCT exemptions were met with sharp criticism, especially from unions

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[94] *Source:* Holden & Holden (2005)
[95] The revisions included increasing the GCT from 16.5 percent to 17.5 percent, changing the SCT on petroleum, introducing advance GCT payments of 5 percent on imports, and increasing the GCT on tourism activities from 8.25 percent to 10 percent. These changes were aimed at raising an additional J$21.8bn in FY2010/11.

which argued that the GCT is in principal regressive and that eliminating exemptions would be unacceptable as long as inequities regarding personal income taxation were not addressed. The changes were revoked within a week of their announcement.[96] The government then opted to raise the standard GCT rate. Union representatives have argued that unionized labor (mostly those employed in the public sector) is the main group contributing personal income taxes under the pay-as-you-earn—PAYE—withholding system, with very few other contributors.[97] Many middle class professionals are reportedly not paying personal income taxes.

5.25   **On the other hand, many areas of the economy have enjoyed various incentive schemes**. This practice has created vested interests that lobby to maintain their specific exemptions. To various degrees, groups can threaten to leave Jamaica's jurisdiction (e.g. move to other Caribbean islands) if tax incentives are revoked. In the package announced in December 2009, the most important tax measures affecting businesses include increasing the GCT rate for tourism related activities from 8.25 percent to 10 percent, imposing advance GCT payments of an additional 5 percent on imports, and introducing an ad valorem SCT on petroleum products.[98] Organized business groups were initially relatively supportive of the tax package, seeing it as inevitable for obtaining IMF support and avoiding worse outcomes.[99] However, discontent about the tax system's overall unfairness has been voiced more strongly over the course of 2010.[100] For businesses, the strained fiscal situation increases the risk that new tax measures will be introduced on short notice, repeating what happened in late 2009, when several changes entered into force almost immediately.

Wage Bill

5.26   **Public-sector employment and the resulting wage bill has been a source of fiscal pressure.** Since the mid-1990s, the public-sector wage bill has fluctuated between 10 percent and 12.5 percent of GDP (World Bank, 2008: 25). In the 2000s, the government has sought to contain the fiscal pressure from the wage bill and impose better overall management of the public-sector workforce. To this end, it has signed several memoranda of understanding (MUs) with public-sector unions. While this process was partly successful, it failed to cover all public-sector workers. Furthermore, it has been difficult for both sides to arrive at credible agreements, given an environment marked by considerable uncertainty resulting from double-digit inflation in the 2000s. Thus, significant wage increases occurred once the MUs expired. Moreover, efficiency gains in the public sector have not been realized.

5.27   **GOJ is among the country's largest employers, with nearly 120,000 workers, or about 4.5 percent of the population.** Teachers and school support staff represent about a third of the total public-sector workforce, followed by central government administrative employees (18 percent) and employees from statutory bodies (15 percent). The number of established positions within the central government has remained relatively constant. Permanent civil service

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[96] See: http://www.reuters.com/article/idUSN2418272520091224.
[97] Apart from those covered under the PAYE system, only 4,000 individuals paid personal income tax in Jamaica in FY2008/09 (based on the 2008 budget presentation).
http://www.jamaica-gleaner.com/gleaner/20090202/lead/lead3.html.
[98] PriceWaterhouseCoopers (2009).
[99] The PSOJ is currently headed by Joseph Matalon, the former Chairman of the Tax Policy Review Committee,.
[100] See, for example: Jamaica Gleaner "Tax system stifling private sector – PSOJ" June 27, 2010.

posts, authorized by the Civil Service Establishment Act, have remained close to 41,000 for the past five years.

5.28   **This increase in the wage bill in recent years was partly due to salary increases negotiated with more than 50 bargaining units of public-sector employees.** There have been several attempts at establishing a "social partnership" in Jamaica, including efforts at restraining public-sector wages. Since 2004, the GOJ has signed three biennial MOUs with public-sector unions and staff associations, some of which are organized under the Joint Confederation of Trade Unions. When the second MU became due in 2006, however, the original agreement—to a wage freeze in return for employment guarantees—was abandoned and wages were significantly increased. In the third and latest MU, the agreed wage increases were 15 percent in the first year and 7 percent in the second, but the year-two increases have not been implemented due to the government's fiscal challenges. The government is currently implementing a wage freeze until 2013.

5.29   **Over the past decade, social partnerships and collective bargaining for public-sector wages have had limited traction due to the politicization of key unions and the fragmentation of unions and staff associations.** Public sector wage negotiations take place between the Jamaican Confederation of Trade Unions (JCTU) and the government. There have been no tripartite agreements that would have included the private sector. Importantly, Jamaica's main trade unions—the Bustamante Industrial Trade Union and the National Workers' Union—have close links with the country's main political parties. This creates an incentive for the trade unions not aligned with the current government to oppose agreements on wage restraint. Furthermore, 52 unions and staff associations operate in the public sector, but only 13 are formally part of the JCTU. This umbrella group invites other staff associations to participate in discussions for MUs. However, this fragmentation of public sector workers entails numerous special groupings that have repeatedly decided to opt out of or defect from wider agreements.

5.30   **Given a low-growth environment that has limited private-sector job growth, stakeholders have been keen on maintaining significant levels of public-sector employment**. Unions have been unwilling to agree to retrenchment programs. Successive governments have been reluctant to insist on such a policy, while also being concerned about the potential up-front costs of severance payments involved in such a move. However, experience over the past several years indicates that simple wage freezes are easy to reverse, and periods of wage restraint have been followed by instances of wage jumps. Formal or informal wage freezes have been agreed upon during periods of acute fiscal stress and to win new confidence from creditors, but they have been reversed as imminent fiscal stress receded.
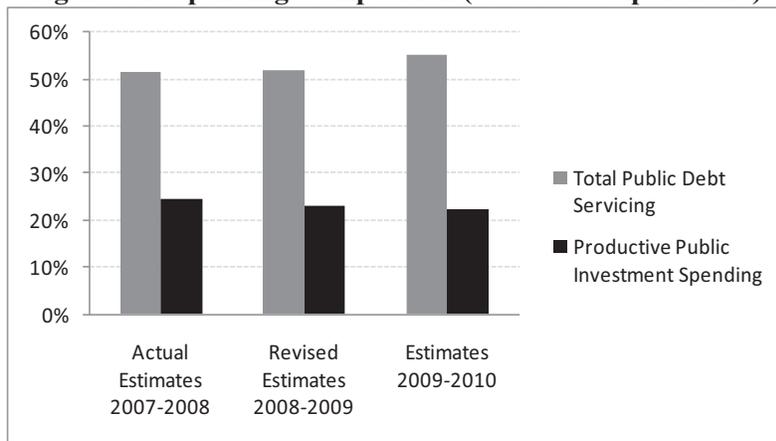
Public Investment Allocation Policy

5.31   **The public investment planning process is neither strategic nor comprehensive.** Public investment planning is fairly fragmented, with the MFPS and sector ministries focusing on GOJ-funded projects and the PIOJ focusing on donor-funded projects. Public investment undertaken by public bodies, discussed later in this chapter, is not included in the overall public investment plan. Within the budget, public investment planning is not conducted as a true top-

down and bottom-up, economic needs assessment basis. Instead, it is more of a laundry list of projects that includes a fair amount of top-down cuts and cherry-picked projects.

5.32   **Planning and management processes for public investments are not specified in legislation**. Neither the FAA, nor the constitutional provisions pertaining to the budget, nor the section on financial procedure in the Standing Orders of the House provide any specific guidance regarding decisions on capital expenditures. Furthermore, a significant share of what would broadly be considered public investment is carried out by public bodies. The law on public bodies does not explicitly address investment decisions, while provisions covering borrowing powers and corporate plans bear indirect relevance.

Figure 5.2: Spending Composition (% of total expenditure)

Source: Data from MFPS

5.33   **Government's productive spending is limited by its fiscal space.** Debt-service costs and wages and salaries are large non-discretionary components of government's expenditures. The FY2009/10 budget dedicates 55.35 percent of expenditures to interest payments on outstanding government debt and 22.5 percent to civil servants' wages and salaries, while productive investment on health, education, agriculture, tourism, roads and mining averaged about 23 percent during the same period (see figure 5.2). Two issues plague the management of the limited space available for public investment: (i) a lack of comprehensive and reliable public investment planning; and (ii) a skewing of public investment toward non-productive investments.

5.34   **Current public investment composition may be inefficiently skewed towards non-productive projects that contribute to low economic growth rates.** With an active history of natural disasters, the capital investment budget is often diverted towards post-hurricane reconstruction—for example, in 2004 and 2005. This further reduces the money available for productive capital investments. Within the available fiscal space, there has been an increase in spending for social services, such as overinvestment in development of housing and residential buildings—for instance, in FY2009/10.

5.35   **Like overall strategic planning for public investment, the planning process for individual projects is weak, contributing to cost overruns and increasing deficits and liabilities.** The quality of technical preparation work varies across projects funded by the GOJ, donors, and public bodies. In general, projects prepared by public bodies and some of those prepared by donors are supported by stronger analysis. For GOJ-funded projects, variations in project analysis, preparation, and feasibility lead to inefficiencies in project design and in the allocation of scare budgetary resources. For example, the South-West Highway project planning

and preparation lacked the necessary geologic assessments and traffic-flow projections. This led to cost overruns, and construction of a four-lane highway with a much higher capacity than necessary. Better traffic-flow estimation would have affected the design and freed scarce resources for other priority projects.

5.36 **Systems are weak for ensuring that public investment allocations are clearly prioritized and aligned with strategic development plans, either national or sectoral.** The PIOJ is the main government body responsible for the overarching national Vision 2030 plan; however, it is not directly involved in the review of investment proposals funded from domestic resources.[101] In recent budget circulars, the MFPS has called for line ministries to stringently prioritize capital projects because of the scarcity of fiscal resources available for non-debt-service expenditures. However, the MFPS' indication of prioritization does not emphasize a programmatically focused prioritization (see also Ortegon and Dorado, 2006). Rather, it indicates as priorities ongoing projects and the level of available foreign funding, as well as respective ministry's project readiness and implementation capacity.[102] Recent budget calls have not specified ceilings for capital expenditures (e.g. by sector or ministry/agency). Efforts to develop a system for assessing investment projects have been started, but they have not yet come to fruition. The hope is that a system of clear guidelines and criteria for scoring projects will contribute to a more strategic approach to public investments, reducing opportunities for ad hoc inclusion of proposals.

5.37 **An important political economy consideration affecting public investment decisions is housing benefits**. They appear to be allocated to particular areas and constituencies, and they are regarded as help in securing a constituency for one party or another. The importance of these benefits is also reflected in the fact that at least three public bodies deal with housing: the National Housing Trust, the Urban Development Corporation (both under the Prime Minister), and the National Housing Development Corporation (under the Ministry of Works and Transport). Housing is a classic "pork barrel"-type expenditure that benefits specific individuals and families as well as specific localities.[103] Jamaica also has Constituency Development Funds (CDF) that are allocated to each MP. Recently, CDF resources have amounted to about 3 percent of total capital expenditures and 6 percent of domestically funded public investments.[104]

5.38 **Public investment execution has also been an area of some concern.** This includes questions about the allocation of government contracts to politically connected firms; among them, some alleged to have shareholders belonging to criminal gangs.[105] Such a mix of licit and

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[101] Capital expenditures are planned as part A (domestically funded) and part B (externally funded and domestic co-financing). In FY2008/09, part B accounted for close to 40 percent of all capital spending, with the foreign-funded portion accounting for 25 percent of total (A+B) capital spending. Recent budget calls have not emphasized a programmatic prioritization (and integration of parts A and B), but they have stated that projects will be prioritized based on the level of foreign funding and whether the funds are grants or loan. Expenditures classified as capital include maintenance and repairs spending. They also include a variety of programs and projects. Broader and more in-depth issues of public investment management cannot be explored here, but they would merit further exploration in an upcoming PEIR or similar analytic exercise.

[102] See MFPS: Budget Call – 2007/2008 Budget; and MFPS: Budget Call – 2010/2011 Budget.

[103] A recent commentator writing in the *Gleaner* referred to the "vote-securing muscle" of ministry budgets.

[104] [JMD 20m per MP = JMD 1.2bn for 2010].

[105] Records of the Office of the Contractor General show that Incomparable Enterprise was awarded three contracts by the Ministry of Housing and Water on June 24, 2009 for J$10.7m each; and each for "repairs and waterproofing

illicit interests appears reminiscent of organized-crime activities in various parts of Italy. Reform efforts in this area are underway. Jamaica updated its regulations on public procurement when the MFPS issued the Public Sector Procurement Regulations (2008).[106] It also has a relatively powerful and independent Office of the Contractor General (OGC), with a mission to "ensure that the public-sector procurement process delivers value to the taxpayer, is merit-based, is free from corruption, impropriety and irregularity and is transparent, impartial, competitive, fair, efficient and effective." The OGC reports to Parliament and maintains an extensive website, providing a significant degree of transparency with regard to contracting by ministries, agencies, and public bodies.[107] In addition, Jamaica has a National Contracts Commission (NCC), an eight-member panel appointed through a multi-stakeholder process. Members can serve for up to seven years. The NCC's role is to review contracts over J\$10 million, registering and classifying contractors who want to receive government contracts and making recommendations to the Cabinet on improving government contracting.[108] The OCG has undertaken a number of investigations of government contracts, indicating a continuous need for improving procurement practices. Investigations have included contracts entered into by government ministries and agencies as well as contracts related to public bodies (e.g. Air Jamaica). Some of these investigations and their findings have stirred public and political controversy.

5.39 **Overall, there appears to be an ongoing need to strengthen the legal base for good procurement.** Key provisions are regulations and do not have the status of a law. A stronger legal base is needed to ensure that existing rules and principles are actually followed in practice and to build confidence among the public and the private sector that government contracting is conducted fairly and transparently.

C3. The Budget Process

Budget Formulation

5.40 **While existing legislation does not provide explicit guidance with regards to budget preparation, the budget-call circular has provided a sound basis for the budget process.** Budget ceilings determined by the MFPS are set on the basis of the macroeconomic framework and, to some extent, take into account the government's policy objectives. However, no direct link exits between the line ministry corporate plans and medium-term budget resource envelopes. The budget call, including ceilings by ministry, is then distributed to line ministries, which have the responsibility of preparing their budgets within their overall ceiling. The line ministries then present the budget to the MFPS' Public Expenditure Division for detail analysis. The MFPS takes this analysis and uses it as the basis of his presentation to Cabinet.

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to concrete slab roofs" in different parts of Tivoli Gardens. As the same record notes, contracts over J\$30m are subject to Cabinet approval, a requirement clearly avoided by splitting the contract into three parts. http://www.ocg.gov.jm/website_files/contracts_endorsed/awards-june2009.html.

[106] These regulations were issued by the MFPS to supplement the regulations set out in the Handbook of Public Sector Procurement Procedures. For discussions of the procurement system prior to this new regulation, see also PEFA (2007), and the World Bank and IDB Joint CFAA/CPAR (2006).

[107] See: http://cg.gov.jm/cg/index.php.

[108] In its self description, the NCC is also defined as an "independent anti-corruption commission." See http://www.ncc.gov.jm/ncc/. Unlike other countries, Jamaica currently does not have a separate anti-corruption commission or agency.

5.41   **The budget calendar allows reasonable time for budget preparation.** While there may be some delays, most line ministries complete their submissions on time, and many of them start the process before receipt of the budget circular indicating the ceilings. Line ministries have the opportunities to defend their budget during the process of discussion with the Public Expenditure Division, the Financial Secretary, and the MFPS. While the executive completes its budget submissions prior to the start of the fiscal year, the legislature always approves the budget after the start of the fiscal year. This is largely due to the historical practice of Parliament with respect to its sitting schedule. Consistent with the requirements of the Constitution, the Parliament approves the appropriations within one month of the start of the fiscal year after subjecting budget proposals to vigorous debate.

5.42   **The budget preparation process is principally a top-down approach.** Medium-term forecasts for fiscal aggregates are prepared for a three-year horizon; however, the next budget year is not linked to the forecasts. Many of the elements of sound strategic planning are evident, and some important elements of multi-year budgeting have been introduced. However, they have not yet been integrated into an effective multi-year budget process. Sector strategies and detailed corporate plans are prepared, but these are not always costed. Even when they are, the process does not include the top-down discipline of an aggregate fiscal constraint, making it difficult to maintain a direct tie-in into the broader budget formulation process. While line ministries should not exceed their ceilings, their submissions are usually in excess of the budget ceilings, making the reconciliation process difficult. The process then depends heavily on the MFPS having to cut budgets to match the available resources.

5.43   **The Jamaican budget process does not include a review of the public sector's overall activities and resulting fiscal position.** Public bodies constitute a significant share of the wider public sector, yet they are in principle self-financing and are not sufficiently covered by the regular budget-planning process.[109] Furthermore, public investments funded by development partners undergo a planning process separate from the one for domestically funded capital expenditures.

5.44   **Fragmented fiscal-planning processes tend to lead to higher deficits and less success at fiscal consolidation in many countries—and Jamaica is no exception.** Budget processes are more fragmented if there are significant off-budget funds and/or unreported contingent liabilities. These shortcomings mean that financial decisions can be made without challenge from competing distributional interests. Furthermore, this tendency is reinforced when important "non-decisions" are built into the system in the form of mandatory payments (von Hagen, 2005: 6-7). Until recently, the fiscal costs of Jamaica's still large public-enterprise sector did not face regular budget review and debate. More extensive submissions on public bodies and other budget documentation for Parliament were introduced for FY2010/11; however, these are still considered inadequate for a real review of the overall fiscal stance, leaving specific sources of risk. Furthermore, as discussed above, a large share of public expenditures are treated as mandatory and not subject to vigorous review.

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[109] "In principle" refers to the fact that ex-ante business plans suggest these entities are self-financing; i.e. they expect to fund their operations and other expenditures from their own revenues. However, some of these public bodies cannot generate sufficient revenues and incur losses, ultimately requiring government subsidies.

Budget Execution

5.45   **The execution of the approved budget is delegated to the ministries and other central government entities, which operate through a series of programs, sub-programs, and activities.** The MFPS issues monthly warrants to authorize expenditures. Warrants are issued by the Public Expenditure Division based on the approved budget, subject to decisions taken by the Cash Management Committee. The committee is composed of representatives from the Public Expenditure Division, the Economic Management Division, the Accountant General's Department (AGD), and the Tax Administration Services. The Fiscal Policy Management Unit (FPMU) of the Economic Management Division is the coordinating body for cash management, along with the chair of the Cash Management Committee. Given the tight cash conditions, the committee holds weekly meetings. The AGD releases money from the Consolidated Fund to ministries and other agencies up to the value of the issued warrants. The ministries and agencies are required to maintain systems and procedures to control and record the use of public funds according to legal regulations and prescribed procedures.
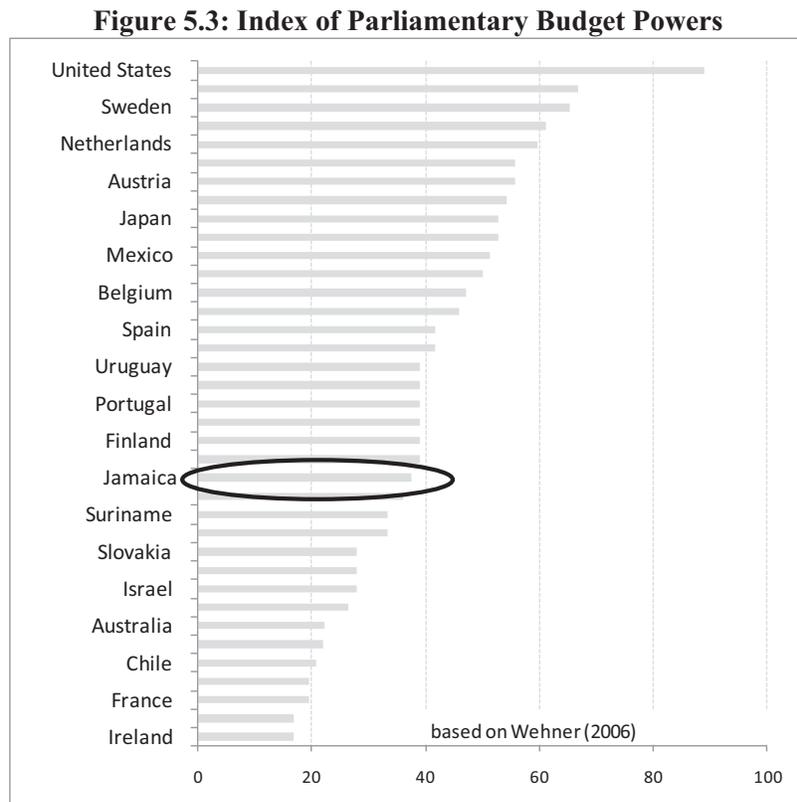
5.46   **The rules of the game do not seem conducive for approaching fiscal consolidation.** A high share of expenditures is defined as "statutory" and not subject to review and debate. According to the Constitution, article 116 (4): "'statutory expenditure' means (a) expenditure charged on the CF […] by virtue of any of the provisions of this Constitution or by virtue of the provisions of any other law for the time being in force; and (b) the interest on the public debt, sinking fund payments, redemption monies, and the costs, charges and expenses incidental to the management of the public debt."

5.47   **Formal rules permit a lot of lee-way to the executive during budget execution**. The Constitution (article 116, 2) explicitly permits the MFPS to introduce supplementary bills to the House. However, neither the Constitution nor the FAA provide clear guidance about the level of deviation necessary for introducing supplementary budgets (e.g. for any change in fiscal aggregates, for changes above 10 percent, or for changes to allocations across main line items, etc.). There is also little guidance regarding expenditure arrears (e.g. how they are to be recorded and presented in supplementary or future budget submissions) or what to do when available resources fall short of meeting all expenditure requirements—and what and how statutory expenditures may be cut in such situations.

5.48   **As set out in the PSTU's strategic plan, Jamaica's public sector rules are old-fashioned**. This appears to be the case also in the public financial management (PFM) realm. The FAA dates from 1959. While it has been amended, the FAA is not a modern PFM law. It is largely silent on policy-based budget preparation, it does not contain any guidance on public investment management, and it does not provide for any performance orientation in how public funds are being managed. In this sense, the law is a rather weak basis for guiding a process of fiscal consolidation.

5.49   **Institutionally, the main responsibility for failing to tackle fiscal consolidation rests with the executive rather than with the legislature.** The major deviation toward higher deficits appears to occur during budget execution. Parliament does not seem to vote for major spending

expansions when deliberating and deciding on budgets as submitted by the executive. As shown in figure 5.3, Parliament has an intermediate score of budgetary powers.[110]

Figure 5.3: Index of Parliamentary Budget Powers

Source: Wehner (2006); Jamaica: author's calculations

5.50   **Parliament has recently sought to increase its ability to hold the executive to account over in-year budget execution and fiscal management (including public bodies).** In March 2008, a House resolution created a Public Administration and Appropriations Committee (PAAC) and a Public Accounts Committee (PAC), with a membership of 15 MPs (a quarter of the total).[111]   The PAC is charged with reviewing the budget ex post, and this often has limitations in terms of developing traction for change. In contrast, the PAAC is charged with monitoring expenditures as they occur and ensuring "that expenditure is done in accordance with parliamentary approval" (amended Standing Orders, 73A). The Committee issued its first report in February 2010, focusing on one of the key loss-making public bodies, the JUTC. It is hoped that the PAAC will also enable a deeper review of supplementary budgets.

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[110] Based on an index of budgetary powers developed by Wehner (2006). Jamaica's intermediate scoring is the result of a combination of high and low scores. High scores: few explicit limits on parliamentary amendment powers; and all 60 MPs are involved in budget deliberations; low scores: high executive flexibility during budget implementation & the short time for ex-ante parliamentary budget scrutiny.

[111] See:
http://www.japarliament.gov.jm/attachments/396_REPORT%20OF%20THE%20PUBLIC%20ADMINISTRATIO
N%20AND%20APPROPRIATIONS%20COMMITTEE%20OF%20THE%20HOUSE%20OF%20REPRESENTAT
IVES%20ON%20OUR%20DELIBERATIONS%20ON%20THE%20JAMAICA%20URBAN%20TRANSIT%20C
OMPANY.pdf.

5.51   **Two key challenges in the budget execution process contribute to high deficits, squeeze already tight fiscal space, and impact growth.** These are: (i) low budget credibility; and (ii) weak control during budget execution. Each of these points in discussed in detail below.

Low Budget Credibility

5.52   **High indebtedness and a large wage bill have affected the fiscal space within which Jamaican PFM operates.** PFM operates in a narrow fiscal space exacerbated by the budget's high non-discretionary components, including two major components of the recurrent budget—interest payments and the wage bill. According the MFPS website, the FY2010/11 recurrent budget is approximately 68 percent of the total budget. The management of arrears adds to pressures on fiscal space. Arrears are paid out of the next year's budget, further constraining the current year's resources and further disconnecting budgetary outcomes from intents.

5.53   **Despite having many of the elements in place to achieve a fully credible budget, the analysis highlights two underlying weaknesses**. First, a mismatch remains between available resources and the budget needs as defined by current policy objectives, likely caused by high levels of indebtedness. As a result, the high non-discretionary component of the budget today does not readily permit tactical spending cuts at the implementation level and would require more fundamental policy and strategic decisions to bring the primary expenditure needs more in line with available resources.

5.54   **Second, the budget seems more like a laundry list that incorporates top-down cuts and cherry-picked projects rather than a true reconciliation of top-down resource discipline and bottom-up inputs.** The budget process occurs within pre-announced resource limits based upon credible fiscal forecasts and has bottom-up elements within the budget entities. However, a number of budget entities state that their spending estimates are based purely on absolute needs. Without the policy basis or authority to close down service facilities or reduce staffing levels, these estimates exceed available resources, with no realistic prospects for reconciling budgets to the resource limits. This weakens the budget credibility.

5.55   **Multiple supplemental budgets in a given fiscal year limit the ability of the government to manage its fiscal position accurately and further reduce budget credibility.** Supplemental budgets are neither timely nor accurate. Changes in non-discretionary spending such as debt service are accurately reported in supplemental budgets. The rest of the supplemental budget provides an incomplete picture of the government's fiscal position because of two main weaknesses. First, supplemental budgets do not include any updates on revenues. With an incomplete picture of revenues, it is difficult to control spending and consequently deficits. Second, administrative transfers and reallocations are not accurately reflected in supplemental budgets. Sector ministries require MFPS approval for these transfers and reallocations. While sector ministries seek approval from the MFPS, the changes are often not reflected in supplemental budgets.

5.56   **The practice of regular supplemental budgeting distorts resource allocation, further delinks planning and budgeting, and reduces budget credibility.** After the budget's passage, the Executive can change budget approval and cut spending; revisions or administrative transfers

can be made during the fiscal year. Generally, Parliament approves a supplementary appropriations bill during the last quarter of the fiscal year. In FY2009/10 and FY2007/08, however, two supplemental budgets were passed, one in September and one in March that changed aggregate allocations by a total of 7 percent in each year. GOJ passed one supplemental budget in FY 2008/09 with an increase of 4 percent in aggregate allocations (see Table 5.4). Supplemental budgets often result in reallocation of scarce resources toward fast-disbursing projects that may be non-productive. Despite budget constraint at the beginning of the year, the routine approval of supplemental budgets encourages the expectation that any overspending in the first nine months will be covered by supplemental budgets, contributing to weak in-year controls during budget execution. This undermines the credibility of the budget as a policy statement.

Table 5.4: Supplemental Budget Amounts and Frequency

Financial Year*	Original Approved Budget	Revised Budget	Revised Budget	Number of Supplementary Estimates	Dates of Supplementary Estimates	
	$'000				First Supp. Est	Second Supp Est
2000/2001	167,387,973	188,459,488	-	1	13/03/2001	
2001/2002	185,436,857	219,779,507	219,777,507	2	5/2/2002	18/03/2002
2002/2003	210,064,493	223,524,105	225,043,654	2	10/12/2002	18/03/2003
2003/2004	261,704,873	279,161,324	-	1	2/3/2004	
2004/2005	328,153,402	331,547,754	328,176,233	2	7/12/2004	15/03/2005
2005/2006	347,155,951	346,278,253	-	1	7/3/2006	
2006/2007	358,192,700	372,081,200	-	1	27/02/2007	
2007/2008	380,364,747	402,884,431	405,385,169	2	27/01/2007	18/03/2008
2008/2009	489,529,398	507,972,069	-	1	27/11/2009	
2009/2010	555,040,106	561,535,407	593,064,274	2	22/09/2009	16/03/2010

Source: Ministry of Finance and Public Service

Weak Control During Budget Execution

5.57 **For budget execution, Jamaica faces key challenges that contribute to debt build-up and low growth.** Despite a fairly sound budget-preparation process, and for the most part effective debt management (exclusive of arrears), issues for budget credibility, public investments, and debt build-up arise from the execution phase of the budget process. It has been affected by low predictability of resources, spending commitments outside the budget, weak cash management and coordination with debt management, and accrual of arrears.

5.58 **Managing the budget mainly by cash rationing limits the predictability of the release of money from the Consolidated Fund to the spending units.** Given the cash constraints that govern budget execution, there is no certainty that the budget appropriation will be authorized in full through warrants or that the warranted funds will be released in full. This uncertainty is further compounded by the lack of clear rules or guidelines for in-year adjustments to budget appropriations that realign priorities across sectors to be funded as the fiscal situation evolves. This practice limits the achievement of program objectives, prevents and discourages managers from planning, and risks reducing ministerial commitment to budgets. This increases

the perceptions that the budget is a tool for the MFPS, rather than one that helps ministries plan spending and make commitments in support of their goals and programs. This can only further erode budget credibility. This permanent shortage of funds has pushed public entities to make extensive use of partial payments, leading to the accumulation of arrears.

5.59   **Lack of controls over rates of budget commitments and accruals limits the ability to align budget commitments and obligations with revenues**. In-year expenditure controls do not adequately control commitments being made outside of resource availability. In the absence of controls, line ministries and agencies have been able to continue making commitments. This results in overspending and increasing accounts payables to contractors. In some cases, the overspending has been partly funded through retention of the entities' employees' tax deductions. Due to the lack of expenditure controls and adequate reporting mechanisms on amounts owed, the volume of floating debt is not known on a regular basis. A report is produced only at the end of the fiscal year or whenever the MFPS' expenditure monitoring unit requests it. This irregular practice has been reported by the auditor general for the past three years.

5.60   **The accrual of arrears is an area of major concern because it serves as an informal debt-acquisition mechanism that bypasses the budgetary debt-management controls.** The MFPS' cash rationing has resulted in an accumulation of arrears and debt by several central government entities. There is no reliable information on the size of this form of non-transparent financing, which is rolled over from one fiscal year's budget to the next. These arrears are also not part of the public debt. The accrual of arrears can undermine macroeconomic stability, and in a country with a large public debt, it is important to have accurate data on budgetary arrears in order to monitor them.

5.61   **Monthly financial reporting does not directly reflect commitments made outside the budget and the extent of arrears.** Unless arrears are tracked explicitly, a modified cash accounting basis does not directly capture the substantial accrual of arrears that comes from commitments made outside of resource availability. The reported expenditure data incorporate a bias that tends to overstate the degree of matching between aggregate-expenditure out-turn and budget estimates. The reason: the reported expenditure figures represent a mix of actual expenditure data and budget estimates (when actual expenditure figures are not available). There are relatively high levels of variance of expenditure out-turn for the budget entities over and above aggregate expenditure deviation from aggregate budget estimates. The bias introduced by reporting only provisional expenditure presents even greater difficulties for assessing accurately this measure.

5.62   **Inconsistencies between existing formal rules and available resources open space for various forms of informality and "political" negotiations**. When line ministries and subordinated budget units cannot rely on allocations being honored, they are being forced into a constant and costly process of negotiation about the release of funds throughout the fiscal year.

C4.   Debt Management Practices and Debt Build-up

5.63   **Jamaica has carried a high public-debt burden for over a decade; despite this, no single unifying law (or comprehensive legal provisions) regulates public-sector debt**. As set

out in Section 1, Jamaica's public-sector debt has been at or above 100 percent of GDP for most of the past two decades. Jamaica has undertaken a significant transformation of its debt-management practices in recent years. However, it has not developed a comprehensive legal base that would (i) provide intended or binding limits on borrowing and (ii) establish clear responsibilities and mechanisms for managing public debts and for ensuring that the debt burden is returned to sustainable limits and kept within them.

5.64   **Public-sector debt management is addressed in existing legislation, but only in a fragmented way that leaves important gaps**. Provisions are included in the Constitution (article 116 4b and article 119), and public debt is mentioned in the FAA (e.g. 24E4, 24G). However, these provisions are only concerned with what is to be included in the public debt, and establishing that the public debt is to be serviced from the Consolidated Fund as a "statutory payment."

5.65   **More comprehensive legislation would be helpful in gaining traction on reducing persistent debt levels and moving towards fiscal consolidation**. As international practice suggests, this can be done in the form of a self-standing public debt law (see Lienert and Fainboim, 2010). For instance, Jordan adopted a self-standing public debt law in 2001, defining overall debt ceilings as well as the fundamental mechanisms and responsibilities for debt management. As part of a wider effort to reform its public sector, Turkey adopted a Public Finance and Debt Management Law in 2002, accompanied by a separate Public Financial Management and Control Law, adopted in 2003.[112] Brazil enacted a self-standing Fiscal Responsibility Law, mainly aimed at bringing borrowing by regional governments under control. Other countries have integrated provisions on public-debt ceilings and debt management into their organic budget laws.

5.66   **Core debt-management functions are consolidated in the Debt Management Unit (DMU) under the MFPS' Economic Management Department**. The DMU has the full responsibilities of a modern debt-management office. It is currently undergoing organizational reform that will create a structure with front, middle, and back offices organized by function, rather than by sources of funding. This replicates the practice of financial institutions and advanced debt-management offices. This reform will reduce duplication of functions, diminish operational risk, and enable comprehensive analysis of the total debt portfolio. The front office will define issuance strategies and mechanisms and provide documentation required for the issuance process. It will also coordinate issuance of debt securities with the BOJ and manage relations with investors and rating agencies. The middle office will (i) conduct cost-risk analyses and develop the medium-term debt management strategy; (ii) provide recommendations related to portfolio management, both domestic and external; and (iii) coordinate with fiscal and monetary policy. The back office will record and report on debt statistics and authorize debt-service payment.

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[112] The Public Finance and Debt Management Law lays out the principles of debt and asset management that apply to the budget process. It also sets borrowing limits for financing budget deficits. It also regulates debt and asset management and contingent liabilities between central government, local authorities and other public entities. See: Kasek and Webber (2009).

5.67   **While debt management is based upon a clear and well-articulated debt-management strategy with careful monitoring of the debt stock (exclusive of arrears), there key issues compromise GOJ's ability to manage its debt effectively.** First, there has been a significant transformation in debt-management institutions; however, a deeper institutional reform is necessary for comprehensive debt management. Second, the lack of effective coordination between the DMU, the BOJ, fiscal policy, and cash management constrains debt management by increasing ad-hoc issuance of debt that may reduce adherence to the debt-management strategy. Finally, Jamaica's debt-management strategy has an annual perspective with inadequate focus on medium-term risk and sustainability. Each of these issues is discussed below.

5.68   **First, despite reorganization, some fragmentation remains in the debt-management function.** The Loan Administration and Management Unit (LAMU), a unit independent from the DMU, will continue to manage the project loans contracted from multilateral and bilateral sources and from commercial banks. The DMU is consulted on the loans' financial terms but does not participate in negotiations. This arrangement will continue to remain in place after the reorganization. However, this practice does not lend itself to the design and implementation of an effective debt-management strategy, with the risk that LAMU's activities and funding will be determined on a case-by-case basis according to the project being funded.

5.69   **Management of guarantee operations to public-sector entities will also continue to be fragmented and poorly monitored without clear guidelines or limits.** The Public Enterprise Unit (PEU) and the DMU are both involved in processing guarantees. PEU's responsibility is the financial analysis of the entity's creditworthiness. The DMU's role is to analyze the financial terms and conditions of the loans being guaranteed to determine whether they are consistent with the cost and risk objectives of the central government's debt portfolio. However, there are no guidelines or strategies that apply to the borrowing decisions of the public-sector entities, and the MFPS can be susceptible to political pressures to issue guarantees. Debt legislation is mostly silent on the management of government guarantees and contingent liabilities.

5.70   **The middle-office analytical functions are done separately for external and domestic debt portfolios, and the results are collated but a combined analysis for the total debt portfolio does not exist**. Current analyses consist mainly of backward-looking evaluations that describe the evolution of the main risk indicators. There is little forward-looking evaluation, such as an examination of alternative debt-management strategies under different risk scenarios. There is also no middle-office control function that examines and monitors compliance to established processes and procedures.

5.71   **Second, coordination seems limited among the various institutions related to debt management, compromising GOJ's ability to manage debt effectively.** A Financing Committee meets weekly to discuss options for funding, but this is more akin to an internal DMU meeting. No forum (i.e., a Debt Management Committee) meets to discuss medium-term debt-management strategy and its interaction with domestic debt market developments and macroeconomic constraints. Aspects of debt management issues are discussed in Cash Management Coordination Committee (MCC) and Fiscal Policy Committee (FPC) meetings.

5.72   **Coordination takes place between MFPS units handling debt management and fiscal-policy management, particularly during a weekly Fiscal Policy Committee (FPC) meeting; however, the effort is not based on sound fiscal sustainability analysis.** The FPC, chaired by the Financial Secretary, brings together the FPMU, DMU, Tax Administration Unit, Tax Policy Unit, Public Expenditure Unit, the Accountant General's Office, Public Enterprise Unit, and others by special invitation. The FPC's main objective is to ensure that, on average, the budget stays on a numeric target and to monitor the deviation of actual to budgeted revenues and expenditures over time. There are no terms of references for this meeting. However, MFPS does not carry out fiscal sustainability analysis, and DMU has expressed its intention to start leading this type of analysis.

5.73   **Policy coordination with BOJ takes place at the highest level, but a formal coordination mechanism is lacking at the operational level.** Where the level of financial development allows, debt management and monetary policy objectives and accountabilities should be separated. However, this is not the case in Jamaica. The central bank also issues debt, making close coordination necessary. The BOJ is the government's fiscal agent and maintains the subsidiary account of the Consolidated Fund. In this capacity, it has important front and back office responsibilities. It conducts auctions for domestic debt, and it is the payment agent for servicing external debt as well as domestic debt owed to the primary dealers. However, there is no formal agency agreement between the MFPS and BOJ.

5.74   **Domestic debt management operations are dictated by timing of cash flow needs, so DMU is unable to publish a regular issuance calendar.** Financial markets are is not informed of amounts of debt to be issued, adding to the unpredictability of debt issuance. The CMC meeting is attended by representatives from the DMU, FPMU, Tax administration Unit, Public Expenditure Unit, and the Accountant General's Office. The objective is to forecast expenditures and revenues and to identify temporary shortfalls in the budget.

5.75   **Third, the current debt-management strategy is not medium-term and does not take into account cost-risk tradeoffs.** The lack of a comprehensive medium-term debt-management strategy (MDTS) with a focus on risk and sustainability contributes to debt build-up. The debt-management strategy has been developed and reviewed on an annual basis since 2000, and it is published on the MFPS web site, along with periodic statistics on debt stock and composition, increasing the transparency of debt-management operations. Control of government guarantees has been strengthened, new domestic debt is mostly marketable, and international markets have been accessed regularly since 2001.[113] The DMU does not have a cost-risk model for quantifying the budgetary impact of different debt-management strategies under various scenarios. The debt-management strategy provides mainly guiding principles, and the existing numeric targets are based on principles, not quantitative analysis.

C5. Public Bodies

5.76   **Approximately 200 public bodies were registered with the MFPS' Public Enterprises Division (PED) at the end of FY2008/09.** Of these, 95 (47.5 percent) are characterized as self-financing—with some authority to collect revenue, borrow, and spend

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[113] Until mid-2007.

outside the central government's budget, although most cases require MFPS and/or line ministry approval. The rest of the public bodies are included in the central government's budget and financial reporting, submitting monthly reports to the PED. The budgeting, control, and reporting requirements for all public entities are set out in the 2001 Public Bodies Management and Accountability Act (PBMA). Sixty-five of the self-financing public bodies are subject to close PED monitoring, and the corporate plans and budgets of 54 of these self-financing public bodies were summarized in the FY2009/10 annual report, titled Jamaica Public Bodies Estimates of Revenue and Expenditure. However, both types of entities create contingent liabilities for the central government through the accumulation of arrears, which can go unreported.

5.77   **The investment planning and budgeting process of public bodies varies depending on whether they are financed by the GOJ or are self-financing**. Public bodies funded by the GOJ budget submit their spending proposals through their parent ministries. These enterprises have no borrowing authority. Self-financing enterprises have to submit corporate plans to the MFPS on a three-year rolling basis along with their annual budgets. In principle, this allows the full consideration of all major loans and guarantees in the annual budgeting process. Self-financing enterprises can borrow upon MFPS approval with the endorsement of Parliament. The government submits revenue and expenditure document to Parliament every year.

5.78   **All public enterprises are required to report quarterly to the contractor general and monthly to the procurement unit of the MFPS' Public Expenditure Policy Coordination unit.** While both self-financed and budget-funded public enterprises submit financial statements at least quarterly to the MFPS, the accuracy of the financial statements is questionable. All public enterprises are required to set up an internal audit unit and an audit committee that report directly to the board of directors. About 85 percent have done so, according to the MFPS. Public bodies report annually to Parliament. All public bodies are audited annually by an independent auditor and on a sample basis by the Auditor General. Until now, International Financial Reporting Standards (IFRS) have been used; thus, all public bodies using accrual accounting are supposed to apply these standards. The government and the Institute of Chartered Accountants of Jamaica have reviewed the International Public Sector Accounting Standards (IPSAS).   The government is committed to adopting these standards, and the change is in progress.

5.79   **Public bodies play an important role in investment and employment**. The FY2009/10 budget reported that annual investment in infrastructure and development by 12 of the main public bodies amounted to 1.8 percent of GDP over the past five years. Projections for the fiscal year ending March 2010 suggested that the public bodies will have total gross assets of around J$427 billion, equivalent to 40 percent of GDP. Based on the government's estimates from 2007, public bodies employ approximately 17,829 workers, or about 15 percent of the total public-sector workforce. However, this data is not systematically collected and may not be up-to-date.

5.80   **The financial management of public bodies has a significant impact on debt build-up and growth in Jamaica.** Public bodies play an important role in public investment and fiscal management. As a matter of policy, GOJ has tended to bail out defaulting public enterprises. The current financial management of public bodies has compromised the government's ability to strengthen its fiscal position. The government is undertaking reforms and rationalization of public bodies. The ongoing restructuring process has not seemed to curb the substantial losses

incurred by some public enterprises. Privatization efforts have not been significant, and public enterprises still pose a significant fiduciary risk despite sound PFM oversight systems.

5.81   **Key challenges include**: (i) lack of consolidation of public bodies' finances in the central budget; and (ii) lack of transparency, accountability, and management oversight of public bodies by the MFPS and/or the sector ministries responsible for the public bodies. Each of these issues is discussed below.

5.82   **There is limited consolidation of public bodies' finances in the central budget.** The MFPS' Public Enterprise Division (PED) is responsible for consolidating and overseeing public bodies' investment and financial statements. In practice, however, the PED cannot effectively fulfill its role due to the lack of comprehensive and accurate information received from the public bodies. The financial statements prepared by public bodies may not be realistic or credible, and anecdotal evidence suggests that these financial statements inaccurately portray the financial position of public bodies in an effort to limit oversight and *ex ante* scrutiny of new financing requests.

5.83   **The central government does not exercise adequate budgetary and in-year control of the finances of public bodies.** Nearly half the public bodies are either directly or indirectly dependent on the budget. However, GOJ does not perform any clear regulatory function and offers no clear equity or efficiency rationale for these public bodies. In theory, self-financing public bodies are independent of central government finances. In practice, however, the GOJ provides guarantees to public bodies and implicitly assumes the liabilities of both budgetary and self-financing public bodies. Weak *ex ante* planning and inaccurate representation of financial positions give rise to ad-hoc financial support of public bodies during the fiscal year—either by deferring tax payments to the GOJ or by requesting additional cash subsidies or transfers. Both adversely impact the government's fiscal position.

5.84   **Public bodies have undertaken a range of investments. Their size and separation from the regular government finance contributed to budget fragmentation and the failure to achieve fiscal consolidation**. For instance, the Urban Development Corporation (UDC) has built schools, cultural and sports centers, and expanded roads; while the National Housing Trust (NHT) reportedly provided 6,284 housing benefits in FY2006/07 and planned to provide 6,600 such benefits in FY2007/08.[114] The public bodies constitute an expansion of the quasi-public sector that should be subject to debate and review. They also expand the scope of potential fiscal risks. This seems particularly problematic when public enterprises invest in activities that go beyond their core mandate and put them in direct competition with private companies.[115]

5.85   **Efforts to strengthen oversight of public bodies and to impose hard budget constraints have not been fully successful.** The PBMA, adopted in 2001, sets out in Article 5 that "a public body shall not exercise any borrowing powers without the prior approval of the Minister [of Finance]." However, the report on public bodies for FY2007/08 notes that "the Minister [of Finance] *will seek to impose* stringent conditionality on public bodies seeking grants

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[114] GoJ/MFPS: Jamaica Public Bodies, Estimates of Revenue and Expenditure for the Year Ending March 2008, as presented to the House of Representatives, April 2007: p. 2.
[115] E.g. for FY2007/08, the UDC proposed to invest in tourism and property management (ibid: p. 6).

or loans from the government" [emphasis added]. This statement and the fact that public bodies have been a continuous driver of large public-sector deficits indicate that borrowing by public bodies has not been brought under control. There are also indications that the business plans submitted by public bodies can be overly optimistic and may sometimes be incomplete. The review by central executive agencies (MFPS) or Parliament has been insufficient to limit the risk that losses will emerge during the fiscal year.

5.86   **The nature of public bodies, and the way they are allocated across ministries, suggests that they are useful for political patronage.** For instance, control over the UDC or the NHT opens the possibility of conferring benefits like access to mortgages and urban development projects to politically relevant constituents. Both of these entities have been under control of the Prime Minister's office. In its recent report on the Restructuring of Ministries, Departments and Agencies, the PSTU is proposing to put the UDC and NHT under the Ministry of Water and Housing because their activities are in line with that ministry's sectoral mandate (PSTU 2010: 20).

5.87   **Furthermore, the governance structure of public bodies is likely to complicate the restructuring that would be necessary to achieve fiscal consolidation.** Line ministries control public bodies and are unlikely to easily yield control even when these entities operate at a loss. Consequently, divestment processes, even if decided on in principle, have been slow in practice. For example, the original restructuring of the sugar sector was initiated in December 2005 with the adoption of a Sugar Adaptation Strategy. Because of various difficulties, however, Sugar Company of Jamaica was still state-owned and continued to contribute to fiscal deficits in mid-2010.

5.88   **Public bodies have been a key focus of fiscal-consolidation efforts, and changes stemming from the FRL include provisions regarding public bodies.** The amended PBMA now states that the MFPS' approval of any borrowing has to be in writing, and the revision also extends the explicit requirement for MFPS approval to the issuance of bonds (paragraph 5, subsection 1). Furthermore, the House and Senate are now approving public bodies' corporate plans (paragraph 2A). For FY2010/2011, Parliament for the first time received a comprehensive overview of the fiscal implications of public bodies' activities. Making the fiscal risks from public bodies more transparent and clarifying accountability should improve oversight. However, MPs have raised the concern that the information presented to them is insufficient to allow proper assessment of the potential fiscal risks and the steps needed to reduce these.

5.89   **However, no specific limits have been imposed on public bodies' borrowing, and as long as MFPS approval is obtained, any borrowing by public bodies meets the requirements of existing legal rules.** While the FRL amendments further tighten rules about MFPS approval, they do not include any borrowing limits for public bodies. No provisions put a public body under more stringent supervision if it is loss-making. No provisions clarify how subsidies for loss-making public bodies (e.g. the JUTC) have to be budgeted (ex ante, during the budget planning process). The fact that the FAA contains few explicit provisions regarding budget planning seems to reinforce this problem.

5.90 **Accountability for the performance of public bodies and for ensuring that corporate plans are realistic and followed is rather unclear and overlapping.** Corporate bodies have boards. In addition, they report to specific line ministries and to the MFPS and Parliament. In principle, boards are responsible for ensuring the "efficient and effective management of the public body" (PBMA, article 6a). Board directors also constitute a public body's audit committee.[116] Regular audits are undertaken by internal auditors; line ministers responsible for overseeing a public body can also ask for special audits and appoint an auditor for this purpose (PBMA article 12).

D. THE BIGGER PICTURE: POLITICAL ECONOMY CHALLENGES OF FISCAL

Consolidation and pro-growth fiscal policies

5.91 **This section looks at the political economy of reforms to understand why changes considered socially beneficial to Jamaica have not been implemented in the past**. The look backward should provide insights on what could be done to overcome political resistance and garner more support for economic reforms. Section D1 provides a short discussion of the role of political economy considerations in designing and implementing socially beneficial reforms and draws conclusions from relevant economic research. Section D2 presents the main challenges that have for years blocked needed fiscal consolidation and hindered growth in Jamaica. Particular focus is devoted to failed attempts to improve fiscal and debt sustainability, with a view to understanding political factors behind the unwanted outcomes. Section D3 offers recommendations for design and implementation of a sustainable reform policy.

D1. Understanding the Political Economy of Reform

5.92 **In the past two decades, two of the most active fields in economics have been growth theory and political economy**. The growth research, with its new endogenous growth theories, analyzes such economic factors as education, openness, infrastructure, and government spending to determine their relative importance for growth. The political economy approach argues that economics alone cannot fully explain the huge difference in growth across countries. Political economy models assert that economic policy choices are not made by social planners; rather, economic policy is the result of political struggle within an institutional structure.

5.93 **Political economy begins with the observation that actual policies are often quite different from optimal ones**. Political constraints refer to the limitations that arise due to conflict of interests and the need to make collective choices in the face of these conflicts. Positive political economy asks how political constraints may explain the choice of policies and thus economic outcomes that differ from optimal policies and the outcomes those policies imply. In other words, the mechanisms that societies use in choosing policies in the face of conflicts of interest will imply that the result will often be quite different from what a social planner would choose. Normative political economy would ask the question of how, given the existing political constraints, societies can be led to best achieve specific economic objectives. Therefore, the

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[116] For public bodies with three or fewer board members, all are part of the audit committee; for public bodies with four or more board members, at least three have to be selected as audit committee members (see PBMA article 8, 1 and 2).

political economy approach includes not only how to overcome the existing institutional framework's political constraints, but also the design of political intuitions to better achieve economic objectives (see Drazen, 2000). [117]

5.94 **Research on the political economy of reform argues that uncertainty about reform outcomes and polarization build resistance for reforms.**[118] For instance, Fernandez and Rodrik (1991) show that the combination of individual specific uncertainty concerning whether you will win or lose from reform, together with majority rule, may cause socially beneficial reforms to be blocked, even though everybody knows that a majority will gain *ex post* from reform. Alesina and Drazen (1991) look at why reforms are often delayed in a fragmented and polarized environment, and their findings are particularly relevant to Jamaica. Their study uses a two-player war-of-attrition game model. The underlying setup is an initial fiscal imbalance that requires expenditure reductions or tax increases. The society consists of two groups that would both benefit from stabilization. However, since stabilization is a public good, each prefers that the other group carry most of the short-term cost of stabilization. If each group knew its exact cost of waiting to initiate stabilization (the cost of inflation, high interest rates, general economic and social disruption), then the group with the higher cost of waiting would give in at once and take the brunt of the short-term cost. The members of this group do so because they know that the members of the other group will be capable of out-waiting them. If these costs are unknown, however, then the only way to find out the other groups costs of waiting is to start a war of attrition in which both groups wait to see if the other group will give in. Eventually, the group with the higher cost of waiting concedes and stabilization takes place. However, both groups would have been better off if the high-cost group had given in immediately. An inefficient delay occurs in equilibrium because of the uncertainty over the costs of waiting.

5.95 **The political fragmentation and polarization argument also finds support in empirical studies**. Veiga (2000) examines the role of political fragmentation by looking at 27 inflation-stabilization programs in 10 mostly Latin American countries from the 1960s to the 1990s. Using both probit and proportional hazard models, this study finds that increased political fragmentation decreases the probability of starting a stabilization program. Along a similar line, Dollar and Svensson (2000), looking at what explains structural-adjustment programs' success rate, find that increased ethno-linguistic fragmentation—often argued to be a measure of polarization—leads to a lower probability of a successful reform program. However, the effect is non-linear, indicating that the adverse effect only kicks in at rather high levels of polarization. Related to this is also the work by Easterly and Levine (1997), Alesina, Baqir and Easterly (1999), and Alesina and Rodrik (1994), who emphasize how polarization causes a bias in public expenditures toward transfers, leading to an underinvestment in public goods.

5.96 **The vested-interest argument is an alternative explanation of why socially beneficial reforms may not be implemented**. According to this argument, even if there is no uncertainty, reforms that are socially beneficial may still generate losers, and these losers may be politically influential enough to block the implementation of reform. The influence may be direct through the ability to block reforms within the legislature or during their implementation, or it may be indirect through the ability to influence politicians to choose the status quo. The vested interest

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[117] Drazen, A. (2000a), *Political Economy in Macroeconomics*, Princeton, NJ: Princeton University Press.
[118] See Olofsgard (2003) for a survey of the political economy of reform.

groups do not necessarily come from outside the existing power structure; resistance to reform may very well come from within the government or, more generally, the political elite itself.

D2. Political Economy of Reform Challenges for Fiscal Consolidation in Jamaica

5.97 **Jamaica has been in a low-growth, high-deficit, and high-debt equilibrium for some time**. From an institutional and political economy perspective, this raises the question of why politicians have not sought to address this situation, or have not been able to change the status quo. Jamaica has had a democratic political system throughout independence. In principle, such a regime should generate incentives for politicians to care about the demands of citizens. Furthermore, one would expect that citizens/voters care about growth because it generates employment and other economic opportunities.

5.98 **In this context, Jamaica presents a puzzle: Even though the growth has been low over significant periods, voters have re-elected incumbent parties multiple times**. This is particularly surprising given that voters in Jamaica are well-educated and class or income cleavages do not appear to be relevant (i.e., there are no over-riding ethnic or other cleavages that would clearly eclipse economic issues in elections). Moreover, some indications suggest that Jamaican political parties are programmatically defined. The two main parties—the People's National Party (PNP) and the Jamaica Labor Party (JLP)—have existed for a long time and have been relatively stable.

5.99 **Three key factors probably contributed to this puzzle.** They are: a high degree of political polarization, high emigration rates among skilled workers (and voters), and some fragmentation of one of the main parties, which opened political space for the other main party to continue in government.

5.100 **While Jamaica has maintained a democratic political system for a long time, it has seen considerable political violence related to elections (see e.g. Sives 2009).** This has led to efforts at electoral reform, which gained traction in the 1990s. The electoral system is a classic first-past-the-post, or majoritarian, system, with 60 single-mandate districts—i.e. one MP is elected from each election district.[119]

5.101 **Fiscal consolidation and re-orienting funds to promoting growth have been on the agenda for some time in Jamaica**. This raises the question to what extent institutional reforms have facilitated or hindered the emergence of good policies. This section takes a closer look at the existing rules and recent reforms.

5.102 **PFM in Jamaica has been caught in a rather vicious circle of high debt levels and insufficient budget credibility and debt management**. The high levels of indebtedness and the high share of debt service contribute to undermining budget credibility, while the insufficient budget credibility and debt management contribute to the further debt accumulation. The high
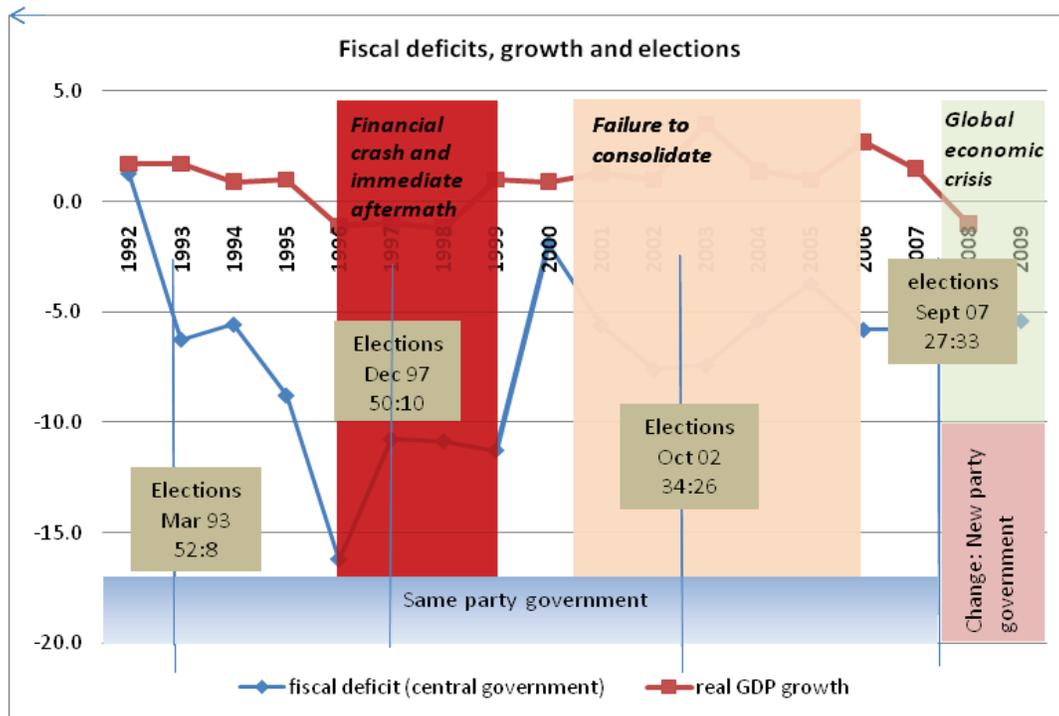
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[119] First past the post is also called "majoritarian." Proportional electoral systems work with party lists, and the electoral district may be the entire country—in the most basic form, a party taking x percent of the votes receives x percent of the seats in Parliament. Party systems differ on how they translate votes into seats; and they create a variety of incentives for politicians and for political parties.

levels of debt emerged in the wake of a financial sector crisis in the 1990s. As discussed in the 2003 CEM and elsewhere, Jamaica's debt ballooned subsequent to the 1996 home-grown financial crisis from around 80 percent to 150 percent of GDP (World Bank, 2003). In the aftermath, overall fiscal deficits ran above 10 percent of GDP from 1996 to 1999. The crucial failure then was to take decisive action to consolidate in the 2000s.

5.103   **In Jamaica, the political economy challenge regarding debt and budgeting revolves around the failure to take *very* hard decisions on the part of the executive**. Past governments took relatively hard decisions in terms of maintaining the significant primary surpluses needed for debt financing. However, real fiscal consolidation in terms of running overall surpluses came "too little" and "too late." As a consequence, the aftermath of the 1996 financial-sector meltdown was never fully dealt with and overcome.

5.104   **The government failed to pursue fiscal consolidation in several time windows**. As shown in Figure 5.4 the financial crisis' immediate aftermath coincided with the 1997 elections. The political window of opportunity was only used late, with some real fiscal consolidation starting in 2000, when the deficit was reduced to 1.9 percent of GDP. After 2001, however, considerable back-sliding took place ahead of the October 2002 elections. Compared to 1993 and 1997, those elections were more competitive and were won by a narrower margin—which may have created pressures to spend. Failed fiscal consolidation continued throughout the 2000s, even though strong global growth and at least relatively strong Jamaican growth offered an economic window of opportunity. A political window also existed after the 2002 elections. This window narrowed and eventually closed with the next elections' approach in 2007 and the emergence of new sources of fiscal strain after 2007 (rising prices of oil imports; global financial crisis).

Figure 5.4: Fiscal Deficits, Elections and Growth, 1992-2009

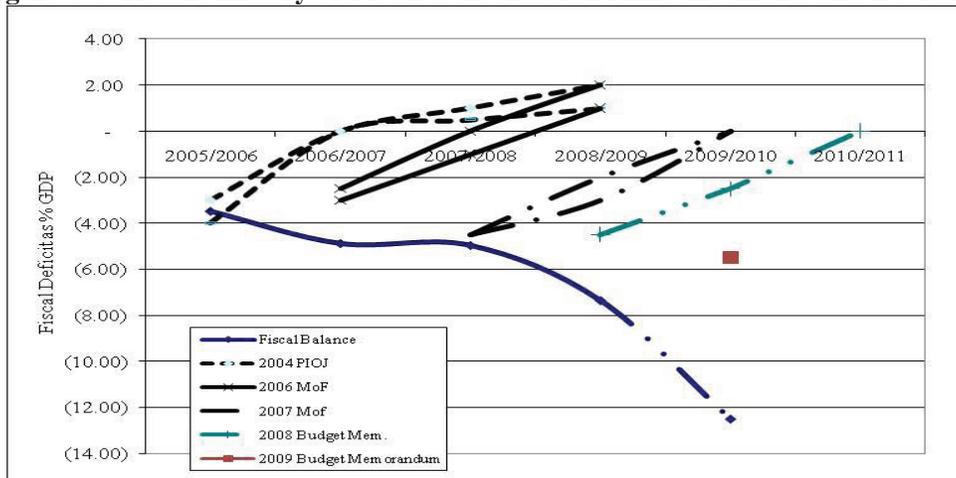*Source*: IMF for fiscal data; deficit data referring to Central Government only

Figure 5.5: FY2005/06 IMF projections of Fiscal Balances vs. Realizations

5.105 **Fiscal consolidation was a policy goal and an expectation, but there was insufficient credibility and follow-through.** Figure 5.5 shows the IMF projections from fiscal balances from 2005 and 2006 together with eventual outcomes. IMF-projected budget balances combined with reductions in off-budget expenditures and growth of 3 percent a year would have contributed to reducing debt to 100 of GDP by 2008/2009. Real developments however, included budget balances that deviated by up to 9 percent of GDP from the projections.

5.106 **Government projections and announcements during this period repeatedly projected a return to fiscal balance within two years**. Figure 5.6 presents a summary by the IDB of GOJ policy announcements regarding fiscal consolidation since FY2005/06, and how de facto fiscal balances have deviated. Essentially, each year, there was a policy announcement to return to fiscal balance within two years; while in reality, fiscal deficits reached more than 5 percent of GDP during economically propitious times, and tipped into deficits of around 10 percent of GDP by FY2007/08.

Figure 5.6: Recent History of Fiscal Consolidation Announcements and Deviation

Source: IDB (Gerard Johnson) (2010): Structural Challenges in Jamaica and Support of the IDB (from: www.iadb.org)

5.107 **One relative advantage for pursuing fiscal consolidation is the presence of a two party system with relatively strong party discipline**. Jamaica has two major parties, the PNP and the JLP. Both have relatively long historical roots, being founded in 1938 and 1943, respectively. Many other middle-income countries have party systems that are less stable,

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frequently reconfiguring as new parties are set up, parties merge, etc. Attempts to create new parties in Jamaica have been unsuccessful, partly due to the majoritarian electoral system.[120] Party discipline can be helpful in generating binding commitments; for example, individual members of parliament generally follow party leadership decisions on key policy votes in Jamaica.

5.108 **Politics has been polarized in Jamaica, has included the involvement of criminal gangs and both political parties have had to satisfy various constituent or affiliated groups**. Both key parties have strong links with unions—the JLP with the Bustamante Industrial Union and the PNP with the National Workers' Union. The upside is that this anchors both parties in broader social movements. The downside is that the reliance on unions for electoral support can make political parties and the policies they pursue beholden to the interests represented by these unions rather than society at large. This appears to have contributed to a reluctance to pursue fiscal consolidation more vigorously. In the 1970s and 1980s, ideological polarization was especially strong, and election campaigns included involvement of violent gangs. Traditionally, Jamaica has had "garrison" political constituencies voting for only one party or another. Especially in the 1980s, elections were marred by violence. Since then, gangs became increasingly involved in drug trafficking. While politically motivated violence subsided, violence motivated by greed became more threatening over time, with negative effects on the social and the political fabric. Jamaica has one of the highest homicide rates in the world (UNODC, 2007). There are still frequent allegations about linkages between political parties and organized crime.[121]

5.109 **Considerable distrust appears to remain between supporters of the two main political parties, although ideological differences have generally declined since the 1970s.**[122] According to public opinion surveys, trust in Jamaica is very low (see table 5.5). This includes trust in government, trust in key institutions such as political parties, Parliament, and the government, and trust at a personal level (which tends to be higher in most countries).

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[120] Majoritarian electoral systems make it more challenging for small parties to gain votes. The most recent attempt to create a new third party was the National Democratic Movement, which broke away from the JLP in 1996 (due to internal leadership struggles). However, the NDM failed to gain any seats in the 1997 and 2002 elections (while probably contributing to the fourth consecutive win by the PNP in 2002). NDM leader Bruce Golding re-joined the JLP, and the party won the 2007 elections.

[121] Evidence in this regard is necessarily anecdotal. Linkages between organized crime and politics are not unusual in countries where criminal groups are significant. Individual politicians may be motivated by fear as well as by greed to support such ties.

[122] See Powell and Lewis, 2009.

Table 5.5: Results from public opinion surveys on trust in Jamaica, 2006

	Can be trusted	Can never be too careful	Don't know
Would you say that most people can be trusted to keep their promises, or that you can never be too careful when dealing with other people?	14.1	83.5	2.4
Would you say most people in government can be trusted to keep their promises, or that you can never be too careful in dealing with people in government?	7.4	84.8	7.8

Source: http://www.mona.uwi.edu/government/LGReport_FinalDraft.pdf. N=1338.

5.110 **Low trust is challenging for fiscal consolidation because groups have to trust that the sacrifices that they are making will be shared by others, with an eventual payoff for all, or at least a majority, of citizens**. Fiscal consolidation will entail restraining wages, enforcing tax compliance, reducing tax preferences, divesting public bodies, and so on—all of which entail losses for various groups. If the groups believe that others will defect from their commitment to fiscal consolidation, strong incentives arise to continue with the default option of "overgrazing the commons." Furthermore, as in any democratic system, it is possible that the government will change hands. Thus, any fiscal space gained by one government may simply be used up again by the next government—and possibly in ways that benefit groups other than those making initial sacrifices.

D3. Designing Sustainable Reform Policies and Implementations

5.111 **It will be important for Jamaica to move forward on fiscal consolidation in ways that are feasible as well as robust with regards to these political constellations.** This includes very good communication by the government on reform steps being taken, the available policy choices, and the reasons for selecting among those choices. The public should see that the costs associated with fiscal consolidation are allocated fairly across different groups in society. This should include a clear protection of the poorest--while making it clear that most or all other groups will have to contribute to the consolidation. Good communication efforts for difficult policies were made regarding the IMF agreement and the JDX. These experiences should be used to continue efforts at good communication and transparency. Demand-side stakeholder would be able to reinforce government follow-through by monitoring actual budget implementation and commenting on deviations from fiscal consolidation.
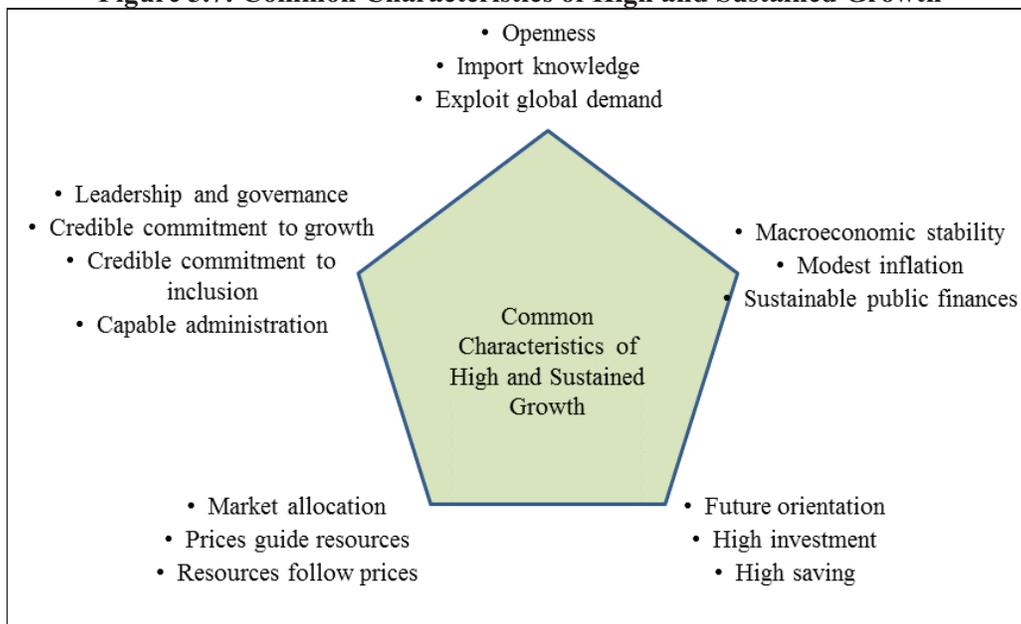
5.112 **Developing a positive vision for equitable and environmentally sustainable growth will also be important.** Vision 2030 already provides a broad platform in Jamaica. Governments can make the positive vision credible by tackling difficult but necessary changes (such as streamlining government organization) and by being very clear about how positive developments can be achieved in the short to medium term. Revising and strengthening public investment management offers an opportunity to put a positive vision into practice.

5.113 **Research on the political economy of reform highlights six points for successful reform implementation.** First, a re-thinking of the role of the state is advised. Downsizing government is usually assumed as a pre-condition for creating capacity to provide goods and services effectively and equitably and enable the transparent and smooth working of markets.

Policy instruments such as decentralization, privatization, and political reform help to redefine the role of the state (World Bank, 1997). Second, primacy should be given to implementation. At a minimum, good implementation requires processes of policy discourse, shared analysis, and collaboration among stakeholders inside and outside of government to build socio-technical and management capacity (Jan-Erik Lane, 1987). Third, it is widely accepted that implementation of policy reforms "is at least as political as it is technical, and is complex and highly interactive." To realize successful outcomes, both technical and institutional analysis must be reinforced by a multi-organizational character, a consensus-seeking style, careful deployment of incentives, and trust throughout the policy-reform community. Fourth, sustainable policy reform and implementation depend to a large extent on "political will and leadership." Ownership of the policy change process and its capacity-building requirements is crucial for sustained reform (Grindle and Thomas, 1997; Brinkerhoff et al, 2002:6). Fifth, policy credibility is important because it helps ensure reform success and provides a shield against failure (Brinkerhoff et al, 2002:7). Sixth, many reforms are frustrated, derailed, or negated by failure to engage with cross-sectoral organizations or those combining public, private and non-governmental members; failure to build and maintain social trust and accountability; and failure to reduce opportunities for corruption or rent-seeking. These and other considerations suggest the centrality of the multi-organizational approach and ability to identify winners and losers in helping achieve successful reform outcomes.

5.114 **Finally, political economy is often considered central to understanding the growth process, both theoretically and empirically.** Politics is a crucial factor in explaining why some countries grow more quickly and smoothly, while others grow hardly at all. The main report of the World Bank's Commission on Growth and Development (The Growth Report: Strategies for Sustained Growth and Inclusive Development, 2008) evaluated the countries that managed to achieve and sustain high growth rates (see figure 5.7) This report highlighted five key factors: The first is a fundamental commitment to a market-based resource allocation. The second is a policy framework that delivered a high degree of predictability in macroeconomic policy. The third is a strong "future orientation"—in other words, an environment that supports high domestic savings. The fourth is openness and the ability to acquire knowledge and technology. The final one is "capable, credible and committed government." By this, the study meant a system of governance and leadership that had the flexibility to adjust policy and institutional structures to changing circumstances and opportunities, while maintaining credibility and broad support. The commission took as its sample all those countries that had averaged 7 percent a year growth for a quarter century or more since 1950, a rate consistent with a doubling in size every decade. Thirteen countries satisfied this condition: Botswana, Brazil, China, Hong Kong, Indonesia, Japan, South Korea, Malaysia, Malta, Oman, Singapore, Taiwan, China, and Thailand.

Figure 5.7: Common Characteristics of High and Sustained Growth

- Openness
- Import knowledge
- Exploit global demand

- Leadership and governance
- Credible commitment to growth
- Credible commitment to inclusion
- Capable administration

- Macroeconomic stability
- Modest inflation
- Sustainable public finances

Common Characteristics of High and Sustained Growth

- Market allocation
- Prices guide resources
- Resources follow prices

- Future orientation
- High investment
- High saving

E. CONCLUSIONS

5.115 **Although the GOJ has undertaken several initiatives during the past few years aimed at strengthening management of its public finances, several fundamental issues continue to affect its fiscal performance.** Fiscal management in Jamaica is guided by a set of rules that does not support a strategic approach necessary to address existing challenges. Budget planning is fragmented, especially for capital expenditures. The public investment planning process is neither strategic nor comprehensive. Systems are weak for ensuring that public investment allocations are clearly prioritized and aligned with strategic development plans and programs. Public bodies have been allowed to operate with implicit or explicit government guarantees, but prior to the recent fiscal-responsibility amendments, there was no requirement to make the resulting fiscal liabilities explicit in budget deliberations. The weak link between government priorities, planning, and budget, the lack of in-year expenditure controls, and the lack of accurate financial statements contribute to inefficient monitoring of public spending. While debt management has improved significantly, it is still plagued by substantial weaknesses including the lack of a comprehensive medium-term debt-management strategy, absence of an institutional framework consolidating the debt-management process; and the lack of borrowing limits.

5.116 **While GOJ efforts to strengthen its fiscal position are sound, strengthening fiscal performance will require a consolidated and comprehensive effort toward managing government finances.** The reform's main thrust should now be on identifying ways to reduce the accumulation of liabilities that add to the debt burden and prevent the efficient allocation of scarce fiscal resources to growth-enhancing and productive capital expenditures. This will require reforms in five major areas: (i) strengthening debt management; (ii) linking the public investment planning and budgeting process; (iii) strengthening in-year controls over spending; (iv) strengthening oversight for public investment and financial management of public bodies; and (v) improving the overall institutional framework.

5.117 **Complicated tax policy and resulting low tax collections create distortions for resource allocation and contribute to the Jamaica's consistent low growth rates in many important ways**. First, an inefficient tax structure with its numerous exemptions and special regimes affects tax revenues, increasing deficits and reducing the fiscal space for productive public investments that would boost growth. Second, the high transaction costs of paying taxes adversely impact tax compliance, further lowering revenue collection. Third, the complex tax and incentives system creates distortions in allocation of capital and decrease the productivity of investment, lowering the potential growth of the Jamaican economy. Jamaica's challenge is designing and implementing significant tax reform in an environment of fiscal stress. Key issues are simplifying and broadening the tax structures, reducing the bureaucracy and number of tax payments that serve to make it difficult for those who are willing to pay taxes. Jamaica would significantly benefit from reforming its waivers and incentives regime with the objective of removing all discretionary exemptions. The objective should be narrowing the scope and reducing forgone revenues. The guidelines for granting any waivers and incentives should be transparent and uniform. There should be regular reporting and monitoring systems to inform policy decisions regarding fiscal cost of waivers and incentives and their success in achieving the targeted groups and activities.

5.118 **Reforming the tax system and achieving fiscal consolidation can be painful and politically unattractive; therefore, it is important to give careful consideration to how such a policy stance can be made politically feasible.** This includes very good communication by the Government on reform steps being taken, the available policy choices, and the reasons for selecting among those choices. Good communication efforts for difficult policies were made regarding the IMF agreement and the JDX. These experiences should be used to continue efforts at good communication and transparency. Tax reforms would require a broad consensus in the society as there would be winners and losers. Fiscal consolidation will need to be pursued at least over a five-year time horizon; hence, it will include at least one election. In the interest of national recovery, the main political parties should publicly commit to fiscal consolidation as a *sine qua non*—to avoid any populist competition over who is willing to spend more. This could help to refocus political competition on spending priorities within hard budget ceilings.

5.119 **Recognizing the complexity of technical reform and the underlying political dynamics, the way forward should be pragmatic and based on a two-phased approach of medium- and long-term reforms.** A number of technical reforms would be relatively easy to implement because they do not require regulatory changes and can provide positive short-term results in the management of public finances. Some of these actions involve strengthening the implementation of existing regulation. These actions would include establishing consistent standards for commitment control, which would improve in-year control of budget execution by the GOJ and public bodies. The medium-term actions may deal with more systemic changes that would require more effort and time to implement, such as tax reforms, stronger links between planning and budgeting and limits on permissible allocation changes in supplemental budgets. With ongoing political commitment, Jamaica can be successful in undertaking reform to strengthen its fiscal position (see table 5.5).

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CHAPTER 6.   GROWTH AND DISTRIBUTIONAL EFFECTS OF POLICIES TO IMPROVE FISCAL SUSTAINABILITY AND ACCELERATE GROWTH

The analyses in the previous chapters indicate that deficiencies in human capital and the combination of high debt, distortive tax incentives, and the promotion of "enclave" development significantly constraints productivity in Jamaica. The analysis in chapter 4 indicates that there exist substantial deficiencies in the quality of labor force resulting from low educational attainments and low percentage of workers who have received training. High rates of skilled emigration (brain drain) further constraints availability of skilled work force. The analysis in chapter 5 shows that several fundamental fiscal weaknesses continue to affect growth. In this context, this chapter simulates the potential growth and distributional impacts of reforms to alleviate some of the above growth obstacles, particularly the ones related to human capital and fiscal distortions. The analysis shows that Jamaica's debt trajectory probably would have turned explosive and unsustainable without the tax reforms and the debt exchange in FY2009-2010. Additional fiscal consolidation—achieved by adhering to the FRF's fiscal deficit rule, can yield further growth and debt reduction benefits, but policymakers must use caution in identifying expenditure cuts. Investments in accelerating labor productivity growth and raising labor's skill content can pay important dividends in faster growth and improved export performance.

A. INTRODUCTION

6.1   **This chapter analyzes the potential growth and distributional impacts of possible reforms for enhancing growth.** The forward-looking analysis is based on linking the 2007 Jamaica household survey with a recursive dynamic computable general equilibrium (CGE) model of the same base year. The CGE model is solved recursively for each year between 2007 and 2020, and the shocks to main variables in the model are passed on to the household survey, generating a counter-factual income distribution. The analysis considers alternative scenarios— business-as-usual with no policy changes, tax reform, FRF adoption, accelerated productivity growth, changes in the composition of the investment mix, and changes in the skill content of the labor force. Comparing the various scenarios allows for an assessment of the potential distributional effects of government policy actions.

6.2   **The chapter finds that future growth and poverty reduction depend critically on the government's ability to stay the course on recent fiscal reforms.** In the business-as-usual, or no reform, scenario, the public-debt burden continues to rise from current high levels, limiting fiscal space for productive expenditures, absorbing financial resources that otherwise could support private investment, and hampering future growth potential. However, growth is likely to improve and debt ratios are likely to return to a sustainable trajectory if the government is able to strengthen revenue collection (e.g., by maintaining the recent tax increases or replacing them with equivalent fiscal measures) and implement the recently adopted FRF. At the same time, caution is advised for any fiscal rule that includes capping capital expenditures. Losses to total factor productivity (TFP) growth from reductions in productive public investment (e.g., infrastructure) could erase much of the gains from a stronger fiscal position. Investments in measures that accelerate productivity growth and enhance human capital (e.g., by improving the

quality of the education system or enacting incentives to reduce the brain drain) can help the country make important progress in achieving faster growth and reducing poverty.

6.3 **The remainder of the chapter is structured as follows: Section B briefly describes the data and the models used in the exercise, Section C discusses the simulation results, and Section D offers some caveats and concluding remarks.** Annexes 9 and 10 develop the CGE and micro-simulation models in more detail. For each scenario, the simulation results are contrasted with a no-reform scenario—hereafter, BaU for business-as-usual—that maintains policy variables as they were in 2007 while aligning the macro variables with the IMF/World Bank forecasts. The main objectives of this chapter is to inform the government of the potential consequences of various reforms and to enable the government to sequence such reforms and/or design policies to compensate any potential adverse impacts on vulnerable segments of society.

B. Model and data

6.4 **This section develops a recursive dynamic CGE model as well as the micro-accounting module used to translate the results into poverty and inequality outcomes.** The CGE analysis is carried out by contrasting a baseline simulation with a set of alternative scenarios for 2007-2020. The results of these simulations are subsequently mapped to the 2007 Jamaica Survey of Living Conditions to explore the potential impacts changes in macroeconomic and sectoral variables on household welfare, poverty, and the distribution of income. The CGE model of this chapter is a recursive dynamic extension of the model used by Bussolo and Medvedev (2008) to analyze Jamaica's labor-supply dynamics and competitiveness. At its core, the model is a standard World Bank single-country CGE model with a mostly neo-classical structure, augmented with a labor-leisure tradeoff in the household utility function that allows labor supply to be determined endogenously (see annex 9 model details). As discussed in Bussolo and Medvedev (2008), the introduction of an endogenous labor supply is particularly important in the case of Jamaica, where labor-force participation rates have been declining due in large extent to increased international remittances (see World Bank, 2007 and Kim, 2007).

6.5 **The model has a base year of 2007, drawing on a collection of data sources.** The base year was chosen in consultation with Jamaican counterparts as the most recent year that can be considered an equilibrium period for the country. The years 2008 and 2009 had large external shocks and consequent distortions to relative prices. Data include a Social Accounting Matrix (SAM) constructed specifically for this exercise and employment by sector and skills calculated from the 2007 Jamaica Labor Force Survey (LFS).[123] Macro data for 2007, including national accounts, government financial statistics, and the balance of payments, were obtained from the Central Bank of Jamaica, Planning Institute of Jamaica (PIOJ), and the Statistical Institute of Jamaica (STATIN). Data on debt stocks was collected from the IMF. Sectoral data on value added and investment were also obtained from the above mentioned Jamaican sources, while the consumption vector has been estimated using data from the 2007 Jamaica Survey of Living

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[123] See the Growth Inclusiveness chapter of this CEM for a description of the LFS.

Conditions (SLC).[124] The input-output coefficients as well as the structure of indirect taxes have been taken from the 2005 Jamaica SAM constructed by Robinson and Willenbockel (2009).[125]

6.6 **The model includes three representative household groups, defined according to the sector of employment and skill level of the household primary earner from JSLC.** Having three representative households—unskilled rural, unskilled urban, and skilled—is important because the sources of income, both labor and other types, vary substantially by household type.[126] For example, the two former groups receive very little income from investments, while the latter group receives a substantial share of its income from interest paid on government bonds. Distinguishing across these three groups adds an important distributional dimension that would have otherwise been lost if all three groups were aggregated together.

6.7 **Following the base year, the model is solved year-by-year through 2020.** To generate a dynamic solution, certain assumptions have been made regarding the evolution of the model's exogenous variables. Growth in the BaU scenario has been calibrated using the near- and medium-term assumptions of the IMF; the evolution of remittances, FDI, and the overall capital account also draws on the IMF sources. For years beyond the IMF projection period (2015-2020), the assumptions extend the trends of several preceding years (2012-2014). The maximum labor supply available in each period evolves according to the World Bank population projections for the 15- to-64-year-old age cohort, but the model determines the actual quantity of labor supplied in each period endogenously.

6.8 **The CGE simulations are complemented with a micro-accounting exercise using the techniques described in Bussolo et. al. (2008) and Ravallion and Lokshin (2008).** The income distribution of 2007, obtained from the 2007 JSLC, is shocked with CGE-generated changes in total household income for each representative household group, prices of the consumption goods bought by each household group, and overall consumption per capita (as a consistency requirement). The exercise produces a counter-factual income distribution. The process is repeated for each scenario and, although solutions for intermediate years could easily be obtained, only the 2020 results are presented and discussed in this chapter (the details of the micro-simulation approach are provided in annex 10).

C. SCENARIO ANALYSIS

C.1. Business-as-usual scenario

6.9 **The BaU scenario incorporates the adverse impacts of the global food, fuel, and financial crises of 2008-09, and projects a smooth but gradual recovery in 2011-2020.** The behavior of the main macro variables is summarized in the first few columns of Table 6.3. The combined impacts of the food, fuel, and financial crises lead to a cumulative loss of 4.6 percent of real GDP in 2008-10 (relative to 2007). From 2011 onwards, the economy recovers gradually, achieving annual growth of 2 percent by 2012 and 2.1 percent in 2014 and each year thereafter.

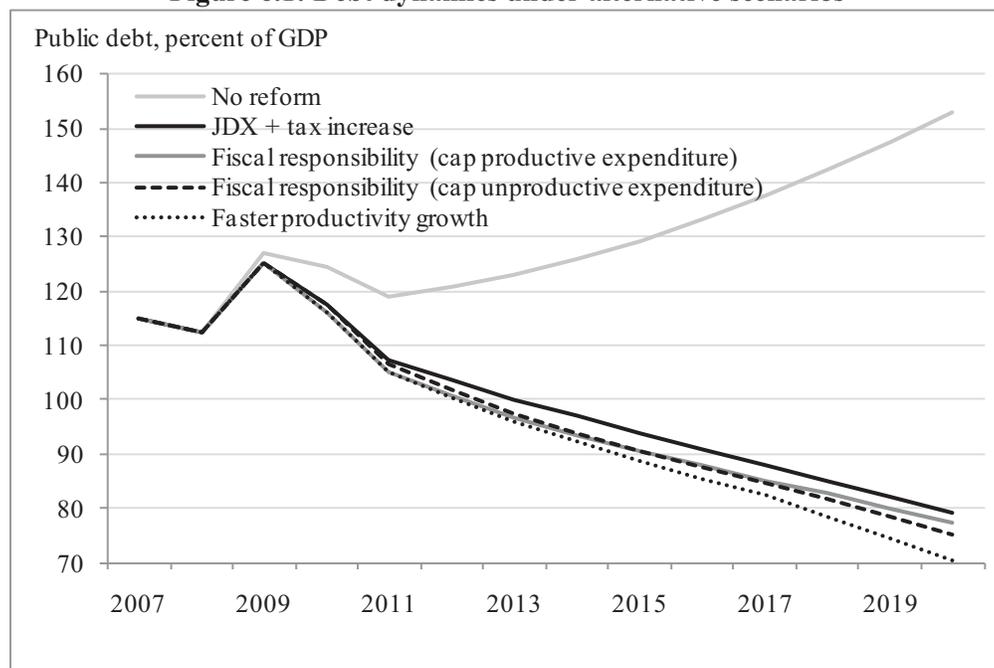[124] See the Growth Inclusiveness chapter of this CEM for a description of the JSLC.
[125] As is normally the case with combining multiple data sources, a final balancing procedure using a cross-entropy approach had to be applied to the input-output coefficients.
[126] Skilled primary earners are those with some type of secondary-school certificate.

The baseline growth is plausible as the recent crisis created a considerable slack in the economy and per capita income grows at an average annual rate of 0.8 percent over the entire period 2007-2020. Following a sharp contraction in 2008-09, growth in exports and imports rebounds in 2010; after that, trade at constant prices grows at a rate similar to real GDP. The real exchange rate, which depreciated significantly in 2009, recovers gradually towards its 2007 level in the following years as the availability of foreign financing improves in the course of the global recovery.

6.10   **The BaU scenario shows that debt sustainability was at great risk without policy reforms implemented in 2008-2010.** In the BaU scenario, the government maintains a fairly strong fiscal stance, with non-interest recurrent outlays remaining around 13 percent of GDP and capital expenditures stable at 3.4 percent. This enables the government to continue recording strong primary surpluses, averaging 6.1 percent of GDP between 2007 and 2020. However, the high level of existing debt and high costs of debt service push the economy on an increasing debt path. By 2012, the stock of public debt exceeds 150 percent of GDP and continues to rise to above 200 percent of GDP by 2020 (see figure 6.1). These debt dynamics illustrate the difficult situation and the pressing need for fiscal and debt reform that faced the government in 2009-2010. Despite the global recovery, and even with strong primary surpluses, the debt trajectory would likely have been unsustainable without aggressive policy action.

Figure 6.1: Debt dynamics under alternative scenarios

6.11   **Under the BaU conditions, poverty and inequality are likely to continue their downward trends but at slower rates than in the past.** Chapter 2 showed that poverty in Jamaica fell from 19.9 percent to 9.9 percent of population between 1997 and 2007, while the Gini coefficient declined from 38.3 in 2003 to 36.8 in 2007. Going forward, these trends are likely to continue but at a much more moderate pace. The micro-accounting exercise shows that, the moderate poverty headcount could fall by another 3.5 percentage points in the BaU scenario,

while the Gini coefficient could decline by half a point (see table 6.1). The main reason the BaU scenario does not deliver more poverty reduction is the relatively slow rate of growth in per capita consumption, which also reflects the significant welfare losses and the sharp rise in poverty experienced by Jamaican households in 2008-09. In addition, this scenario does not incorporate the pro-poor shift in relative prices observed between 2003 and 2007 (see chapter 2 for a more detailed discussion). Finally, poverty reduction is more difficult when the initial headcount is lower—that is, it takes a much higher rate of growth to halve poverty from an initial headcount of 10 percent than from an initial headcount of 20 percent.

Table 6.1: Micro Summary Indicators, 2007 and 2020

	2007	2020, BaU (no-reform)	2020 JDX + Tax Reform	2020 FRF + JDX + Tax Reform	2020 FRF + JDX + Tax Reform less product
Extreme poverty headcount (%)	2.86	1.54	1.54	1.54	1.65
Poverty headcount (%)	9.91	6.41	6.11	6.09	6.89
Poverty gap (x100)	2.48	1.44	1.40	1.38	1.52
Poverty gap squared (x100)	0.95	0.53	0.52	0.51	0.55
Gini	36.78	36.32	36.03	36.05	35.80
Theil (GE1)	23.75	23.13	22.74	22.76	22.43

C.2. Tax reform and Jamaica debt exchange (JDX)

6.12   **The first alternative scenario incorporates the major tax changes in fiscal years 2009 and 2010 as well as the Jamaica debt exchange (JDX) in February 2010.** This JDX + tax reform scenario allows for introduction of the largest measures in terms of expected revenue impacts from the series of tax amendments implemented in FY2009-2010. Among them are the increase of the SCT rate on petroleum and petroleum products from J$7.36 to J$16.11 per liter of unleaded gasoline, the subsequent re-introduction of the ad-valorem component of the SCT on petroleum, and the increase in the general rate of the GCT (see Table 6.2). In addition, the scenario also takes into account the decrease in the rate of interest paid on domestic and foreign debt after the JDX.

6.13   **The improved fiscal outcome of this scenario makes a strong case for strengthening revenue collection because it puts Jamaica on a declining debt path.** The key outcomes of the JDX + tax reform scenario are summarized in the middle columns of Table 6.3. The immediate effect of the tax reform is a J$19.0 billion increase in indirect tax revenue in 2010, somewhat below the government's forecast of J$26.3 billion increase.[127] At the same time, the JDX saves the government another J$29.5 billion in interest expense in 2010. Therefore, the overall result of the policy change is a 5.3 percent of GDP improvement in the overall balance in 2010. This substantial strengthening of the fiscal position broadens the resources available to the government for making debt payments and decreases borrowing needs. Consequently, debt ratios stop rising immediately; by 2014, the debt-to-GDP ratio falls to 130 percent, and it continues

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[127] The discrepancy stems to a large extent from the greater-than-expected impact of the global crisis, which resulted in a stronger than anticipated contraction in economic activity in Jamaica and consequently in lower-than-budgeted tax revenues.

declining to 120 percent of GDP by 2020 (see figure 6.1). Reduced borrowing needs also play into the virtuous circle of lower debt and higher overall balance: compared with the BaU scenario's interest payments of 24 percent of GDP in 2020, the interest costs in the JDX + tax reform scenario are 12 percent of GDP in the same year. The lower interest payments limit the overall deficit to 3.4 percent of GDP, compared to a projected 17.0 percent in the BaU case.

Table 6.2: Revenue measures introduced during FY2009/10

Date introduced	Description of revenue measures	Expected revenue impact (J$ million)
April 23, 2009 (Ministry Paper 26/09)	Increase in income tax threshold	-5,330
	Removal of income tax preferences	1,200
	Reduction in stamp duty and transfer tax rates	-644
	Imposition of GCT on telephone instruments	736
	Removal of GCT exemptions	7,500
	Increase of SCT on petrol and CUF on petroleum products	13,328
	Imposition of withholding tax on dividends for non-residents	1,341
	Total expected revenue impact	**18,131**
May 6, 2009 (Ministry Paper 42/09)	Increase of SCT on cigarettes	1,840
	Increase of SCT on alcoholic beverages	530
	Total expected revenue impact	**2,370**
September 29, 2009 (Ministry Paper 107/09)	Increase of departure tax	609
	Increase of GCT on telephone calls and telephone instruments	1,100
	Total expected revenue impact	**1,709**
December 23, 2009 (Ministry Paper 128/09, revised)	Increase in the standard rate of GCT	3,600
	Re-introduction of the ad valorem component of the SCT	9,400
	Increase in SCT on cigarettes	1,400
	Increase in the rate of GCT applicable to the Tourism Sector	1,200
	Electricity for commercial and industrial customers	1,453
	Pre-payment of GCT on value added merchandise at customs	2,900
	Increase in income tax for high income earners	1,317
	Increase in license fees for luxury vehicles	32
	Removal of certain customs exemptions	25
	Increase in Common External Tariff rate on luxury items	485
	Total expected revenue impact*	**21,812**

Note: GCT stands for General Consumption Tax, SCT for Special Consumption Tax, and CUF for Customs User Fees. For the first three sets of measures, estimated revenue impacts are provided for FY2009/10; for the last set, revenue impacts are annual estimates.

Source: Jamaica Ministry of Finance.

6.14 **The improvement in the fiscal position has important positive spillovers for real GDP growth.** Initially, growth is impacted negatively by the tax increase—the contraction in 2009 is 2.6 percent, rather than 2.5 percent without the tax increase. However, growth recovers

quickly. By 2015, it is 0.2 percentage points higher than in the BaU; by 2020, the premium widens to 0.3 percentage points. As a result, GDP per capita in 2020 is more than 2 percent above the BaU GDP of the same year. The positive growth spillover is mainly due to the decreased borrowing needs of the government, which has a positive impact on private investment.

6.15 **Real consumption per capita remains unchanged in this scenario.** This is because the JDX + tax reform scenario in reality represents a transfer of resources within the economy and does not generate new income. The gains in real GDP are observed because the economy's resources are shifted towards accumulation of new capital stock, rather than debt financing that does not create factors of production. However, the reduction in public borrowing is only made possible by taxing households and enterprises at higher rates and lowering the rate of return on their bond holdings. Therefore, the policy shock initially represents an income loss to households. In time, the losses are offset by increased demand for investment goods, which stimulates domestic output and increases demand for domestic factors of production, and by the efficiency gains from reversing the falling capital-output ratio in the BaU scenario. However, the efficiency gains are also limited by the choice of financing instrument because increases in indirect taxes distort economic incentives and erode competitiveness.[128]

6.16 **Although shifts into indirect taxation are usually regressive because poor consume a larger portion of their incomes, the incidence of the petrol tax is actually progressive.** The petrol tax increase is welfare-enhancing on average, but its implementation could have adverse distributional effects if gasoline represents a larger share of total spending in poorer households than in richer ones. This is normally why consumption taxes are considered regressive—affecting a greater share of poor household's income than rich household's income. However, raising gasoline taxes is unlikely to widen welfare disparities in Jamaica because spending on gasoline as a share of total consumption is an increasing function of household welfare. For any household, gasoline consumption is a small share of its total budget; however, a poor household normally spends approximately 3 percent of its total expenditure on gasoline, while the share for a non-poor household is 4.7 percent. Therefore, the increase in the petrol tax imposes a higher relative burden on the rich households than on poor ones.
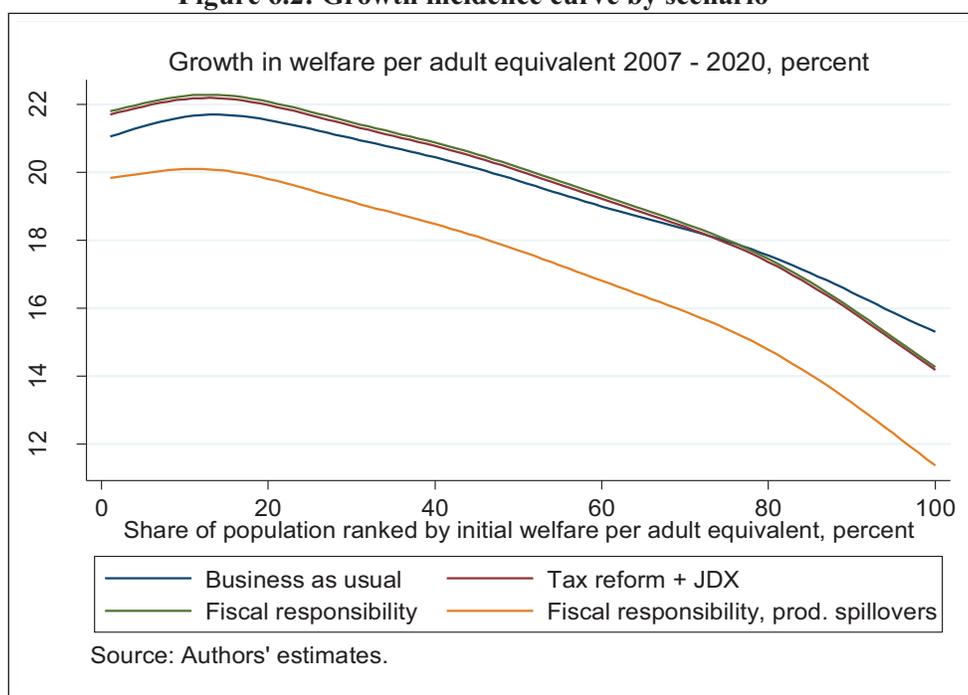
6.17 **The incidence of a reduction of interest payments on domestic debt is quite progressive.** There is no information in the JSLC or other readily available data sources on the distribution of interest income from Jamaican government bonds. However, the JSLC does contain a question on dividend, interest, and rental income, and this information has been used to allocate the bond interest receipts across the three representative household groups in the CGE model. The data indicate that households with skilled primary earners receive approximately 84 percent of all dividend, interest, and rental income in Jamaica, while households with unskilled primary earners in urban occupations receive another 15 percent. Households with unskilled primary earners in rural occupations receive less than 1 percent of total interest income. Therefore, the distribution of interest income is heavily biased towards richer skilled households, and a reduction in interest earnings due to the JDX would affect rich households much more than poor households.

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[128] This scenario is an example of a second-best outcome, when adding an extra distortion (higher taxes) may be beneficial in the presence of other distortions (high debt).

6.18   **The micro model results show that the reform scenario leads to additional poverty reduction and lower inequality, although the differences with respect to the BaU scenario are quite small.** The third column of table 6.1 shows that in the JDX + tax reform scenario, the moderate poverty headcount could fall by an additional 0.3 percentage points, while the Gini coefficient could decline by more than a quarter points. Although these differences are small, there are several reasons to doubt this scenario would produce a big boost in poverty reduction. First, consumption per capita does not increase relative to BaU, which means that poverty reduction can come only from distributional changes. Second, some distributional changes are pro-poor—the increase in the petrol tax and the reduction in bond coupon payments affect rich households more than poor ones—but other changes are biased against the poorest households. These include the GCT rates' overall increase, which hurts poor households who spend all of their income on consumption, and the large increase in demand for investment goods, which do not require rural factors in the production process. As a result, the wages of unskilled rural households decline relative to those of unskilled urban and skilled households. On balance, the pro-poor distributional changes outweigh the anti-poor ones—as shown by the downward and greater slope relative to the BaU scenario in the growth incidence curve in Figure 6.2. However, the overall distributional change—and hence poverty reduction—is not particularly large.

Figure 6.2: Growth incidence curve by scenario

Source: Authors' estimates.

C.3. Fiscal responsibility framework

6.19   **The second reform scenario strengthens fiscal discipline even more through the adoption of the FRF, which limits fiscal deficits and further improves debt dynamics.** In this scenario—in addition to implementing the tax reform and the JDX—the government adheres to a fiscal rule whereby the overall deficit is kept below 2 percent of GDP in every year after 2011, with capital expenditures bearing the brunt of adjustment. This fiscal rule is just an assumption,

and other adjustments could be made in the budget to reach a deficit target—for example, reducing wage or non-wage recurrent expenditures. In practice, however, capital expenditures are the most likely candidate for spending cuts in most countries (see, for example, Hauptmeier et al (2006) on successful EU fiscal reform episodes). The results of this simulation—JDX + tax reform + FRF—are shown in the last few columns of table 6.3. The slower accumulation of debt due to the implementation of the fiscal rule brings down final-year debt ratios even further, relative to the previous scenario. Instead of more than 200 percent of GDP in the BaU scenario and 120 percent of GDP in the JDX + tax scenario, the debt-to-GDP ratio now declines to below 106 percent by 2020. As in the previous reform scenario, the reduced borrowing needs of the government lessen the crowding out of private-sector investment and yield some small growth spillovers. However, most of the debt reduction in the JDX + tax reform + FRF scenario occurs from slower debt accumulation, not faster growth. Moreover, because growth does not accelerate much and other changes are similar to the JDX + tax reform scenario, poverty reduction is only marginally larger relative to the previous simulation (see table 6.1).

6.20   **The results of this scenario should be interpreted with caution because the type of capital expenditures being cut can make a substantial difference in growth performance and the debt profile.** The JDX + tax reform + FRF scenario assumed no negative spillovers from reduction in government capital expenditures. However, a large literature (dating back to Aschauer, 1989) has documented the positive links between public infrastructure investment and TFP. The magnitude of any such productivity elasticity is an empirical question; however, to illustrate the importance of such spillovers, we assume a plausible value— a 10 percent reduction in the public capital stock yields a 1 percentage point reduction in the average annual growth rate of labor productivity in manufacturing and services. Under the fiscal rule as in the scenario used in the previous paragraph, the debt-to-GDP ratio in 2020 is now 5.4 percentage points higher than it would have otherwise been, and the debt path begins to converge to the one recorded under the JDX + tax reform (and no FRF) scenario (see figure 6.1). This is largely an outcome of productivity losses eroding GDP growth, with per capita income growing 50 percent slower than it would have been with no negative productivity spillovers (i.e., under the standard JDX + tax reform + FRF scenario). Clearly, the magnitude of the productivity loss—and, consequently, the extent of the worsening debt performance—depends on assumptions about the relevant elasticity. However, this scenario's aim is not to estimate the exact losses in productivity and GDP growth due to reductions in capital spending; rather, it is to illustrate the critical point that reduced productive public capital spending (e.g., investments in infrastructure) may not yield an improved debt performance over the long term if such expenditure cuts limit the economy's ability to grow. Moreover, as illustrated by the last column of Table 6.1, the losses in per capita growth in this scenario could hamper the progress on poverty reduction. The headcount is nearly 0.8 percentage points (or 13 percent) larger than in the scenario with no productivity losses and nearly 0.5 percentage points higher than in the no-reform scenario.

C.4. Accelerated productivity growth

6.21   **Economic research and other chapters of this CEM have identified low productivity growth as an important constraint to Jamaica's growth.** Jamaica can improve its level of productivity by, for instance, reducing crime, enhancing human capital accumulation and lowering the debt overhang. To illustrate how changes in productivity could affect the overall

performance of Jamaica's economy, this section develops an alternative scenario of accelerated productivity growth and contrasts this simulation with the BaU and the JDX + tax reform scenarios.

6.22   **In the BaU scenario, productivity grows at an average annual rate of 0.7 percent, similar to Jamaica's observed TFP growth between 2000 and 2008.** As described in more detail in Appendix A, the path of productivity growth in the CGE model is factor-specific. Capital productivity remains fixed throughout the model horizon, which is consistent with econometric evidence on long-term trends in the rate of return to capital. Meanwhile labor productivity in the BaU scenario is calibrated to achieve the IMF-forecasted growth rate in real GDP. The rate of growth of (Harrod-neutral) technical change required to achieve the forecasted performance works out to a 0.8 percent annual average (2007-2020). This is somewhat above the 0.7 percent annual average rate of technical change estimated in another chapter of this CEM for the period 2000-2008.[129] However, it is much faster than the 0.08 percent average annual rate for the period 2004-2008, when the real GDP grew by less than 1 percent a year. Moreover, excluding the three years of negative growth (2008-2010), labor productivity in the medium term (2010-2020) is assumed to grow at a much faster average rate of 2.7 percent per year. This high rate of labor productivity growth is required to achieve the targeted growth performance at the time of declining investment rates due to the high public debt burden and consequent crowding-out effects (see the discussion in Section 2 of this chapter).

6.23   **To reach a post-crisis (2011-20) average real GDP growth of 3.0 percent, productivity growth would have to rise to 3.9 percent a year, or 1.8 percent a year for the entire 2007-2020 period.** These implied rates of productivity growth would be high by both regional and international standards. However, they underscore the challenges facing an economy where high investment rates have not translated into accelerated growth, population growth is slowing, the educational system has struggled to produce enough skilled workers (as evidenced by poor exam performance and other quality issues highlighted in this CEM's labor chapter), and emigration rates are for high for skilled workers (again, see the labor chapter for an in-depth discussion).

C.5. Increased skill content of the labor force

6.24   **Low labor skills and training were identified as key constraints in chapters 3 and 4 of this report.** Jamaica can increase its growth potential by improving labor skills and maintaining the educated labor force in the country as well as by reversing the brain drain. In 2007, 28.7 percent of Jamaica's employed workers could be considered skilled, using the definition of a secondary-school certificate. As discussed earlier in this chapter (and in the labor chapter), skill levels of Jamaican labor force cannot be defined simply by years of schooling due to quality and test-performance issues. In acknowledgement of this difficulty, this chapter defines skilled workers as those who have obtained some sort of secondary-school certificate. Benchmarking against other countries in the region shows that Jamaica is not that much below the LAC average of 32.2 percent—or 29.6 percent when outliers are excluded.[130] However, the

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[129] During this period, real GDP (in local currency) grew at an average annual rate of 1.56 percent.

[130] St. Kitts and Nevis and Trinidad and Tobago each have more than 60 percent of the labor force with secondary education.

country could still benefit from additional investment in skill formation and retaining skilled workers.

6.25 **Productivity, growth, and export performance improve in an alternative simulation that brings the share of skilled workers in total employment to 30 percent by 2020, compared with 28.4 percent in the JDX + tax reform scenario.** The supply of skilled workers in 2020 rises by 4.7 percent relative to the JDX + tax reform scenario through an acceleration in the growth rate of skilled labor force between 2010 and 2015. Overall productivity increases due to higher skill content of the labor force, and higher incomes associated with higher productivity give rise to greater saving, investment, and capital accumulation. As a result, real GDP in 2020 is 0.7 percentage point higher than in the JDX + tax reform scenario, despite the fact that overall employment actually falls by approximately 6,000 workers, or 0.5 percent.[131] This is not only a level effect; the real GDP growth rate accelerates due to higher skill content, and gains would likely be larger in later years. Exports in 2020 increase by 0.75 percent relative to the JDX + tax reform scenario, and they become more intensive in manufacturing and less intensive in sectors that tend to use a less skill-intensive input mix, such as agriculture and services. The wage dynamics also change, with the additional supply of skilled workers lessening the upward pressure on skilled workers' wages. At the same time, unskilled workers become relatively scarcer and therefore receive higher wages than in the JDX + tax reform scenario. However, these changes are quite minor and do not have a material effect on aggregate inequality. Due to higher growth, poverty falls by an added 0.02 percentage point.

D. CONCLUSIONS

6.26 **This chapter's forward-looking scenarios have been developed with a CGE model and a simple micro-accounting module for modeling distributional effects.** As with any *ex ante* exercise, the models come with a set of important caveats and qualifications. First, the results are not intended to serve as forecasts. The forecasting performance of the models used in this chapter has not been validated with historical data and, in fact, CGE models tend to underperform relative to other models in forecasting macroeconomic trends. Second, standard CGE critiques of fairly restrictive functional forms and little empirical validation of elasticity values also apply here. Although care has been taken to use appropriate parameter values, many estimates are simply not available for Jamaica. Third, data limitations both on the macro and micro sides have led to a number of simplifications and approximations. For example, the distribution of bond interest income across households has been approximated with a distribution of all dividend and interest income, and the welfare function in the micro data could only be defined at the household level (not the individual level). Even with these limitations, the results can provide useful information to policymakers. First, the types of models used in this chapter tend to do well in a simulation setting, highlighting policies' macro and micro marginal changes, both in direction and relative magnitude. In particular, the comparative static version of this chapter's CGE model yielded the same policy conclusions as a forward-looking, rational-expectations dynamic-stochastic general equilibrium (DSGE) model (see Bussolo and Medvedev, 2008). Moreover, the CGE model's policy conclusions have been shown to be robust within a reasonable range of key elasticity values. Finally, research shows that more

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[131] As discussed earlier in the paragraph, this decline in the labor supply is linked to higher income and therefore higher demand for leisure.

sophisticated modeling techniques tend to add realism and detail to the more simple micro-accounting methods, but the basic conclusions tend to be the same.

6.27 **The chapter's simulations show that Jamaica's debt trajectory probably would have turned explosive and unsustainable without the tax reforms and the debt exchange in FY2009-2010.** Under the JDX + tax reform scenario, the debt-to-GDP ratio in 2020 is estimated at close to half the debt ratio in the BaU scenario. Growth performance and poverty reduction also improve in the reform scenario, and the fiscal position is strengthened substantially. Even though policy reform does not generate additional national income within the model's time horizon, the transfer of resources from unproductive expenditure (debt service) to productive expenditure (private capital formation) leads to a more rapid accumulation of productive factors and faster GDP growth. Finally, although policy reform gives rise to both progressive and regressive distributional shocks, the progressive shocks dominate and the distribution of income improves at the same time as debt ratios decline.

6.28 **Additional fiscal consolidation—achieved by adhering to the FRF's fiscal deficit rule, can yield further growth and debt reduction benefits, but policymakers must use caution in identifying opportunities for expenditure cuts.** In most cases, capital expenditure is one of the first items cut when nation face overall resource constraints. As the simulations in this chapter show, however, reducing productive public capital expenditure may lead to lower growth through negative productivity spillovers, largely nullifying the benefits of additional fiscal consolidation. Because per capita growth tends to be the most important determinant of poverty reduction over the long term, the fight against poverty can suffer important setbacks if productive public capital expenditure is kept below optimal levels.

6.29 **Investments in accelerating labor productivity growth and raising labor's skill content can pay important dividends in faster growth and improved export performance.** This chapter's simulations do not describe the explicit channels through which these improvements may be realized (the labor chapter and other parts of this CEM offer some suggestions). The key lesson, however, is that these types of reforms, if successful, can have not only level but also growth effects on real GDP and export performance. Therefore, they should be prioritized and explored in more detail.

Table 6.3: Macro Summary Indicators, 2007-20

	BaU						TaxJDX					FiscResp				
	2007	2008	2009	2010	2015	2020	2008	2009	2010	2015	2020	2008	2009	2010	2015	2020
National accounts (percent change y-o-y)																
GDP at constant prices		-1.70	-2.50	-0.50	2.10	2.10	-1.70	-2.62	-0.41	2.34	2.48	-1.70	-2.62	-0.41	2.43	2.54
Private consumption		-0.7	-4.9	1.3	2.5	2.6	-0.7	-5.6	0.7	2.6	2.7	-0.7	-5.6	0.7	2.5	2.7
Public consumption		-1.7	-2.5	-0.5	2.1	2.1	-1.7	-2.6	-0.4	2.3	2.5	-1.7	-2.6	-0.4	2.4	2.5
Investment		7.5	-38.8	10.6	1.3	0.0	7.5	-37.4	16.3	2.5	2.0	7.5	-37.4	16.3	3.2	2.6
Exports		-7.8	7.2	5.2	1.8	2.0	-7.8	6.5	3.6	1.9	2.2	-7.8	6.5	3.6	2.0	2.3
Imports		0.4	-18.9	10.7	2.2	2.0	0.4	-19.3	11.0	2.5	2.5	0.4	-19.3	11.0	2.6	2.6
Balance of payments (US$ million)																
Current account balance	-1,968	-2,315	-864	-1,020	-1,328	-1,356	-2,315	-864	-1,020	-1,328	-1,356	-2,315	-864	-1,020	-1,328	-1,356
(as percent of GDP)	-14.5	-16.9	-7.1	-7.9	-9.3	-8.6	-16.9	-7.1	-7.8	-9.2	-8.3	-16.9	-7.1	-7.8	-9.1	-8.3
Balance on goods and services	-3,344	-3,776	-2,083	-2,301	-2,980	-3,292	-3,776	-2,078	-2,396	-3,194	-3,696	-3,776	-2,078	-2,396	-3,204	-3,737
(as percent of GDP)	-24.6	-27.6	-17.0	-17.7	-20.9	-21.0	-27.6	-17.0	-18.4	-22.0	-22.7	-27.6	-17.0	-18.4	-22.0	-22.9
Exchange rate	68.95	68.32	72.11	69.26	69.20	69.33	68.32	71.87	68.87	68.74	68.79	68.32	71.87	68.87	68.72	68.77
Public finance (percent of GDP)																
Overall balance	-4.1	-6.9	-8.7	-10.6	-12.5	-17.0	-6.9	-7.1	-5.3	-3.8	-3.4	-6.9	-7.1	-5.3	-2.0	-2.0
Government revenue	23.3	23.4	22.7	22.9	23.2	23.3	23.4	24.2	24.7	24.9	24.8	23.4	24.2	24.7	24.9	24.8
Total expenditure	27.4	30.3	31.4	33.5	35.7	40.2	30.3	31.3	30.0	28.7	28.2	30.3	31.3	30.0	26.9	26.8
Recurrent expenditure	24.0	26.0	27.9	28.5	32.3	36.8	26.0	27.8	25.0	25.3	24.8	26.0	27.8	25.0	24.7	23.7
Capital expenditure	3.4	4.3	3.5	5.1	3.4	3.4	4.3	3.5	5.1	3.4	3.4	4.3	3.5	5.1	2.1	3.1
Debt	115	127	141	145	168	205	127	140	139	128	120	127	140	139	119	106
Foreign	51	67	78	81	93	111	67	77	79	77	75	67	77	79	74	69
Domestic	64	60	63	64	75	95	60	63	60	51	45	60	63	60	45	36
Memo (percent change y-o-y)																
Employment		1.638	2.430	1.125	1.020	0.325	1.638	2.362	1.138	1.034	0.346	1.638	2.362	1.138	1.055	0.364
Population		0.426	0.463	0.499	0.368	0.343	0.426	0.463	0.499	0.368	0.343	0.426	0.463	0.499	0.368	0.343

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PART III: UNLOCKING THE POTENTIAL FOR PRIVATE SECTOR DEVELOPMENT AND GROWTH

The analysis in Part I and II of this report has identified key growth obstacles in Jamaica and the factors leading to these obstacles. It showed that deficiencies in human capital and entrepreneurship, high crime environment and the combination of high debt, distortive tax incentives, and the promotion of "enclave" development with little spillovers to the rest of the economy significantly constraint productivity and growth. Potential growth and distributional impacts of reforms to alleviate some of these obstacles were also analyzed in Part II with model simulations. Part III of this report looks at how Jamaica can further accelerate growth through greater export orientation and long term focused private sector development, if the above mentioned key growth constraints are removed or eased.

CHAPTER 7.   PRIVATE SECTOR GROWTH, EXPORTS, AND BUSINESS ENVIRONMENT

This chapter analyzes business environment and private sector development in Jamaica. The objective of the chapter is to understand how Jamaica could benefit from greater export orientation and long term focused private sector development, if the key growth obstacles identified in Part I and II of this report are removed or eased. The analyses indicate that economic activity in Jamaica is highly concentrated, Jamaican exporters have been losing competitiveness and have not taken advantage of emerging opportunities in the global marketplace. Crime and violence, along with complicated tax policy and poor logistics, have constrained firms' growth. Jamaica can accelerate its private sector development through reforms to improve business environment. The improved environment can stimulate productivity in sectors where Jamaica has a comparative advantage, as well as encourage the emerging new activities. The private sector must move away from the poor performance of past decades and enhance competitiveness, improve diversification, and raise productivity including, among other things, investing in on the job training of workers.

A. INTRODUCTION

7.1   **The potential for accelerating future growth primarily rests on the ability of Jamaica to remove or at least ease the key growth obstacles identified in Part I and II of this report. Once the key obstacles are removed, Jamaica can accelerate growth by enhancing private sector development.** The analysis in Part I and II of this report has identified a number of growth obstacles—mainly low productivity caused by deficiencies in human capital, high crime and distorted tax and incentive regimes. Removing or easing these obstacles will be critical for creating an environment conducive to growth and broad based economic development. The improvements in overall macroeconomic environment should encourage private sector to investment and produce more. Jamaica's private sector, however, also faces other constraints specific to business environment. Primary products and tourism have increasingly dominated exports, and the 1980s' expansion into the textile industry quickly surrendered to pressures from regional and global competitors. Sectoral growth rates in Jamaica have lagged international competitors, and Jamaican exporters have been losing global market share, even in areas of increasing specialization like tourism. The country has not taken advantage of opportunities to transition into new, fast-growing products or to use its current exports as a launching pad for broadening its product space. Therefore Jamaica can further benefit from improving the business environment, increasing export orientation and laying the ground for a long term focused private sector development. A strong, diverse, and vibrant private sector will be important for Jamaica's long-term growth and development.

7.2   **This chapter explores the private sector dimension of growth in Jamaica over the past few decades, focusing on sectoral growth, export performance, and the business environment**. It examines the evolution of the composition of Jamaican output and exports, as well as the drivers of sectoral profitability. The chapter compares Jamaica's performance along these dimensions with other countries in the region, and assesses the extent to which Jamaican firms have been able to take advantage of opportunities to diversity into new products and markets. Finally, the chapter explores the constraints to private sector growth in Jamaica, as

viewed by Jamaican entrepreneurs themselves. The analysis in this chapter shows that Jamaica can accelerate growth through reforms to improve business environment, increase export orientation and enhance long term focused private sector development. The improved environment can stimulate productivity in sectors where Jamaica has a comparative advantage, as well as encourage the emerging new activities. The private sector must move away from the poor performance of past decades and enhance competitiveness, improve diversification, and raise productivity including, among other things, investing in on the job training of workers.

7.3   **The chapter is structured as follows: Section B explores sectoral growth and profitability, Section C focuses on export performance, Section D discusses the business environment, and Section E offers some concluding remarks**. The main objective is to assess the evolution of sectoral output, exports, and the business environment in Jamaica and provide an analytical platform for discussing growth strategies for the future. The chapter also aims to provide a deeper examination of issues that may be constraining Jamaica's private-sector growth, including labor productivity and labor market policies, public financial management and governance, and political economy of reforms.

B. **SECTORAL GROWTH AND PROFITABILITY**

B.1. Growing importance of services and the decline of manufacturing

7.4   **One of the main features of the Jamaican economy in the past two decades has been the steady decline in the share of manufacturing activity and the large increase in the importance of services**. In 1995, the services sector was just over half of total value added; by 2007, it accounted for 70 percent of value added and more than half of total exports. The services sector is also the largest employer on the island, accounting for an average 63 percent of the employment during 2004-2008.

7.5   **Within services, the composition has been relatively stable over the past two decades.** On average in the 2000s, wholesale and retail trade accounted for the highest share of GDP (18.1 percent), followed by production of government services (11.5 percent), transport and communications (11.2 percent), and finance and insurance services (10.3 percent). In terms of sectoral growth, real estate and renting, transport and communication, finance and insurance and construction performed the best in the 2000s (see table 7.1). Hotels and restaurants and manufacturing grew only modestly. The worst performing sectors in the 2000s were mining, which declined 2.1 percent a year, and electricity and water supply, down 1.2 percent a year.

Table 7.1: Sectoral real growth rates in Jamaica

	Averages 90s	Averages 2000s
Agricultural, Forestry & Fishing	0.7%	1.4%
Mining & Quarrying	1.3%	-2.1%
Manufacture	2.3%	1.2%
Electricity and Water Supply	-3.1%	-1.2%
Construction	3.8%	2.3%
Wholesale and Retail Trade	-1.8%	1.8%
Hotels & Restaurants	0.9%	1.2%
Transport, Storage & Communication	3.4%	3.4%
Finance & Insurance Services	8.1%	3.3%
Real Estate, Renting	0.9%	3.6%
Producer of Government Services	1.3%	1.4%
Other Services	-0.5%	0.5%

Source: STATIN

7.6   **Manufacturing was the third most important sector in Jamaica in the 1990s, with 12 percent of total value added, but it decreased in importance to around 9 percent in the 2000s, sinking to fourth below transport and communications.** Within manufacturing, most of the decrease in activity has come from the decline of the apparel industry in the second half of the 1990s (see figure 7.1).   More competitive labor costs drove many companies to other Caribbean and Central American countries. Due to a lack of significant investments and marketing efforts, Jamaican firms were, for the most part, unable to move up the value chain to higher quality products. The food-processing sector, while experiencing significant growth, has not been able to make up for the apparel sector's decline, and as a consequence, manufacturing value added has decreased steadily in real terms since the mid-1990s.

Figure 7.1: Gross Value Added by Selected Manufacturing Sectors

Source: STATIN NIP Tables, figures in 2003 constant prices

7.7   **The structural change in Jamaica's economy has not differed from many of its neighbors and main competitors**. The only exception among the four countries in figure 7.2 is Trinidad & Tobago, where industrial value added as a share of GDP has increased at the expense of services. However, this development is specific to Trinidad & Tobago and is linked mostly to the development of its oil and gas reserves. Nonetheless, when compared to other countries in

the region, Jamaica's lack of economic dynamism becomes evident. Annual growth rates for both the agricultural and industrial sectors have lagged competitors, such as the Dominican Republic. Even the services sector has shown a substandard performance.

Figure 7.2: Sectoral Shifts: Jamaica and Caribbean Comparators

Source: WDI

Services correspond to ISIC divisions 50-99 and they include value added in wholesale and retail trade (including hotels and restaurants), transport, and government, financial, professional, and personal services such as education, health care, and real estate services.

7.8 **Not only has the performance of leading Jamaican sectors lagged international competitors, but their emergence has also steered the country in a direction of an enclave economy**. Mining, which is basically bauxite and alumina, is highly capital intensive, but the initial impact of the investment is not in line with its size, given that most of the capital goods and services used are imported. Mining employs less than 1 percent of the country's labor force and has few linkages with the other sectors of the economy. The tourism industry employs approximately 80,000 persons directly and 180,000 indirectly, making it responsible for 10 percent of total employment (Economic & Social Survey, 2007). In many other countries, tourism has major spillover effects; by contrast, inter-sectoral linkages from Jamaica's tourism are weak and have been exacerbated by the promotion policies aimed at this sector. Similarly, ICT has been a strategic and fast-growing sector, promoted through tax incentives. Some of these benefits are included in the Export Free Zone Act, an arrangement that could prevent the development of strong links between firms located in these zones and others sectors or enterprises.

B.2. Falling profitability of production

7.9   **Profitability of production is often used a measure of competitiveness**. Comparing the changes in unit labor cost and the GDP deflator gives an indication about an economy's development of profitability (see Marsh and Tokarick, 1996, and Jamaica, IMF Selected Issues, 2000). If aggregate unit labor costs are increasing faster than the GDP deflator, then, assuming all else is equal, the profitability of production—or the return on capital—is declining.

7.10   **Despite their high growth performance, the services sectors performed differently in terms of profitability and in terms of attracting FDI.** Large profitability losses occurred in the 1990s, whereas in the 2000s profitability was much more stable (see figure 7.3). Most types of services neither lost nor gained profitability in the previous decade, although wholesale and retail trade sagged and finance and insurance was an exception with a considerable gains. Among the service sectors for which FDI data is available, tourism led the way, followed by information technology and communication. The insurance subsector received modest inflows.

Figure 7.3: Evolution of Sectoral Profitability

Source: STATIN, author's calculation

7.11   **The performance in non-services sectors was also diverse, with agriculture, manufacturing, and electricity performing well and mining falling behind.** While growing modestly, agriculture, forestry, fishing, and the manufacturing sector displayed improving profitability and solid FDI inflows. Although it was still negative, the value added growth in the electricity sector has recovered during the 2000s and profitability improved. In contrast, the mining sector has not performed well by the growth and profitability metrics. In the 2000s, its

value added contracted and profitability decreased (although by less than during the 1990s). At the same time, the sector attracted almost 30 percent of all Jamaica's FDI inflows.

Figure 7.4: Changes in sectoral real wages versus profitability loss

Changes in real wages versus loss in profitability, non-services sectors, 1993-2007

$y = 0.0208x + 0.7184$

Source: Author's calculations

7.12   As a general observation, sectors also grew slightly faster in years they became more profitable or in the years after they became more profitable. A simple regressions analysis shows that the higher the loss in profitability, the lower the sectoral growth rate in the same year or in the subsequent year. The regression analysis also shows that the loss of profitability is positively correlated with changes in real wages (see figure 7.4).[132] The result suggests that Jamaica's real wage grew faster than labor productivity, contributing to a reduction of profitability.[133] Over all, Jamaica's labor productivity has been falling while its real wages have been rising, and the resulting growth in unit labor costs and decline in profitability have contributed to the erosion of Jamaica's competitiveness and attractiveness as a place for business and investment.

C. EXPORT PERFORMANCE

C.1. Export growth

7.13   As a small, open island economy, trade has historically been very important to Jamaica, accounting for 111 percent of GDP in 2008. Jamaica's export performance, however, has been weakening. The importance of exports to overall GDP diminished since the early 1990s, driven in part by a dramatic decline of the apparel industry (see figure 7.5). Although exports have since recovered, their current share of GDP is still below what it was in the early 1990s.

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[132] The analysis is restricted to the non-services sectors because of data restrictions on the real wage per workers in the services sectors.

[133] The mining sector is an interesting exception to this observed relationship. Its labor productivity grew quite rapidly during the 1990s, while profitability was declining. Normally, faster labor productivity growth implies slower growth in unit labor costs and, *ceteris paribus*, rising profitability. However, the mining sector in Jamaica is highly export intensive and, at least in the 1990s, had a high share of state ownership. Consequently, the sector's workers took advantage of wage bargaining to obtain high salary increases. Because the international bauxite prices have hardly grown over time, the sector was unable to pass on the higher wage costs to consumers. Despite declining profitability, strong FDI inflows indicate the mining sector continued to represent an attractive investment opportunity relative to other Jamaican sectors.

7.14   **Between 1980 and 2008, goods exports grew at an annual average of 4.4 percent, considerably below the Latin American average of 8.9 percent.** Consequently, Jamaica's global market share in goods exports has been falling since 1980, while the average for Latin America has been increasing. Some other Caribbean countries have also experienced losses of export market share; however, the loss was much more pronounced in Jamaica than most of its neighbors (see figure 7.6).[134] Some of this loss in export competitiveness, especially in the second half of the 1990s, has been attributed to appreciation of the currency (see World Bank, 2004 and Blavy, 2006). However, the real effective exchange rate (REER) throughout the 2000s has not seen the large appreciation of the 1990s, and according to the IMF, it has been "broadly in line with equilibrium" during this decade (IMF, 2010).

Figure 7.5: Main Manufacturing Exports

Source: COMTRADE data

Figure 7.6: Export Market Share for Jamaica and Comparators

Source: COMTRADE data (ISIC Revision2)

7.15   **In the past couple of decades, one of the bright spots in Jamaica's export performance has been the rapid growth for the textile industry between 1986 and 2000, due largely to preferential trade agreements with the U.S.**[135] Textile exports took off after Jamaica gained preferential access to US textile markets under the Caribbean Basin Agreement of 1984, sparking an inflow of FDI. However, growth leveled off and turned to a gradual decline when Mexico received even better access under the North American Free Trade Agreement

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[134] Not all Caribbean countries have lost market share in this period. For example, Trinidad and Tobago's share has more than doubled since the early 1990s.

[135] Jamaica participates in four main preferential schemes: Caribbean Basin Initiative (CBI, with duty-free access to US market for a specified list of products); Commonwealth Caribbean countries (CARIBCAN, with duty-free access to the Canadian market for most products—except textiles and apparel—as long as they satisfy the specific requirements of rules of origin); Generalized System of Preferences (GSP, with Jamaican products receiving benefits in Australia, Austria, Canada, the Czech Republic, the European Union, Japan, New Zealand, Poland, the Slovak Republic and Switzerland); and the African, Caribbean and Pacific group (ACP, with benefits with the European Union, that in the case of Jamaica covers trade in bananas, sugar and rum). These preferential trading agreements have been replaced by Economic Partnership Agreements, free trade areas that will enter fully into force in 2020. Trade liberalization is considered a major economic concern in upcoming years as many products—mainly from agricultural sector—are losing their preferential market access.

(NAFTA). The share of textiles and apparel in total Jamaican exports fell from 26.2 percent in 1995 to 2.3 percent 10 years later. In value terms, textile exports fell at an average annual rate of 19 percent. In the 2000 Caribbean Basin Trade Partnership Act, Jamaica along with the rest of the Caribbean achieved "NAFTA parity" for textiles, but this has not prevented firms from closing shop, citing increased competition from countries like Mexico and China, high operating costs, and expensive capital. Today, apparel exports have disappeared from Jamaica's export basket, although other manufacturing sectors, mainly food processing and beverages, have been able to expand.

7.16 **The case of the textile industry is a good example of the contribution of preference erosion to the poor performance of Jamaican merchandise exports.** Jessen and Vignoles (2005) estimate that almost 55 percent of Jamaica's merchandise exports (in value terms) enjoyed some form of preferential treatment in 2004: another 37 percent received most favored nation (MFN) duty-free treatment. However, Jamaica's main export products—sugar, bananas, and textiles—have suffered very high erosion of trade preferences. Bananas, for instance, were affected when EU introduced a single-market regime for this product in 1994, while apparel exports nearly disappeared after NAFTA.

7.17 **The mining industry remains an important foreign exchange earner in Jamaica, although the performance has varied with the swings in global prices.** In the past four years, for example, Jamaican exports have been growing in value terms at 15 percent a year. However, if the bauxite and alumina exports (and re-exports of oil) are eliminated from the export basket, the annual growth falls to just 8 percent, illustrating that recent export growth has mostly been due to high alumina prices.

Figure 7.7: Performance of Service Sector

Source: Author's calculations, based on ITC, IMF BOP Tables and WDI data

7.18 **As with trade in goods, Jamaica has lost global market share in tourism and the broader services sector**. Like the rest of the Caribbean, Jamaica depends on services for a large share of exports—around 55 percent in 2008 (see figure 7.7). Jamaica's share of world service exports stood at roughly 0.13 percent between 1988 and 2000, and it declined to less than 0.08 percent in 2008. At the same time, average service exports shares for the Caribbean and Latin America stayed relatively constant, which means that Jamaica has lost ground relative to its regional competitors (see figure 7.8). Between 1991 and 2008, for example, Jamaica's rate of growth in overall export of services was about half of Costa Rica's rate.

Figure 7.8: Growth of Services Exports: Jamaica and Comparators

Source: IMF BOP data
* except for Trinidad and Tobago, average up to 2007

7.19 **Travel is the main foreign exchange earner for Jamaica's services sector, accounting for 72 percent of service exports and 42 percent of total exports in 2008.** Tourist arrivals have been growing above the Caribbean average, but the Jamaican business model has been based on large, all inclusive international hotel chains located in protected areas without much interaction with the rest of the economy (see the discussion of enclave growth in the previous section). Compared to fellow English-speaking Caribbean countries, Jamaica has been gaining share in terms of total US dollars spent on travel services. Compared to Dominican Republic, a country that follows a similar all-inclusive model, Jamaica has been underperforming. Despite performing better than some of its neighbors, Jamaica has not been able to keep up with world growth rates in tourism.

Figure 7.9 : Growth of Service Exports by Component

Sources : Author's calculations, based on data from ITC, Eurostat, United Nations Statistics Division, World Trade Organization, International Monetary Fund statistics

7.20 **Other important service sub-sectors, such as transportation and communication, have also underperformed relative to global averages.** Financial services suffered the worst loss of market share in the 1970s and early 1980s, and it never recovered. The boom in the 1990s in services related to communications has been reflected in a gain in market share, but this gain has gradually eroded in the 2000s (see figure 7.9).

7.21 **Within the overall economic and export context of declining manufacturing, an agricultural sector losing its preferential market access, and a mining sector subject to external shocks, the Jamaican authorities have opted for a trade policy of protectionism combined with export promotion.**[136] On one hand, the new policy recognizes that Jamaica must create a broad export

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[136] See Panadeiros and Benfield, 2010

base; on the other, it reflects the authorities' concern over Jamaica's lack of competitiveness. It also highlights the importance of regional, hemispheric, and multilateral trading arrangements. First created in 1982, Export Free Zones (EFZs) continue to be the main policy instrument to promote exports.[137] They can be rationalized as temporary policies (a second best) to address market and government failures, such as lack of infrastructure and crime. But promoting only firms that export most of their production discriminates in favor of footloose "successful" investment (Rodríguez-Clare, 2004). Panadeiros and Benfield (2010) conclude that Jamaica's EFZ regime has at the macro level provided employment and facilitated foreign and local investment in traditional as well as in new areas of business. However, the policy is failing to contribute to foreign-exchange earnings and to promote non-traditional exports. Some of the firms under the EFZ show low value added and weak production linkages with local firms, helping explain the Jamaican economy's high investment/low growth puzzle.

C.2. Export diversification

7.22   **Jamaican exports have become increasingly concentrated over time, both in terms of products and markets**. The country continues to rely heavily on natural resources for its export earnings, rendering itself vulnerable to swings in global prices and demand. Figure 7.10 shows the steady concentration overtime of industrial exports in mineral resources and derivatives, with the exception of 2009, when commodity exports suffered from a world slump in demand. Between 2001 and 2008, most of the products that dropped out of the top 15 exported goods were manufactured ones, while the ranking for natural-resource based products has hardly changed. The only sector that has maintained its relative importance in overall exports has been food and beverages. Along the same lines, imports of capital and intermediate goods that are typically used in the manufacturing process have been increasingly replaced by imports of (final) consumer goods (see figure 7.12).

Figure 7.10: Composition of Exports	Figure 7.11: Composition of Imports

Source: COMTRADE data

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[137]Changes to this legislation introduced in 1996 permitted enterprises that are publicly managed free zones, free zones under the control of private sector development and management, and single entity free zones (SEFZ), outside the EFZ to apply for free zone status (that is, individual companies designated as free zones).

Figure 7.12: Shares of Export Groups in Total Exports

Shares of Exports Groups in Total Exports based on Leamer Classification

Source: COMTRADE, authors' calculation

Figure 7.13: Jamaica– Share of top ten exports in total goods exports

Top 10 Product Share of Total Exports 1980-2006

Source: World Bank Staff calculations based on COMTRADE

7.23 **Jamaica has missed opportunities to move up the value chain in goods exports**. A strategy to export labor-intensive manufactured goods could be a path to income and employment generation. However, as illustrated in figure 7.12, Jamaica's exports in the past 30 years have primarily comprised of primary products—in particular, bauxite and alumina—with labor-intensive textiles only featuring prominently in exports between 1986 and 2000. Capital intensive and machinery exports have been virtually absent.[138]

7.24 **Jamaica has not only become more reliant on natural resource-based products for export earnings, but it has also become increasingly dependent on fewer products for its earnings.** The Herfindhal-Hirshmann (HH) index for export concentration rose steadily during 1993-2005. The top 10 exported products represented 81 percent of total goods exports in the 1980s and 1990s, and this ratio rose to 88 percent in the 2000s (see figure 7.13). The number of products exported paints a similar picture: at the HS 4 digit level, Jamaica exported fewer goods in the 2000s than in the 1990s (see figure 7.14). Jamaica's export concentration is high by both global and regional standards. Even Trinidad & Tobago, which has an energy sector accounting for 50 percent of GDP, has a better diversification index. However, it is true that regional competitors like the Dominican Republic—which has also relied heavily on tourism—have also had difficulties diversifying their export mix and increasing the contribution of goods exports.

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[138] The figure follows the methodology in E. Leamer, *Sources of Comparative Advantage: Theory and Evidence* (MIT Press, Cambridge MA, 1984).

Figure 7.14: Number of Products Exported

Number of Products Exported

Source: author's calculations based on COMTRADE data, HS 4 digit level

7.25 **Jamaica's diversification in export markets has been low**. By far, the US is Jamaica's most important export destination (see table 7.2), and U.S. citizens account for the largest part of tourist arrivals. The U.S., UK, Canada, and the Netherlands continue to account for the large majority of Jamaica's merchandise exports—as a group, 65 percent in 1991, 71 percent in 2000, and 68 percent in 2008). Unlike other Caribbean and Latin American countries, Jamaica has not been able to take advantage of the growing Chinese market. The incipient growth in exports to that market seen earlier in this decade mostly fizzled out by 2007.

Table 7.2: Jamaica – Destinations of export goods since 1990

Trading Partners Name	1990	1993	1996	1999	2002	2005	2008
United States	28.37	45.44	40.12	37.16	28.18	25.84	40.31
European Union (EEC)	31.85	22.32	25.27	31.23	31.15	29.87	27.57
of which United Kingdom	*16.99*	*10.82*	*10.51*	*12.34*	*12.03*	*10.67*	*9.24*
of which Netherlands	*12.25*	*2.85*	*3.61*	*12.38*	*12.07*	*8.55*	*7.86*
of which France	*0.43*	*4.18*	*4.30*	*2.75*	*3.71*	*3.56*	*5.38*
Canada	10.67	9.10	8.70	10.38	14.05	19.26	10.62
Russia	..	0.04	2.01	4.65	0.77	1.41	5.23
Japan	0.68	1.58	1.88	1.80	2.52	1.04	0.98
Other Caribbean economies	6.71	3.89	3.04	3.85	4.91	3.75	3.15
of which Trinidad and Tobago	*2.83*	*1.16*	*0.85*	*1.23*	*1.54*	*1.15*	*0.94*
Total Exports as percent of GDP	**24.57**	**27.88**	**27.29**	**14.09**	**11.56**	**13.72**	**17.41**

Source: IMF, Direction of Trade Statistics

C.3. Failing to take advantage of high-growth products

Figure 7.15: Growth Orientation of Exports

Growth Orientation of Exports, 2008

Source: Author's calculation based on COMTRADE data (HS 6 digit level)

7.26 **One of the reasons for Jamaica's sluggish export performance could be the basket of goods it exports**. Figure 7.15 shows that Jamaica's exports composition may not be benefiting from overall world growth. For Jamaica's exports to be "pulled" by world growth in the products that it exports, the relationship shown in figure 7.15 would have to be strongly positive. As it is, the distribution

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is relatively flat, indicating that the products that Jamaica exports the most exhibit only average rates of growth.

7.27   **Between 1998 and 2008, Jamaica has had some success in expanding the number of markets its products reached** (see figure 7.16 and figure 7.17). However, volumes of products exported did not increase as much. Using products that were exported in 2008 but not in 1998 as a proxy for new discoveries, it is seen that Jamaica has been able to expand its export basket. Some of the new products have recorded significant volumes of trade—for example, petroleum oils and oils obtained from bituminous minerals at US$1.5 million in exports. Other "discoveries" have been able to reach a significant number of markets—for example, prepared unrecorded media for sound recording, with 42 markets.

Figure 7.16: Jamaica's Export Destinations, 1998   **Figure 7.17: Jamaica's Export Destinations, 2008**

Source: COMTRADE data (HS 1996 6 digit level)   *Source:* COMTRADE data (HS 1996 6 digit level)

C.4. Open- forest analysis

7.28   **According learning and product space research, a country very specialized in one product might have difficulties in diversifying its production and exports** (see box 7.1). This is because the actual export product space is sparsely populated—that is, there are few goods potentially exportable around its current location. Hausmann, Hwang and Rodrik (2005) built two measures that assign values to each exported good and to each country, representing respectively, the degree of sophistication of the product (PRODY) and the level of the country's export package (EXPY). PRODY is a quantitative index that ranks traded goods in terms of their implied productivity. This is constructed for each product as a weighted average of exporting countries' GDP per capita, with weights that reveal comparative advantage of each country in that product. Let country be indexed by j and goods by i; then the productivity level associated with the good k ($PRODY_k$) is:

$$PRODY_k = \sum_j \frac{(x_{jk}/X_j)}{\sum_j (x_{jk}/X_j)} Y_j$$

where the expression $\sum_j \dfrac{(x_{jk}/X_j)}{\sum_j (x_{jk}/X_j)} = RCA$

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is the revealed comparative advantage of the country j, X_j is the total exports and Y_j is the GDP per capita of that country. For country i, the average level of productivity of the basket of its exports is:

$$EXPY_i = \sum_l (\frac{x_{il}}{X_i})PRODY_l$$

7.29   **The "open forest" measure shows the value to a country of having a structural transformation**. A combination of the distance and productivity of each good yields a PRODY measure, and higher values for a country in a determined period imply important unexploited opportunities. Hausmann, Hwang and Rodrik (2005) found that the value exported by a country is a good predictor of its future growth, even when controlled by its GDP per capita. Wealthier countries tend to be in a denser part of the forest than poorer countries. By contrast, oil exporting countries seem to have export baskets that provide fewer opportunities for future structural transformation. In addition, evidence shows that the densest part of the forest in developed countries tends to be dominated by manufactured products while the sparsest part tends to be covered by unprocessed agricultural goods.

<div align="center">

Box 7.1: Export sophistication, product space, and learning

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Hausmann and Klinger (2006) analyze the level of sophistication of exports. They measure the distance between each possible pair of products based on the probability that countries would export both. A short distance between two goods means that any country has a high probability of exporting both at the same time. If a country exports a good with many neighboring products, but these nearby products are not yet exported, increasing the export product space will be easier for this country than for a country that exports products with few neighbors. Hausmann and Klinger see products like trees and firms like monkeys that can jump from one tree to the other. The jumps depend on the closeness of the trees and the value of the new goods relative to those already exported. Moving to more valuable goods is what the authors call "upscaling."

What matters in providing incentives to undertake a new project is how profitable it is, and this depends also on the setup costs. However, Hausmann and Klinger state that once production of a new good has started, there could be important information spillovers favoring production its production by imitation. In other words, an entrepreneur helps the followers to produce the same good, a process called intra-industry spillover. In addition, when countries develop the capability to produce certain goods, they shorten the distance others need "jump," producing inter-industry spillovers.

A related paper by Jovanovic and Nyarko (1996) argues that firms improve productivity through a learning-by-doing process, but this might delay the change to new processes (i.e. technologies) because there are costs in abandoning previously learned technology. The degree of similarity between technologies determines the cost of the change. As a result, when a country specializes too much in producing a good, it may not have incentives to shift to other production technologies because this will imply a loss of income.

Due to the heterogeneity of distances (i.e. the "space"), the process of structural transformation is not linear but depends on: (i) where the country's actual basket of production is located, (ii) the cost of jumping, and (iii) the price differential between current and new goods. As Hausmann and Klinger noted, this process might be interrupted by holes in the product space—that is, too much distance between products. Or firms may be discouraged from moving out of the actual location when nearby goods are less valuable (i.e., "downscale goods").
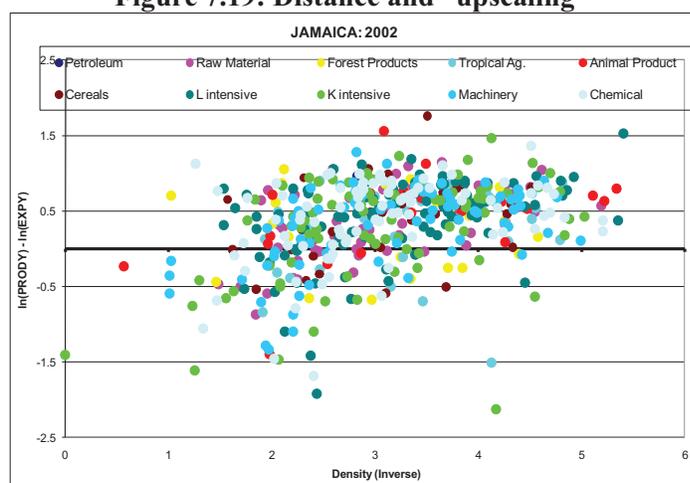
7.30   **Applying this methodological framework to Jamaica reveals the second poorest "open forest" among the selected comparators** (see figure 7.18).[139] Only Trinidad and Tobago has a lower index. The two countries are in a sparse area, far away from the densest part of the forest, with fewer chances of producing new goods than more diversified exporters. The analysis implies that Jamaica has only 15 percent of Brazil's opportunities. Note that this is not necessarily related to the size of the economy; El Salvador or even Guyana have better opportunities than Jamaica and Trinidad and Tobago. This might be related to the fact that both are island economies. In spite of the low open forest measure, Jamaica has a relatively high EXPY index, which indicates a relatively high degree of sophistication for goods it exports (figure 7.18). On average, the value of its basket of exported goods is about US$9,000 at purchasing power parity, the second highest in the sample.

Figure 7.18: Open Forest Analysis

Source: Hausmann and Klinger (2006).
(*) Jamaica, year 2002.

Figure 7.19: Distance and "upscaling"

7.31   **Although Jamaica exports a lot of upscale goods, they present few opportunities for synergies**. Figure 7.19 and figure 7.20 plot products grouped by Leamer's classification crossing distances (i.e.the inverse of density) and the difference between the productivity of the good and export basket productivity for Jamaica and selected countries in LAC. Goods over the zero line are denominated upscale goods and those below are downscale goods. Jamaica has almost 80 percent of the goods in the upscale good category, but they are very distant.

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[139] One limitation of this analysis is that it is based exclusively on exports of goods: therefore, export of services, a very important aspect of Jamaica's economy, cannot be directly analyzed.

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Brazil, on the other hand, has 60 percent of goods in this category, but they are very close.

Figure 7.20: Distance and "upscaling": Comparator Countries

COLOMBIA: 2003

Petroleum • Raw Material • Forest Products • Tropical Ag. • Animal Product
Cereals • L intensive • K intensive • Machinery • Chemical

ln(PRODY) - ln(EXPY)

Density (Inverse)

CHILE: 2003

Petroleum • Raw Material • Forest Products • Tropical Ag. • Animal Product
Cereals • L intensive • K intensive • Machinery • Chemical

ln(PRODY) - ln(EXPY)

Density (Inverse)

BRASIL: 2003

Petroleum • Raw Material • Forest Products • Tropical Ag. • Animal Product
Cereals • L intensive • K intensive • Machinery • Chemical

ln(PRODY) - ln(EXPY)

Density (Inverse)

ARGENTINA: 2003

Petroleum • Raw Material • Forest Products • Tropical Ag. • Animal Product
Cereals • L intensive • K intensive • Machinery • Chemical

ln(PRODY) - ln(EXPY)

Density (Inverse)

D. BUSINESS ENVIRONMENT

7.32   **Surveys of Jamaican businesses confirm concerns over productivity, workforce quality, and brain drain as important constraints for their operations.** While some of the data presented in this section is qualitative, representing respondent's perceptions of various constraints related to the business climate in which they operate, the findings are augmented by quantitative results. Firms' perceptions provide an initial weighting of the importance of different obstacles but need to be interpreted cautiously. Perceptions may be biased by recent events, displaying, for example, temporary optimism or pessimism associated with short-term economic performance, and they may also reflect inherent cultural traits and specific socioeconomic backgrounds. The analysis uses complementary data from a variety of sources, including World Bank's Doing Business indicators, World Economic Forum rankings, Logistics Performance Indicators, Transparency International, and the World Bank's World Governance Indicators. This additional information can provide a richer and more nuanced view of Jamaica's investment climate. Whenever possible, the emphasis will be not only on identifying Jamaica's main business environment constraints to firm growth, but also on benchmarking the country's characteristics with other countries.

D.1. Ease of Doing Business in Jamaica

7.33 **While Jamaica does not compare too poorly against some of its regional competitors, there are specific concerns about the country's business environment that may be hindering investments and growth in formal economic activity.** Starting with the Doing Business Indicators (see figure 7.21 and figure 7.22).[140], while Jamaica performs better than all of its comparators in the overall ranking, the country lags in such indicators as Paying Taxes (174th of 183 countries), Enforcing Contracts (128th), Registering Property (106th), and Trading across Borders (104th). The Global Competitiveness Index (2010–11) highlights additional areas of the business environment that are particularly challenging for Jamaica (see figure 7.23 and figure 7.24).[141] These include concerns over crime and violence and their toll not only in human lives but also in terms of additional costs for firms doing business in Jamaica. Greater public-sector efficiency, increased access to finance, decreased tax burden, and improvements in labor-force quality are also areas where respondents say Jamaica needs to do more to improve its competitiveness.

Figure 7.21: Doing Business 2011 Rankings

Source: Doing Business Report 2011

Figure 7.22: Doing Business in Jamaic, 2011

Source: Doing Business Report 2011

7.34 **Crime and violence is a major concern for business community with adverse consequences for investment and development.** The analysis in chapter 3 of this report shows that Jamaica's murder rate is among the world highest. The incidence of intentional homicides is much higher than neighboring countries that Jamaica competes with for FDI (see chapter 3, section F.2). Tourism sector focus group participants, interviewed for this report, considered security as one of Jamaica's biggest disadvantages when compared to other countries, such as

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[140] The Doing Business rankings summarize a wide range of characteristics, such as starting a business, dealing with licenses, and closing a business. Economies are ranked from best to worst. For example, a low number on the ease of doing business index connotes a regulatory environment conducive to operating a business. Doing Business averages the country's percentile rankings on 10 topics made up of a variety of indicators, giving equal weight to each topic. See World Bank (2009).

[141] The Global Competitiveness Index (GCI) summarizes 12 pillars of competitiveness—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, and innovation. The GCI rankings are calculated from both publicly available data and the Executive Opinion Survey, an annual poll the World Economic Forum conducts in partnership with leading research institutes and business organizations in countries the report covers. As with the Doing Business indicators, eeconomies are ranked from best to worst.
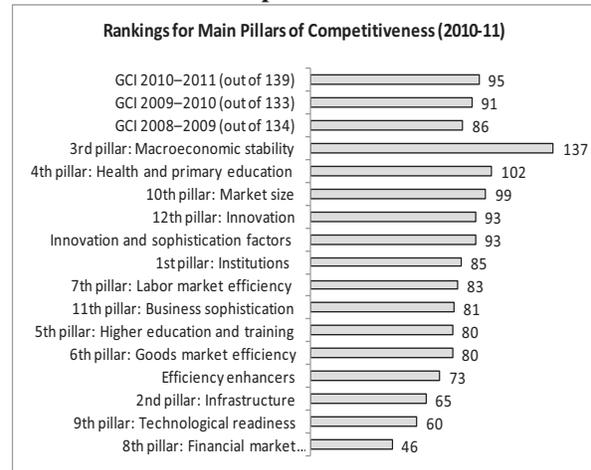
Costa Rica and Cuba (see chapter 8). The impact of crime on doing business is also felt strongly in other sectors of the economy.

Figure 7.23: The Most Problematic Factors for Doing Business in Jamaica

Source: Global Competitiveness Report 2010/2011

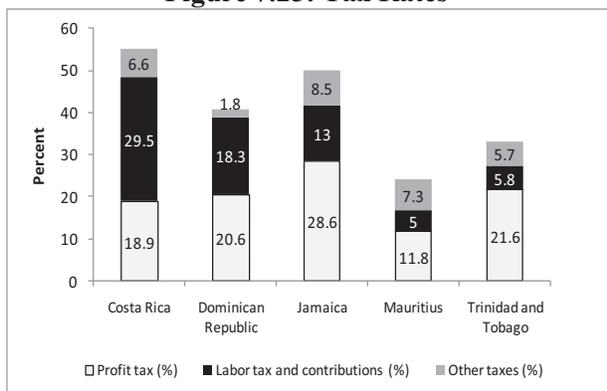**Figure 7.24: Rankings for Main Pillars of Competitiveness**

Source: Global Competitiveness Report 2010/2011
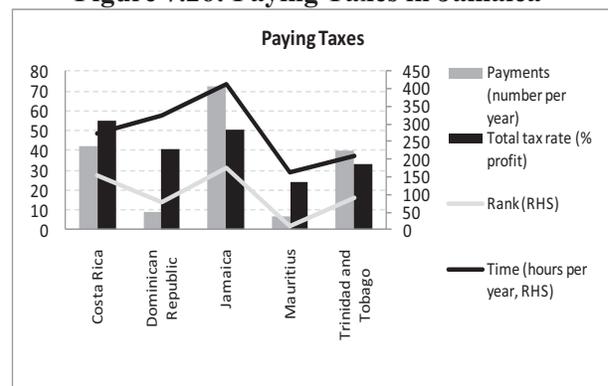
D.2. Paying Taxes

7.35   **The Doing Business and Global Competitiveness Index show that tax rates in Jamaica are comparatively high**. The Doing Business indicator for Paying Taxes shows that Jamaica's taxation on profits is particularly high when compared to its neighbors (see figure 7.25). Reports also point out the relative high rates and onerous and cumbersome tax regulations, including a myriad of tax incentives for various sectors that add distortion and possibly discretion in the allocation of resources.[142] Jamaica performs particularly poorly in terms of the tax administration system, with a process that requires making an average of 72 payments a year and spending 414 hours a year on paying taxes (see figure 7.26)

Figure 7.25: Tax Rates

Source: Doing Business Reports 2011

Figure 7.26: Paying Taxes in Jamaica

Source: Doing Business Reports 2011

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[142] Holden & Holden (2005)

D.3. Logistics

7.36   **Jamaica underperforms in terms of logistics, compared to some of its neighbors and also regional averages** (see figure 7.27 and figure 7.28). Jamaica's main gaps according to the Logistics Performance Indicators (LPI) methodology are in: a) the efficiency of the clearance process (i.e. speed, simplicity, and predictability of formalities) by border-control agencies, including customs, and b) timeliness of shipments in reaching destinations within the scheduled or expected delivery times. Jamaica lags behind the region in the overall quality of trade and transport related infrastructure. The bright spots in Jamaica's logistics performance are in the ease of arranging competitively priced shipments and the ability to track and trace consignments.

Figure 7.27: LPI Ranking for Jamaica

Source: LPI 2010

Figure 7.28: LPI for Jamaica and Comparators

Source: LPI 2010

D.4. Electricity

Figure 7.29: Cost of Electricity in Jamaica

Source: JPS[143]

7.37   **Studies on competitiveness in Jamaica have identified the cost of energy as a major impediment to investment.**[144] Jamaican electricity, however, is not particularly costly when more recent data for electricity rates are compared with rates in some other countries in the region (see figure 7.30). While a typical Jamaican SME may face a cost of approximately 13 U.S. cents per kilowatt hour (kWh), a firm in Costa Rica may pay 12 to 20 U.S. cents per kWh, depending on consumption.[145]

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[143] Rate is applicable for customers other than residential households, with demand less than 25 kilovoltamperes (kVA). See for example (Downes, 2003). Anecdotally, rates up to 25 US cents per kWh are reported in business circles.

[144] See for example (Downes, 2003).

[145] *Source*: Instituto Costarricense de Electricidad

In the Dominican Republic, the cost is estimated at 16 to 17 US cents per kWh.[146] Nonetheless, the perception that Jamaica's electricity costs are high was made clear in a series of interviews with the country's firms. Data indicates that electricity costs may be higher for smaller firms and that the costs have been increasing, which may have prompted the perception that prices are too high.

E. CONCLUSIONS

7.38   **Jamaican economic activity has increasingly shifted into services.** Part of the shift into services has been the result of rapid growth in the tourism industry; other factors include the collapse of the textiles and apparel following the loss of preferential access to the U.S. market. Even for tourism—one of the faster-growing Jamaican sectors—growth has lagged international competitors and has facilitated a shift towards an enclave model with few linkages to other sectors of the economy. Profitability of production—one measure of competitiveness—has also been falling both at the economy-wide and sectoral levels, driven by real wage growth in excess of labor productivity.

7.39   **For a small, open island economy that has historically relied on trade for a significant share of its GDP, Jamaica's recent export performance is a source of concern**. Even its tourism sector, long a driver of economic activity on the island, has been steadily losing world market share. The loss of competitiveness in the 1990s was partly the result of a strong currency appreciation, but this issue is no longer as salient in the 2000s. Therefore, the country needs to look at factors to explain its decreasing competitiveness. This chapter has argued that part of Jamaica's poor export performance may be related to its inability to diversify both products and markets and take advantage of new and more dynamic opportunities.

7.40   **Among the business environment issues addressed in this chapter, violence and crime may arguably be one of the most important, given its pervasive effect on many other variables that influence firm's operation and growth.** Inefficient government bureaucracy comes second—only to crime and theft—as the most problematic factors for doing business in Jamaica. Other business environment issues affecting firm competitiveness are taxes and the country's logistics infrastructure. Taxes are not only relatively high compared to some competitor countries, but compliance procedures seem particularly burdensome. Large number of tax incentives also creates significant distortions. Relatively inefficient customs procedures suggest that more needs to be done to create a better business environment.

7.41   **The analysis represents an opportunity for public sector reforms that can help improve the country's business environment.** Jamaica can benefit significantly from reforms to improve business environment, increase export orientation and enhance long term focused private sector development. The improved environment can stimulate productivity in sectors where Jamaica has a comparative advantage, as well as encourage the emerging new activities. Meanwhile, the private sector must move away from the poor performance of past decades and enhance competitiveness, improve diversification, and raise productivity including, among other things, investing in on the job training of workers.

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[146] *Source*: *Superintendencia de Electricidad de la República Dominicana.*

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CHAPTER 8.   TWO INDUSTRY CASE STUDIES: FOOD PROCESSING AND TOURISM

The analysis in chapter 7 has showed that Jamaica's export performance has been weak for long and lack of product diversification is a major challenge for increasing exports. This chapter analyzes the performance and main challenges faced by two promising sectors in Jamaica: food-processing and tourism. These two sectors are chosen because of their importance to overall economic activity, their capacity to facilitate diversification of the Jamaican economy, and their potential to create linkages with local SMEs and support local community development. In this regard, these two sectors provide a microcosm of the country's development challenges and opportunities. The analysis in this chapter indicates that the most salient points for both sectors are decreasing competitiveness in world markets and the narrow concentration of product offerings and markets reached. A food-processing industry focus group analysis identified quality, consistency, and reliability in the supply of raw materials and packaging as major constraints. A tourism industry group cited environmental degradation, poor labor skills and safety and security as major issues facing the sector. Addressing these constraints would increase growth potential and product diversification not only in these two sectors but also in the broader economy through better spillovers and linkages.

A. Introduction

8.1   **Jamaica can improve its export performance by exploiting the sectors where it has comparative advantages.** The analysis in chapter 7 has showed that Jamaica's export performance has been weak for long and lack of product and market diversification are major challenges for increasing exports. This chapter reviews the performance and main challenges faced by Jamaica's food-processing and tourism sectors.[147] These two sectors were chosen because of their importance to overall economic activity on the island,[148] their capacity to facilitate diversification of the Jamaican economy, and their potential to create linkages with local SMEs and support local community development. These sectors are disparate—one is in manufacturing, the other in services—but this chapter argues that they face a similar challenge: how to diversify from their currently predominant activities to better use Jamaica's natural endowments. At the same time, both sectors can improve their linkages to local SMEs, helping to increase demand for goods or services that local firms may be able to provide. In this regard, these two sectors provide a microcosm of the country's development challenges and opportunities. The rest of the chapter is structured as follow: Section B presents the case of food processing industry and Section C presents the case of tourism industry. The analyses are structured in a similar way: first, an overview of the sector worldwide is presented, highlighting global trends that may be important for Jamaica's performance and potential for new business opportunities. Next, the chapter looks specifically at the sector's main characteristics and

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[147] Food Processing industry in this report includes activities that produce foodstuffs for human or animal consumption, alcoholic and non-alcoholic beverages, and tobacco products. Unless otherwise noted, Harmonized System (HS) codes 15-24 is used as the food processing activities analyzed, particularly for exports. For national production figures, STATIN data is used, arranged in the following categories: food products, sugar and molasses, alcoholic beverages and tobacco products, and non-alcoholic beverages.

[148] Tourism directly accounts for about 8 percent of GDP. The food processing industry accounts for about half of manufacturing GDP.

performance in Jamaica. The most salient points for both sectors are decreasing competitiveness in world markets and the narrow concentration of product offerings and markets reached. The chapter then explores some of the issues and main constraints that explain this decreasing competitiveness and lack of diversification. Finally, Section D presents selective policy recommendations for both sectors.
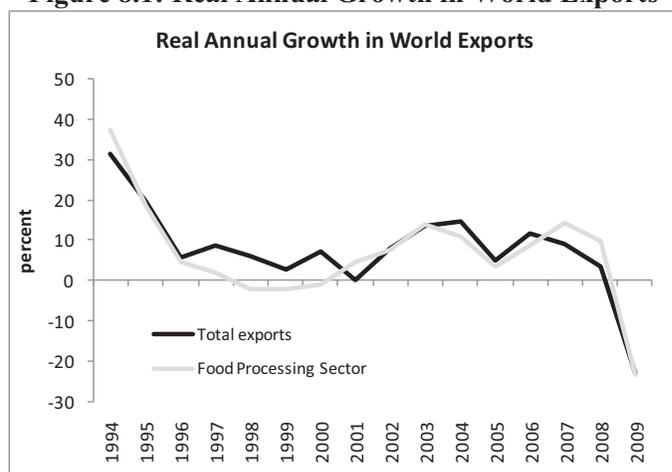
B. CASE STUDY I: THE FOOD-PROCESSING INDUSTRY

8.2   The analysis of the food-processing industry begins with an overview and then examines the sauces and spices sub-sector in greater detail to provide a more nuanced perspective, including some suggestions for policy initiatives.[149] The sauces and spices sub-sector was chosen because of its relative importance in Jamaica's overall export basket, its potential to promote exports from SMEs (unlike the beverages sector, which is dominated by larger firms), and the country's inherent natural endowment for some important raw materials.

B.1.Food Industry Overview

8.3   **The food-processing industry includes activities that add value to agricultural and aquaculture raw materials**. These activities include dehydration, production of concentrates, meat packing, milling, and canning. As such, food processing involves a vast array of products—from fruits, vegetables, and staple foods (wheat, corn, rice) to marine and meat products.

Figure 8.1: Real Annual Growth in World Exports

Source: Authors' calculations based on COMTRADE data[150]

8.4   **Over the past two decades, the food-processing industry's global trade performance has mostly followed trends in overall merchandise trade.** Worldwide, the industry experienced high rates of growth in the early 1990s. A substantial slowdown and a mild contraction followed in the second half of the decade (see figure 8.1). Growth rates became positive again after 2001 and accelerated prior to the financial crisis in 2008, growing faster than overall total exports. The crisis and its impact on the real economy caused a precipitous fall in demand in 2009, with the sector contracting 23 percent in real terms. The food-processing industry's contribution to total
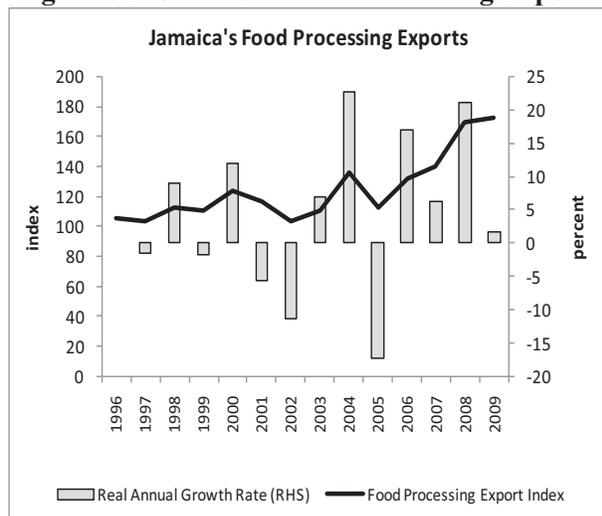
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[149] In the HS category descriptions, sauces and spices is part of the *Miscellaneous Edible Preparation* category of food processing.

[150] For the deflation of most of the trade series, US import and export price indices are used, produced by the US Bureau of Labor Statistics (BLS). The exceptions were HS 15 (US BLS PPI 31122, starch and vegetable fats and oils manufacturing was used), HS 17 (WB GEM world sugar price was used), HS 18 (US BLS PPI 31132, chocolate and confectionery manufacturing from cacao beans was used), HS 24 (US BLS PPI 3122, tobacco manufacturing was used). Given the lack of world price indices that spanned the 1993-2010 period, the US international price indices were taken as a second-best alternative.

worldwide exports has hovered between 3 percent and 4 percent during the past two decades; in 2009, it increased to 4.1 percent, up from 3.5 percent a year earlier.
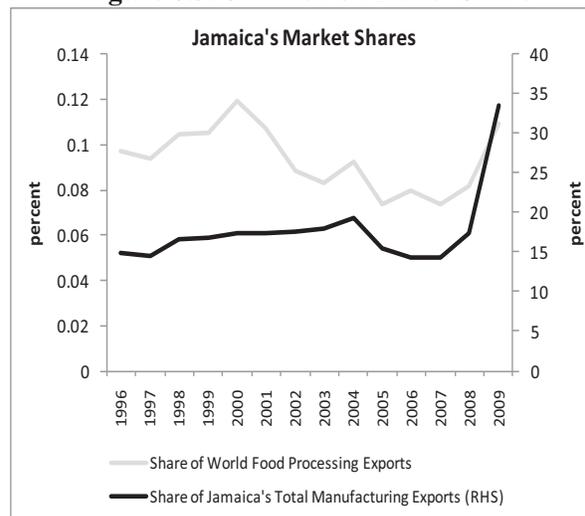
8.5   **While growing, the Jamaican food-processing industry had been losing market share prior to the financial crisis**. Comparable data for Jamaica's exports since 1997 shows a mixed performance for food-processing industry exports.[151]   While exports grew in the years before the 2008 crisis, the sector had been losing world market share throughout the decade and its share in Jamaica's in total exports since 2004 (see figure 8.2 and figure 8.3). The steady decline in market shares probably was not the result of currency appreciation. As argued in the previous chapters of this report, persistent decreases in productivity as well as the lack of diversification into more dynamic markets have had an impact on the competitiveness of Jamaica's exports (see chapters 1, 3, 4, and 7). The jump in market share observed for 2009 results from Jamaica's ability to keep exports at 2008 levels while world food-processing exports collapsed. Nonetheless, it is too early to tell whether this recent jump is sustainable and not just a consequence of short-term impacts from the financial crisis of 2008-09.

Figure 8.2: Jamaica's Food Processing Exports

Source: Authors' calculations based on COMTRADE data

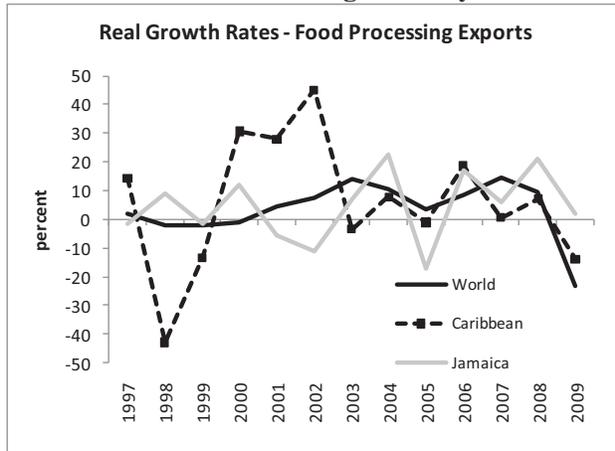**Figure 8.3: Jamaica's Market Share**

Source: Authors' calculations based on COMTRADE data

8.6   **Looking at the Caribbean region, exports of the Jamaica's food-processing sector are growing at a slower rate and seem to be less volatile.[152]** The real growth rate for Jamaican food-processing industry's exports for 1997-2009 was 4.5 percent, above the world's export performance of 3.5 percent but below the average of 6 percent for Caribbean food-processing exports (see figure 8.4). Within the Caribbean, Jamaica has been an important producer of processed food products, accounting for 46 percent of total exports in 1999 before falling to 17 percent in 2002. The country has since then recovered some market share, accounting for 26 percent of regional processed food exports in 2009 (see figure 8.5).

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[151] Lack of trade data for Jamaica for 1994-95 impedes us to calculate growth rates for the same period as in Figure 5.1
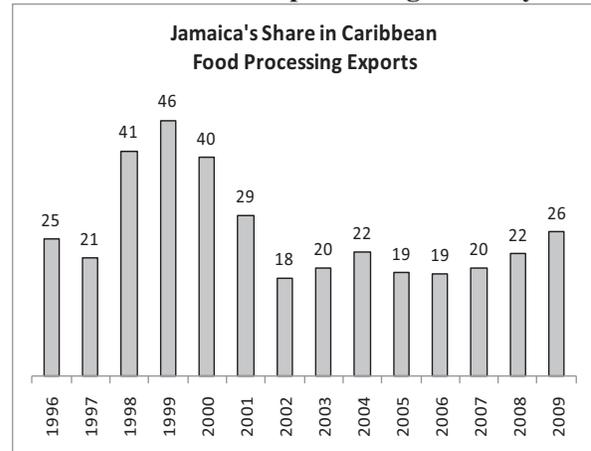[152] The following countries are included to calculate Caribbean figures throughout this chapter: Antigua and Barbuda, Belize, Dominica, Dominican Republic, Grenada, Haiti, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, and Trinidad and Tobago.

Figure 8.4: Growth of Exports of the Food-Processing Industry

Real Growth Rates - Food Processing Exports

Source: Authors' calculations based on COMTRADE data

Figure 8.5: Jamaica's Market Share in the Caribbean: Food-processing Industry

Jamaica's Share in Caribbean Food Processing Exports

Source: Authors' calculations based on COMTRADE data

8.7   **At the sub-sector level, growth of world exports has been uneven**. Within the world food-processing industry, sectors that have grown in real terms above the overall average of 4.6 percent for 1995-2009 included: sugars and sugar confectionery (5.9 percent), miscellaneous edible preparations (5.5 percent), and beverages, spirits, and vinegar (4.9 percent). The tobacco sector had the worst performance, with a real average contraction of 3 percent during the period. In 2009, the beverages, spirits, and vinegar sub-sector had the largest share in world exports at 17 percent, followed by animal and vegetable fats and oils at 15 percent. Figure 8.6 shows the contribution of each sector to total world industry exports in 2009.

Figure 8.6: Total World Exports of Processed Foods by Subsector, 2009

Source: Authors' calculations based on COMTRADE data

8.8   **Developed countries predominate as importers of processed food goods, while developing countries such as Brazil and China are important exporters of these goods** (see table 8.1). In 2009, Jamaica ranked 78th in exports for this industry, with a market share of 0.09 percent, second among Caribbean nations to the Dominican Republic, which ranked 54th with a 0.19 percent share. The U.S., UK, and Canada, the top markets for Jamaica's food-processing exports, are also among the world's largest importers. Both the U.S. and EU markets offer Caribbean countries, including Jamaica, trade privileges in the form of duty exemptions on most of their exports—the U.S. through the Caribbean Basin Initiative and the European Union through the Economic Partnership Agreement.[153]

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[153] The Caribbean Basin Initiative privileges were set to expire in September 2010.

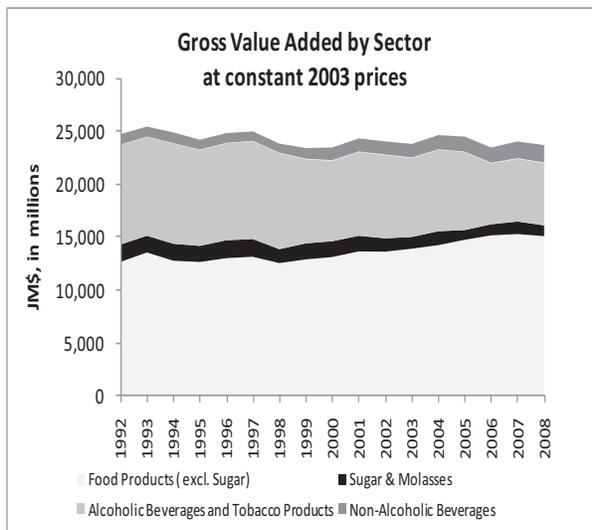**Table 8.1: Market share in 2009 for main exporters and importers (percent)**

Top Exporters	Top Importers
Germany (8.2)	USA (9.6)
Netherlands (8.2)	Germany (7.8)
France (6.8)	UK (6.0)
USA (6.7)	France (5.6)
Brazil (5.2)	Netherlands (5.2)
Italy (4.6)	Japan (4.6)
Belgium (4.1)	Italy (3.7)
China (3.5)	Belgium (3.4)
Argentina (3.5)	Spain (3.0)
Indonesia (3.4)	Canada (3.0)

Source: ITC Trade Map

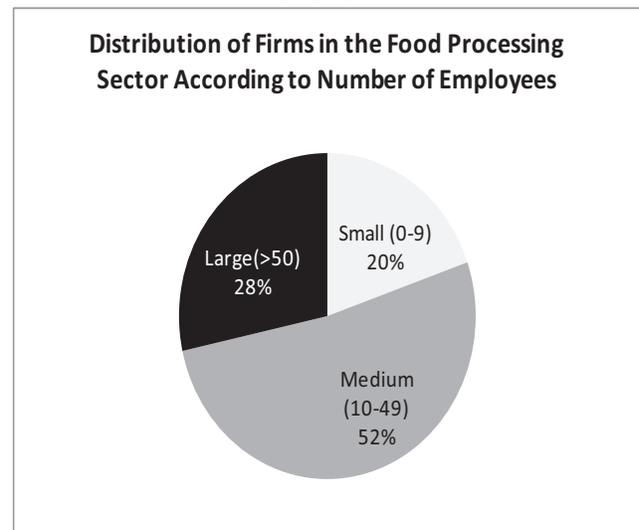## B.2. Jamaica's Food Processing Industry: Industry Size and Structure

8.9   **Total food-processing value added in Jamaica reached close to US$600 million in 2008**. The production of food stuffs (excluding sugar) accounts for the largest share of domestic production and value added in the food-processing industry (see Figure 8.7).[154] Its share in total food-processing output has increased steadily since 1992 and reached 68 percent in 2008.[155]

Figure 8.7: Gross Value Added by Sectors

Figure 8.8: Firm Size in the Food-processing Sector

Source: STATIN NIP Tables

Source: STATIN data on registered firms and employment

8.10   **As of June 2010, the food-processing sector, including beverages and tobacco, had 183 registered firms in Jamaica, with 13,950 employees**.[156] This most likely reflects only the
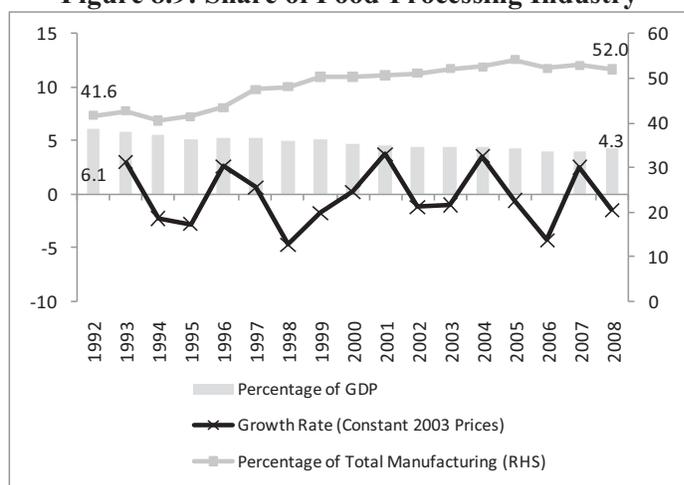
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[154] Using STATIN data, the food-processing industry includes the following categories: food products, sugar and molasses, alcoholic beverages and tobacco products, and non-alcoholic beverages.

[155] Calculated using current prices.
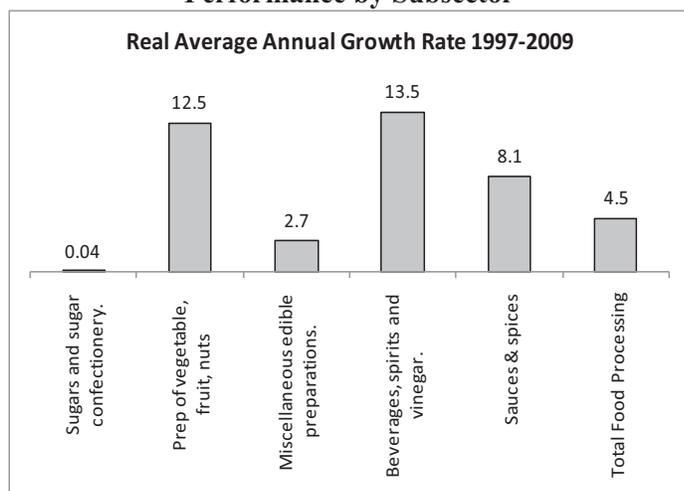
[156] According to data from STATIN.

formal employment in the industry. Labor Force Surveys provide a broader measure of employment in the sector. In 2008, they show that the sector had 29,153 workers.[157] The majority of formal firms are of medium size, employing between 10 and 49 workers (see Figure 8.8). The Jamaica Manufacturers' Association's membership directory lists 114 companies in its food and agro products category, while the Jamaica Exporters' Association, which includes mainly locally owned export-oriented firms, identifies 63 companies in the processed food sub-sector through its website membership directory.

Figure 8.9: Share of Food-Processing Industry

Source: STATIN NIP Tables

Figure 8.10: Jamaica's Food-processing Industry Performance by Subsector

Source: Author's calculation based on COMTRADE data

8.11   **While becoming increasingly important for the manufacturing industry, the food-processing sector in Jamaica has nonetheless seen a steadily decreasing contribution to total GDP over the past two decades.** Food processing's share of GDP has declined from 6.1 percent in 1992 to 4.3 percent in 2008, mirroring the overall decline of manufacturing's importance to the Jamaican economy. Between 1993 and 2008, the sector actually posted a negative 0.2 percent real average growth (see figure 8.9).
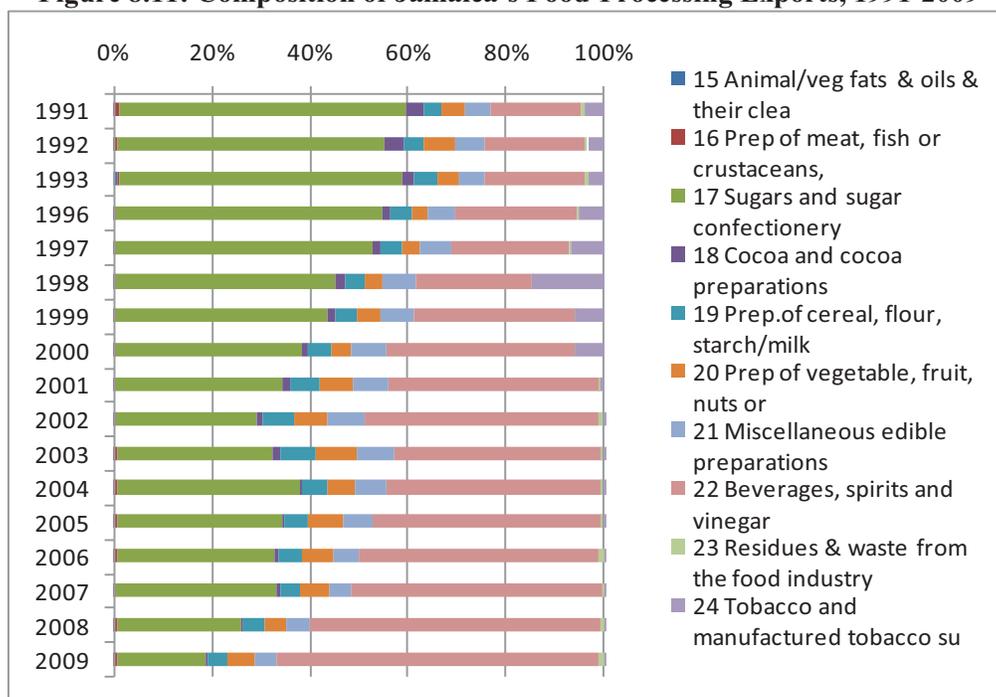
8.12   **Exports of processed food products have fared better, and some sub-sectors have shown robust growth rates**. The industry's overseas sales have grown at an average of 4.5 percent since 1997. Some sub-sectors performed above the industry average, notably the beverages sector. Other sub-sectors have also reported reasonable growth rates, including the category "preparation of vegetables, fruits, nuts, or other parts of plants" and "sauces and spices" (see figure 8.10). These trends suggest the potential for growth and dynamism of the Jamaica's food-processing industry.

8.13   **Food-processing industry exports have shifted towards beverages, spirits, and vinegar, while sugar's share has declined**. The structure of food-processing exports has changed in the past two decades. Figure 8.11 shows the decline of sugar exports and the rise of beverages, spirits, and vinegar as the sector's most important exports. In

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[157] Source: Data from Labor Force Surveys (STATIN, various years).

2009, beverages, spirits, and vinegar accounted for roughly 65 percent of the food-processing industry's export earnings. Much of this growth has come from the development of the ethanol industry, which has grown from exports of US$2.5 million in 1998 to US$170 million in 2009.[158] Lack of diversification remains a main challenge for the sector.

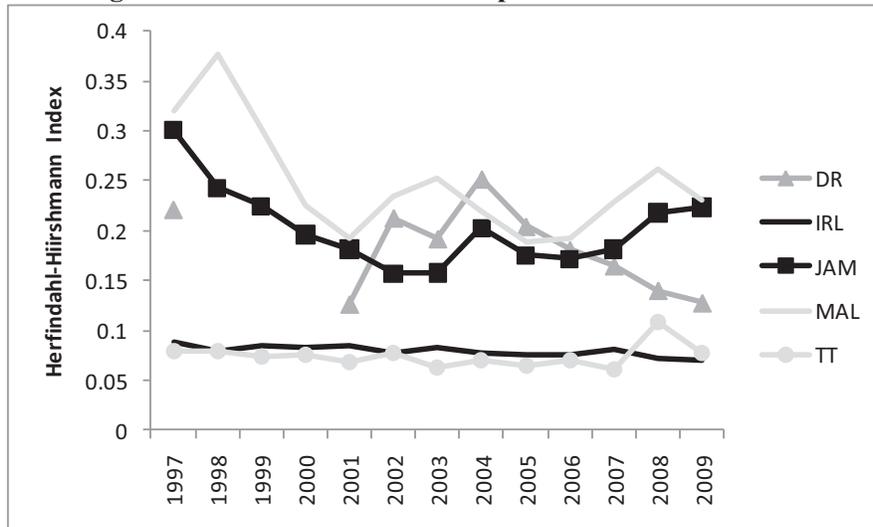**Figure 8.11: Composition of Jamaica's Food-Processing Exports, 1991-2009**

Source: COMTRADE data (HS 2 digit level)

8.14   **The food-processing industry is less diversified in Jamaica than in other Caribbean economies.** Figure 8.12 shows that other countries in the region have been able to increase their diversification. Applying a Herfindhal-Hirshmann (HH) index for export concentration to the food-processing industry shows that the concentration of Jamaican exports declined at the end of the 1990s and only partly recovered during the 2000s. Trinidad and Tobago shows higher degree of diversification in its export baskets of processed food goods.[159] Malaysia and Ireland—two other food-processing exporting countries—are included for comparison. Malaysia shows a trend similar to Jamaica's, while Ireland has much higher degree of diversification.

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[158] The development of the ethanol industry in Jamaica represents another example of a missed opportunity to develop stronger linkages to the local economy. All of the ethanol currently produced in the country uses feedstocks imported from overseas (Brazil). Moreover, this complete dependence on one supplying country may leave Jamaica vulnerable to certain risks. As mentioned in a 2007 report, "Dehydration of Brazilian hydrous ethanol in Jamaica for export to the U.S. is economically attractive to Brazilian ethanol producers when the price difference in the U.S. and Brazilian markets is sufficiently large. In this respect, exports of ethanol from Jamaica can be relatively volatile and unreliable." (USDA Foreign Agricultural Service, 2007)

[159] In 2009, Trinidad and Tobago's processed food exports totaled US$277 million, while Jamaica exported US$416 million.

Figure 8.12: Diversification in Exports of Processed Foods

8.15 **Jamaica is highly dependent on three countries for the bulk of its food-processing exports**. As Table 8.2 shows, the US, UK, and Canada have accounted at least three-quarters of the industry's exports in the past decade. This reflects the fact that Jamaica's food-processing exporters have been concentrated on reaching the Jamaican diaspora rather than mainstream markets. The three markets accounted for 18.6 percent of world-food processing imports in 2009.

Table 8.2: Main Markets for Jamaica's Food-Processing Exports

2000	2005	2009
UK (36.9%)	UK (39.5%)	United States (57.5%)
United States (35.2%)	United States (39.0%)	UK (21.6%)
Portugal (5.7%)	Canada (5.1%)	Canada (4.7%)
Canada (4.3%)	Trinidad and Tobago (2.2%)	Portugal (3.3%)
Mexico (2.9%)	Mexico (1.9%)	Trinidad and Tobago (1.2%)

8.16 **However, Jamaica's main export markets are not the most dynamic ones for many food-processing sub-sectors**. Table 8.3 highlights some of the potential issues with this lack of diversification in Jamaica's export markets. Focusing the analysis on three food-processing sub-sectors, the table shows that Jamaica's main current export markets are not, for the most part, the most dynamic markets. Other markets that offer opportunities in terms of size and growth potential are not being targeted by Jamaican exporters at the moment.[160]

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[160] Jamaica does not export the products under each sub-sector to the countries listed in *Other Countries* (data for 2009).

Table 8.3: Main Export Markets for Jamaica and Fast-growing Export Markets

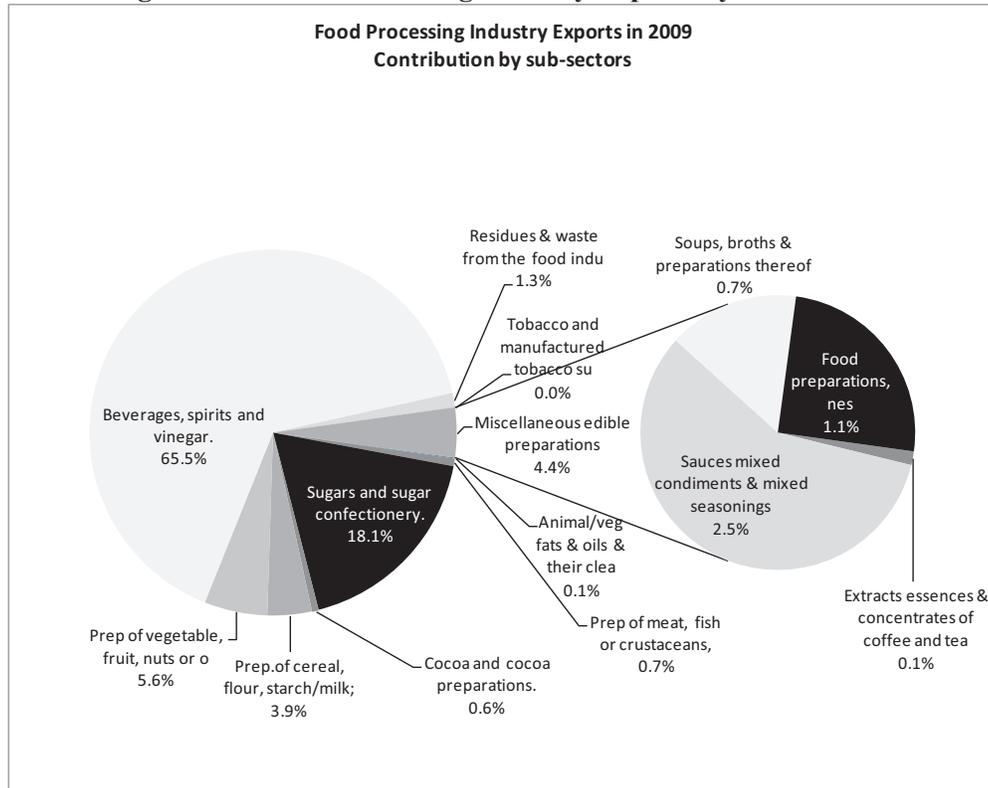| 17 - Sugars and sugar confectionery			21 - Miscellaneous edible preparations			22 - Beverages, spirits and vinegar		
Top 6 Markets for Jamaica's exports (market share in world imports)	Jamaica's Exports in 2009, USD thousand	Total Imports Annual growth in value 2005-2009, %	Top 6 Markets for Jamaica's exports (market share in world imports)	Jamaica's Exports in 2009, USD thousand	Total Imports Annual growth in value 2005-2009, %	Top 6 Markets for Jamaica's exports (market share in world imports)	Jamaica's Exports in 2009, USD thousand	Total Imports Annual growth in value 2005-2009, %
World	75,064	7	World	18,246	12	World	272,148	8
UK (6.4%)	58,568	3	United States (8.1%)	10,228	5	United States (22.7%)	209,737	3
Portugal (1.4%)	13,826	13	UK (8.1%)	1,959	15	UK (10.5%)	21,429	2
United States (11.1%)	2,400	3	Canada (4.4%)	1,097	11	Canada (5.0%)	13,760	12
Canada (3.2%)	76	7	Trinidad and Tobago (0.2%)	954	7	Mexico (1.0%)	3,993	12
Cayman Islands	53	7	Barbados (0.1%)	906	4	New Zealand (0.4%)	3,196	2
Bahamas (0.04%)	38	1	Cayman Islands	448	41	Cayman Islands	1,863	5
Other Countries			*Other Countries*			*Other Countries*		
India (2.7%)		43	India (0.1%)		30	China (1.4%)		31
Chile (0.9%)		33	Brazil (0.5%)		23	Poland (0.7%)		27
Hungary (0.5%)		29	Poland (1.7%)		22			
Jamaica's export growth 2005-2009		1	Jamaica's export growth 2005-2009		10	Jamaica's export growth 2005-2009		28

Source: ITC Trade Map

The first column of data for each sub sector represents Jamaica's exports to each country. The second column (*Total Imports …*) shows average annual growth rates of total imports for each country, 2005-2009.

The Sauces and Spices Subsector

8.17   **A separate market analysis for the sauces and spices sub-sector highlights its potential for growth and linkages to local economy**.[161] Figure 8.13 shows that in 2009, the sauces and spices sub-sector accounted for about 2.5 percent of total food-processing exports. While small, sauces and spices was chosen as a sub-sector with growth potential because, compared to such segments as beverages, food preparation, and cereals, it has a better overall combination of rising exports, high SME participation, potential linkages to local agriculture, and potential for competitive advantage. The latter includes exporting a value-added product that leverages Jamaica's unique country of origin product attributes—e.g. aromatic flavoring, taste, and pungency. These unique attributes, if packaged together with organic certification, could help Jamaica expand its presence in existing markets, especially in North America and the EU.

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[161] Sauces and spices is part of the Harmonized System's *mmiscellaneous edible preparation* category of food processing.

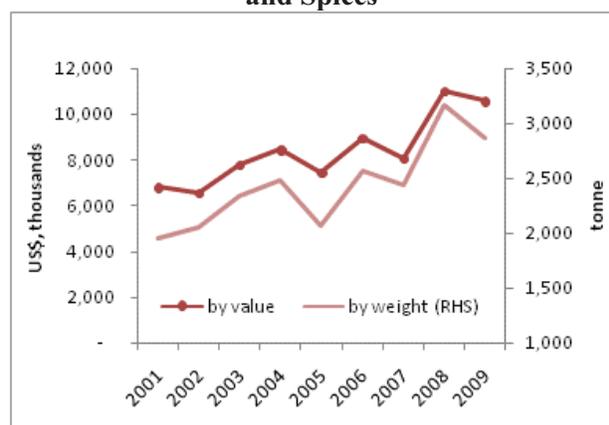**Figure 8.13: Food Processing Industry Exports by Sub-Sectors**

**Food Processing Industry Exports in 2009
Contribution by sub-sectors**

- Residues & waste from the food indu 1.3%
- Tobacco and manufactured tobacco su 0.0%
- Miscellaneous edible preparations 4.4%
- Soups, broths & preparations thereof 0.7%
- Food preparations, nes 1.1%
- Sauces mixed condiments & mixed seasonings 2.5%
- Beverages, spirits and vinegar. 65.5%
- Sugars and sugar confectionery. 18.1%
- Animal/veg fats & oils & their clea 0.1%
- Extracts essences & concentrates of coffee and tea 0.1%
- Prep of vegetable, fruit, nuts or o 5.6%
- Prep.of cereal, flour, starch/milk; 3.9%
- Cocoa and cocoa preparations. 0.6%
- Prep of meat, fish or crustaceans, 0.7%

Source: Author's calculations based on COMTRADE data (HS 2 and 4 digit level)

8.18   **The world export market for sauces and spices is sizeable**. In 2009, global sauces and spices imports totaled approximately US$8.2 billion. Top five markets and their share of world imports were the UK (10.3 percent), the U.S. (9.0 percent), France (6.9 percent), Germany (5.6 percent), and Canada (5.1 percent).

8.19   **Jamaica's sauces and spices exports have been steadily growing since 2001** (see figure 8.14). However, Jamaica's export performance in its traditional markets has not been encouraging, and the country is not connected to fast-growing world export markets. Jamaica exported US$10.5 million worth of products in 2009, accounting for 0.1 percent of world exports. The United States was the top importer from Jamaica, with more than US$880 million worth of products. It is natural for the United States to be Jamaica's top exporter because of its proximity and the large Jamaican diaspora in the US, However, Jamaica could do more to connect to dynamic markets that are growing faster and that represent greater potential opportunities. Sauces and spices imports of Brazil, Saudi Arabia, and Hungary, for example, have grown at significantly higher rates than Jamaica's current main markets, but Jamaica did not export sauces or spice products to any of them in 2009 (see table 8.4). Moreover, Jamaica's penetration of its main export markets has been weak. Market share has been stagnant in the U.S. and Canada and declining in the UK (see figure 8.15).

Figure 8.14: Jamaica's Exports of Sauces and Spices

Source: ITC and COMTRADE statistics

Figure 8.15: Jamaica's Export Share: Sauces and Spices

Source: Author's calculations based on ITC/COMTRADE data.
Note: Calculated as share of Jamaica's exports of HS 2103 category products to that country in that country's total imports of those products.

Table 8.4: Market Analysis for Sauces and Spices

2103 - Sauces mixed condiments and mixed seasonings		
Top 6 Markets for Jamaica's exports (market share in world imports)	*Jamaica's Exports in 2009, USD thousand*	*Total Imports Annual growth in value 2005-2009, %*
World	10,562	13
United States (9%)	7,320	5
Canada (5.1%)	979	10
UK (10.3%)	788	14
Belize (<0.1%)	196	-2
Guyana (<0.1%)	147	20
Trinidad and Tobago (0.1%)	123	18
Other Countries		
Brazil (0.2%)		29
Saudi Arabia (1.2%)		23
Hungary (0.5%)		23
Jamaica's export growth 2005-2009		**9**

Source: ITC Trade Map
The first column of data for each sub sector represents Jamaica's exports to each country. The second column (*Total Imports …*) shows average annual growth rates of total imports for each country, 2005-2009.

8.20   **The organic and ethnic food segments represent an opportunity for Jamaica.** One possible strategy for Jamaica to maintain and expand its market share in the more mature North American and European markets is a focus on emerging niches. A significant trend affecting the food-processing industry in recent years has been the exceptional growth in demand for organic and ethnic foods. Worldwide, the organic food market has been growing by 20 percent to 30 percent annually in recent years. According to the Organic Trade Association (OTA, citing a recent report by Organic Monitor), global organic sales are estimated at US$50.9 billion in 2008,

double the US$25 billion of 2003. OTA also reports that United States sales of organic food and beverages have grown from US$1 billion in 1990 to US$24.8 billion in 2009. Growth in organic food sales since 1998 has averaged 17 percent a year, while total food sales have risen by an average of 3.5 percent annually over the same period. In spite of this impressive growth, organic food sales in the United States still only account for 3.7 percent of total food sales (2009).[162]

8.21   **The increasing demand for ethnic and specialty foods reflects growing ethnic minority groups around the world, increasing international trade, and changing consumer tastes.** In 2005, the United States ethnic food market alone was worth US$75 billion.[163] More recent data shows that United States import of spices grew from US$594 million in 2004 to US$754 million in 2008.[164] Another report highlighted a growing interest in world cuisines and flavors, association of high-quality ingredients with health and wellness, and a growing demand for organic food in the U.S. market (2007).[165]

8.22   **Other important markets for organic and ethnic foods are the EU and Canada**. In the EU, the trend towards organic and ethnic food has been very strong. In Germany, which accounts for 40 percent of the European market, organic food sales have doubled in value since 1998.[166] The UK is the largest ethnic food market in Europe, valued at £1.49 billion in 2008, with market research pointing to further growth in the coming years.[167] In Canada, an aging population is contributing to a growing demand for health-related food (which has been outpacing production), including "better-for-you" food with low calories, fat, sugar, or salt, which has implications for labeling.[168] In addition, increased ethnic diversity in Canada and global travel is contributing to ethnic foods moving out of specialty category and into the mainstream food industry. Demand is also rising for high quality artisan (non-mainstream) and environmentally friendly packaging.[169]

8.23   **The Caribbean in general, and Jamaica in particular, are traditional producers of many products based on agricultural goods, including spices and hot sauces, rum and other beverages, and sugar**. Given the natural endowment and the region's specialization in niche food markets (as well as the size of the countries' economies and exports), the growing global demand for organic and ethnic food represents an opportunity for the region to diversify and upgrade its food-processing industry. At the same time, rising consumption in emerging markets constitutes an opportunity for Caribbean nations to diversify their export markets.

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[162] Data gathered from Organic Trade Association website (http://www.ota.com/organic/mt/business.html), citing two studies: Organic Trade Association's 2010 Organic Industry Survey and The World of Organic Agriculture: Statistics and Emerging Trends 2010.
[163] World Bank (2007)
[164] International Trade Center data.
[165] Packaged Facts (2007)
[166] Daily Telegraph (UK, 2004)
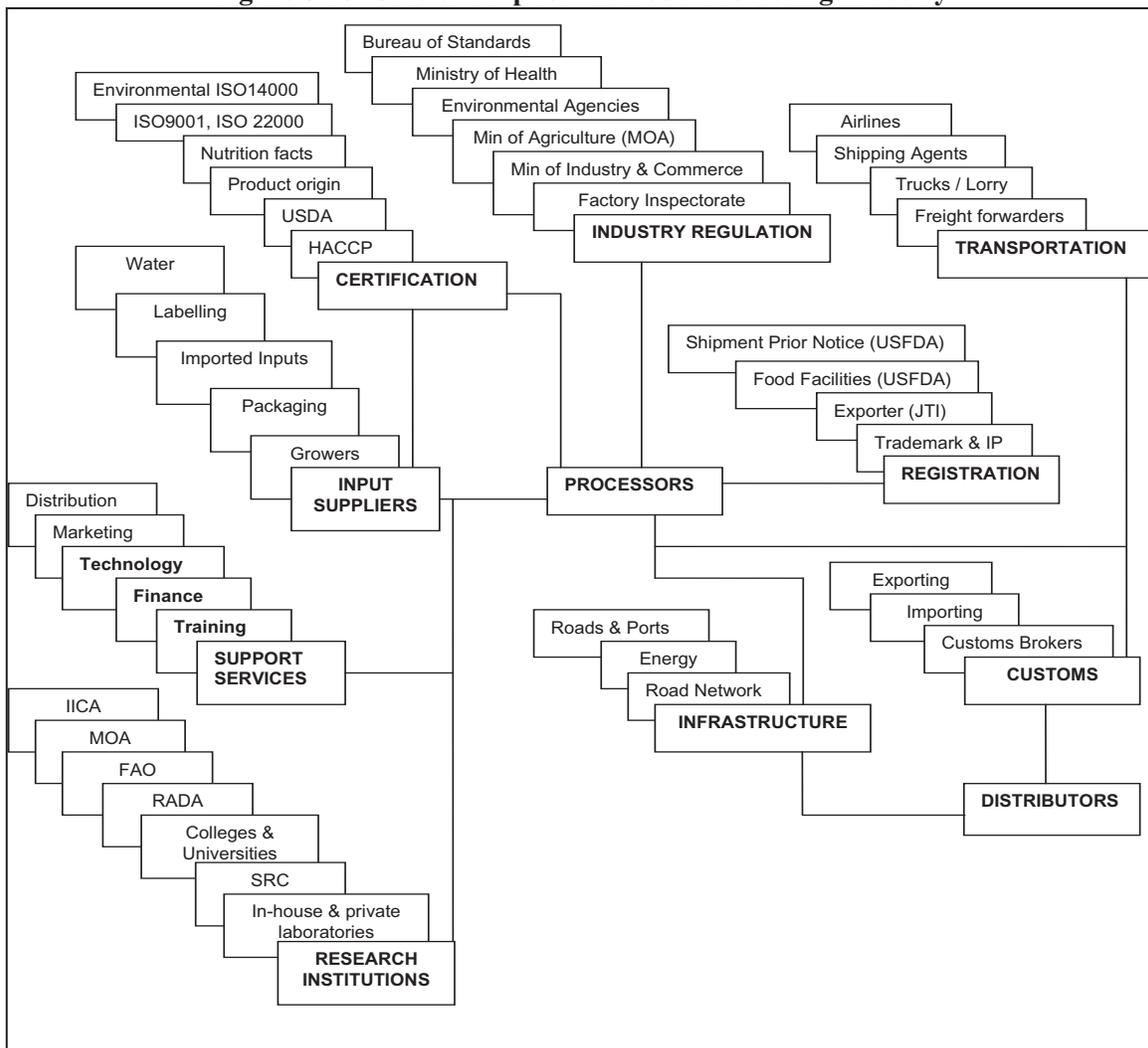[167] Jamaica Trade and Investment (2010)
[168] Trade Facilitation Office of Canada (2009)
[169] Ibid.

B.3. Examining Jamaica's Food-Processing Value Chain

8.24 **The analysis in this section is based on the data and information collected in two rounds of interviews in Jamaica and secondary research.**[170] **It is also based on a cluster map identifying the key players in the processed-food industry.**[171] The cluster map is similar for all segments of the industry. Input suppliers and service providers are linked to processors (see Figure 8.16). The Jamaican government, through various agencies, is involved in the registration of exporters, operation of customs, regulation of industry, and the provision of infrastructure. Independent statutory agencies such as the Bureau of Standards and the Scientific Research Council play multiple roles in supporting the industry, along with the Ministry of Agriculture.

Figure 8.16: Cluster Map for the Food-Processing Industry

Source: (Callender, 2010)

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[170] The full analysis of the food-processing industry, especially the processing firms in the sauces and spices sub-sector, is summarized in background papers for this report (Callender, 2010 and Kim, 2010).
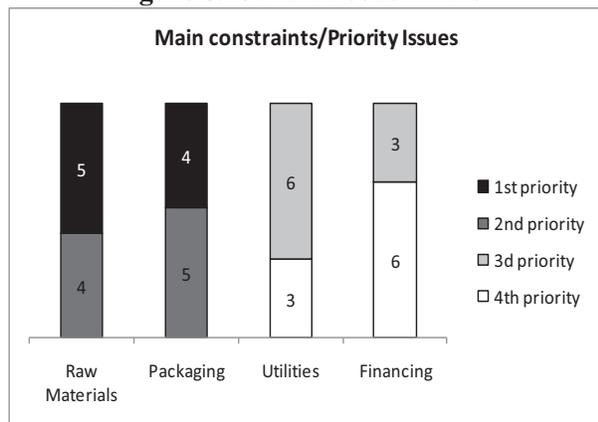[171] See table in Annex 1 for more information of key stakeholders in the Jamaican food-processing sector.

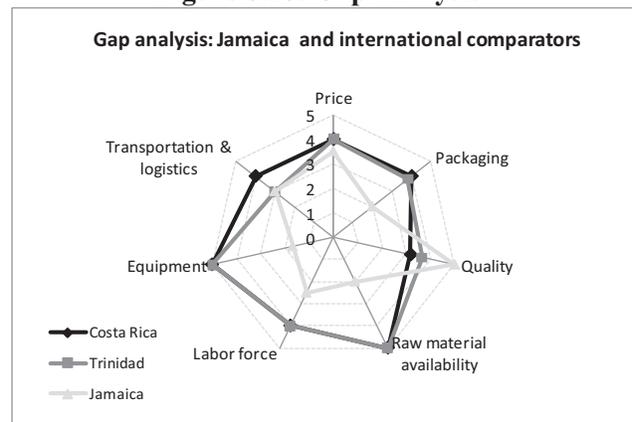**Main constraints**

Focus Group Results

8.25   **An industry focus group analysis conducted in Kingston in March 2010 identified reliable supply of raw materials and packaging as major constraints.** The objective of the focus group analysis was to test stakeholder perceptions on major constraints facing the sector and relative gaps to competition.[172] Among other things, the focus group tested (i) business perception of priority issues in the sauces and spices sector, and (ii) their perception of local gaps relative to international competition.[173] Figure 8.17 and figure 8.18 show the main findings from the focus group. Quality, consistency, and reliability in the supply of raw materials were identified both as a constraint and an important gap relative to some other competitor countries. Packaging is the second most important constraint the focus group identified, while availability of adequate processing equipment is seen as an important gap in relation to other countries. Electricity and skilled labor force availability were also identified as major concerns.

Figure 8.17: Main constraints	Figure 8.18: Gap Analysis

Source: (Kim, 2010), N=9

Source: (Kim, 2010)

Raw Material Sourcing

8.26   **Raw materials, along with packaging, are the most important items in the production-cost breakdown for producers of sauces and spices** (see figure 8.19). A small improvement in either one of these cost items could potentially offset, for instance, recent increases in energy costs. Raw materials—for instance, peppers, onions, and scallions—can represent 30 percent of total production costs.[174]

8.27   **Seasonality and natural disasters (hurricanes, droughts) create significant variance for the supplies of raw materials**. During the rainy months of December and January, raw-
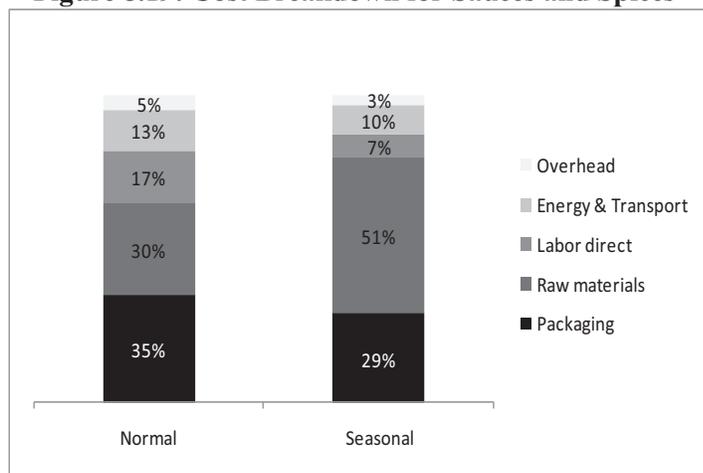
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[172] Most of the participants were from the private sector, such as agro-processing firm owners and association leaders, particularly from the spice and sauce segment.
[173] The gap analysis asked stakeholders to identify top business-winning criteria and who they perceived as top competitor countries. Stakeholders were then asked to rank each business criteria and identify Jamaica's performance gaps relative to top competitors
[174] Stakeholder interviews (2010), JCCP/OTF data (2004).

material costs can increase to 51 percent of total cost (see figure 8.19). Processors report that they must maintain significant and expensive inventories of semi-processed raw materials in stock to smooth potential fluctuations in supply and meet market demand. However, other important factors that affect availability of raw material include inadequate infrastructure, lack of adequate knowledge of best growing techniques, and poor post-harvest care (see figure 8.20).

Figure 8.19: Cost Breakdown for Sauces and Spices

Source: JCCP/OTF, draft presentation document, 2004. Recent increase in energy prices are not reflected, but the cost analysis above was validated with firms consulted in 2010

8.28 **The World Bank's Rural Economic Development Initiative (REDI) is currently trying to address many of these issues in agriculture, including grants to strengthen rural infrastructure.** Past attempts to improve raw-material supplies through non-growing interventions include introducing pepper-mash facilities to reduce waste and lengthen shelf life and better market information to enhancing the efficiency of product markets (JAMIS).[175]

Packaging

8.29 **Despite a favorable importing environment, the high cost of packaging has been driven by the superior bargaining power of suppliers.** These firms—mainly from the US, U.K., Venezuela, and Trinidad and Tobago—sell to a highly fragmented group of buyers, thus exerting considerable influence over prices, service levels, and payment terms. Processors also report that they must maintain significant levels of expensive inventories for such packaging items as boxes and bottles to smooth potential fluctuations in supply. Other coping mechanisms include borrowing or purchasing from other processors and substituting for lower quality packaging, thus contributing to quality inconsistency in export markets (Kim, 2010). Past efforts to address packaging costs were not successful. The programs included joint purchases of bottles, or bulk buying by a combined pool of SMEs. However, such initiatives do not seem to have achieved scale and as a result lost momentum.

8.30 **In addition to incurring high production costs due to packaging, Jamaican processors are likely missing important market opportunities.** Difficulties in sourcing basic quality packaging are possible indications of why Jamaican firms have been largely unable to take advantage of market trends, such as environmentally friendly and ethnically unique
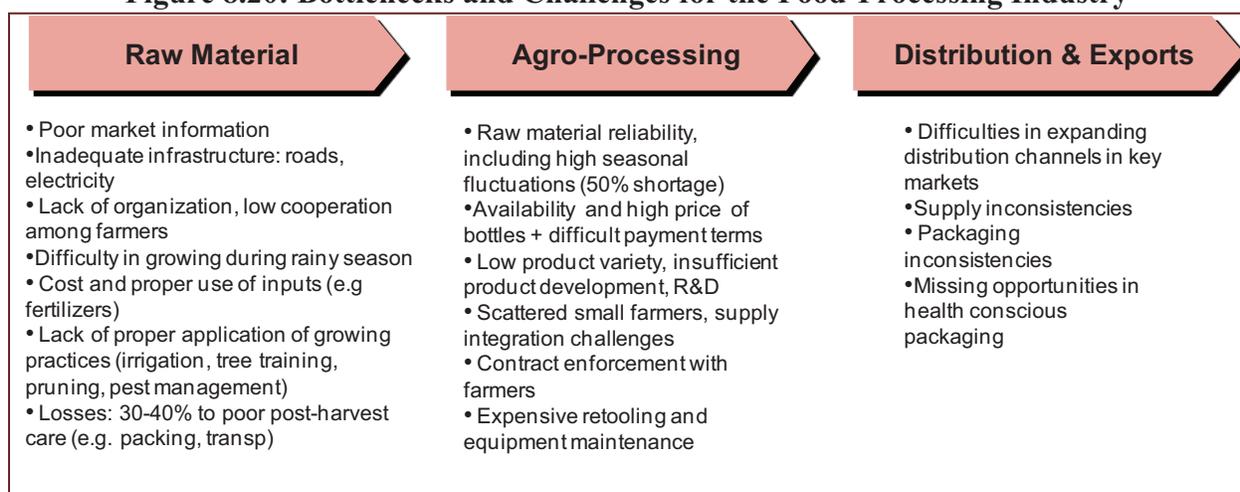
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[175] The Ministry of Agriculture launched the Jamaica Agricultural Market Information System on December 2009 by with the support of USAID. JAMIS collects and disseminates pricing data for agricultural commodities traded in the marketplace, which are posted online on a weekly basis (JAMIS, http://www.ja-mis.com).

packaging, that could open new markets or help firms diversify into more mainstream outlets in markets where they already have a presence.[176]

8.31   **It is important to note that deficiencies in one part of the business can be transmitted to the entire value-chain**. Inadequate sourcing of seeds and other growing challenges, for example, contribute to inconsistent quantity and quality of raw materials (e.g. peppers, scallions, and onions), leading to high processing costs and undermining market access efforts due to issues with supply quality, variety, and output variability.[177] Bottleneck transmissions and major challenges facing the value-chain are summarized in figure 8.20.

Figure 8.20: Bottlenecks and Challenges for the Food-Processing Industry

Raw Material	Agro-Processing	Distribution & Exports
• Poor market information • Inadequate infrastructure: roads, electricity • Lack of organization, low cooperation among farmers • Difficulty in growing during rainy season • Cost and proper use of inputs (e.g fertilizers) • Lack of proper application of growing practices (irrigation, tree training, pruning, pest management) • Losses: 30-40% to poor post-harvest care (e.g. packing, transp)	• Raw material reliability, including high seasonal fluctuations (50% shortage) • Availability and high price of bottles + difficult payment terms • Low product variety, insufficient product development, R&D • Scattered small farmers, supply integration challenges • Contract enforcement with farmers • Expensive retooling and equipment maintenance	• Difficulties in expanding distribution channels in key markets • Supply inconsistencies • Packaging inconsistencies • Missing opportunities in health conscious packaging

Source: (Kim, 2010) and (Callender, 2010)

Access to markets

8.32   **Stakeholders highlighted difficulties in accessing key markets beyond the Jamaican diaspora community**.[178] Among the reasons cited are weak bargaining power relative to buyers and insufficient knowledge of potential markets, particularly distribution channels and information related to certification requirements. Co-packing under supply contracts for both local and overseas food labels is common, but many firms also have their own labels.[179] Despite having their own labels, firms relied heavily on intermediaries and importers, with limited direct access to (and, most important, market feedback from) final retailers and in-country distributors.

Cost of SME certification and the role of certification bodies

8.33   **The high cost of certification to meet minimum market requirements (e.g. ISO 9001, HAACP) has been a significant constraint to SMEs in the food-processing industry.** This

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[176] Environmentally friendly packaging includes reduced packaging, compostable packaging, biodegradable plastic, and bulk buying being marketed as "green..".
[177] Kim (2010), interview with focus group of stakeholders, March 2010. Also, see sectors reports, such as "JCCP Agribusiness Cluster" presentation, 2004.
[178] Callender (2010) and Kim (2010).
[179] Callender (2010), based on interviews conducted in January and February 2010.

constraint is felt more by those firms trying to export, affecting both market access and product competitiveness. In addition to high costs, firms also pointed to areas where the two certification bodies—the Jamaica Bureau of Standards (JBS) and the Scientific Research Council (SRC)—could improve their operations. The role of JBS revolves around standards. More specifically, it is involved in regulation of standards, product registration and compliance, certification, inspection and monitoring, training, product and labeling standards, and providing processors with information on technical barriers and non-trade barriers to trade. The SRC is responsible for product research and the commercialization of research. It provides a range of commercial services to industry, such as sale of formulations, testing of products to established standards, facilitation of labeling for nutrition facts, its own certification mark, as well as training and preparation of scientific studies.[180] In particular, stakeholders saw the need to increase JBS capacity for carrying out some of its core functions, while a recent Jamaica Trade and Investment report indicated the need for increased JBS staff retention and training.[181] In general, SRC is perceived as competent, having sufficient technical resources to carry out the mandate, although there is a perception that its direction and research could be more market-driven.[182]

Other Constraints

Taxes

8.34   **Firms in the food-processing value chain highlighted cumbersome tax procedures as an obstacle to doing business.**[183] Typically, about seven different taxes are filed separately to different agencies. This corroborates the findings of the Doing Business Report, which also points to a burdensome tax payment system (see chapter 3 on growth constraints and chapter 7 on private sector competitiveness for more detailed discussion of taxes).

Crime

8.35   **As discussed in chapter 3, crime and violence have been on the rise in Jamaica and take a significant toll on business**. Crime affects businesses directly through theft or vandalism and indirectly through increased security costs (see chapter 3, section F.2). Moreover, crime and violence also impact efficiency in manufacturing through absenteeism, low productivity, and the constraint of single-shift production based on security concerns. During interviews, some firms confirmed that security costs associated with multiple shifts of technical and managerial staff are too high for these types of operations to be feasible.

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[180] Formulations of numerous types of standardized products are available at the SRC, and the investor can use them to generate products for processing and distribution. In addition to the thousands of formulations available, the SRC assists entrepreneurs in formulating and standardizing recipes and offers a three-month support program to ensure that the product is properly utilized. A certification mark is also offered, along with training and preparation of scientific research.

[181] JBS also collects revenues by offering courses and lab services (Jamaica Trade and Investment, 2009).

[182] Callender (2010)

[183] Focus group with agribusiness firms, (Kim, 2010)

Low level of trust across the value chain

8.36   **During the interviews carried out for the report, the issue of trust came across as a significant, though difficult to quantify, constraint to competitiveness.**   A 2004 national survey conducted by the Jamaica Cluster Competitiveness Project (JCCP) asked respondents whether they agreed with the statement, "You can't be too careful in dealing with other people in the country." Affirmative responses came from 72 percent of those interviewed in the country—and 69 percent in the agribusiness sector.[184] This is manifested in the value-chain in the form of weak farmer organization, resulting in difficulties obtaining economies of scale through collective efforts. It is also a factor among food processors, where difficulties in collaboration have hampered efforts to reduce the cost of sourcing inputs like packaging.

C. CASE STUDY II: THE TOURISM INDUSTRY IN JAMAICA

8.37   **This section will review the performance of Jamaica's tourism industry and the main challenges it faces**. This sector was chosen because of its importance to the overall economy, its relative dynamism, and its potential for diversification. The analysis begins with an overview of the sector and its performance, and then examines the main constraints, particularly in the eco-tourism sub-sector. The goal is to present a more nuanced perspective of the sector, including some suggestions for policy initiatives.

C.1. Industry Overview and Recent Trends

8.38   **Many international and sector specific events in the past two decades shaped the growing tourism industry**. Worldwide tourism arrivals reached 877 million in 2009 (see figure 8.21 and figure 8.22). Between 1990 and 2008, worldwide tourism grew at a 4.6 percent average annual rate, surpassing the 3.4 percent growth rate for global GDP.[185] According to a recent OECD report, international tourism is closely linked to the world economy's performance, but it also responds to specific events, such as terrorist threats, the outbreak of war in Iraq, the Severe Acute Respiratory Syndrome (SARS) crisis of 2003, the spread of avian flu in Asia from late 2003 onwards, and the outbreak of the influenza A/H1N1 virus at the beginning of 2009.[186] The report also points to other key factors shaping the tourism sector in the past twenty years: (i) the development of new and cheaper means of transport, (ii) the intensive use of information and communication technologies, (iii) increased competition between destinations, (iv) the emergence of new international customers, and (v) a trend of more trips for shorter periods.
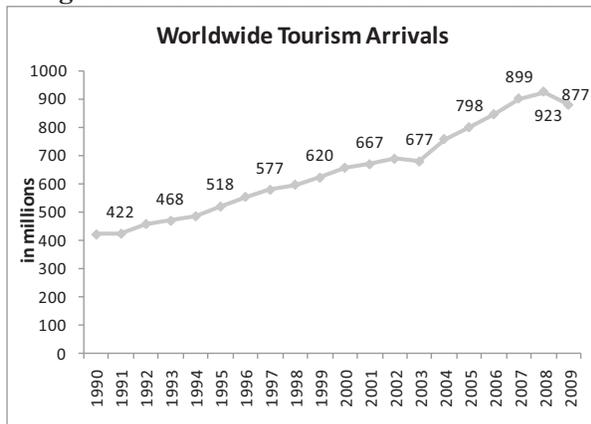
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[184] Jamaica Cluster Competitiveness Project (2006).
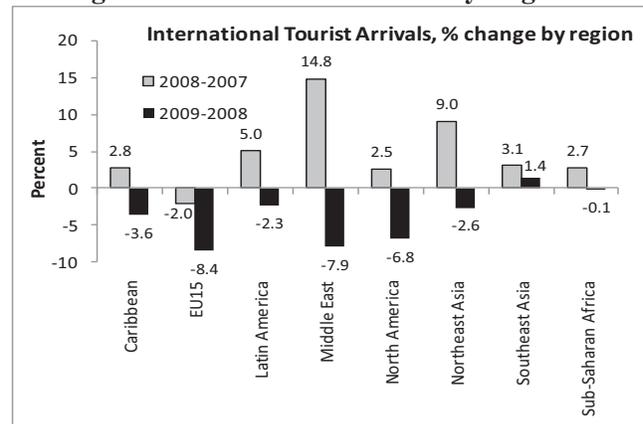[185] Source: OECD (2010)
[186] OECD (2010)

Figure 8.21: Worldwide Tourism Arrivals
Figure 8.22: Tourism Arrivals by Region

Source: World Travel and Tourism Council

8.39   **During the past two decades, the sector's direct contribution to world GDP reached a peak of 4 percent in 1999, but it has since shrunk, averaging 3.2 percent in 2007-2009.** However, a broader measure of the sector's contribution to total GDP that combines the direct effects and the indirect effects via the supply chain of travel and tourism spending shows that the sector's contribution has hovered around 10 percent for the past two decades. In 2009, this figure stood at 9.4 percent.[187]

8.40   **Tourism was not left untouched by the global financial crisis.** From 2008 to 2009, international tourist arrivals contracted 4.2 percent, while international tourism receipts decreased 5.7 percent in real terms (UNWTO, 2010). International tourism suffered a more severe downturn than domestic tourism, business travel was more affected than leisure travel, hotels were more affected than other types of accommodation, and air transport was impacted more than other forms of transport (OECD, 2010).

8.41   **Preliminary data for 2010 suggests that the sector has recovered well, with international tourist arrivals growing 7 percent in the first half of the year.** The UN's World Tourism Organization (UNWTO) predicts more moderate growth for the second half of the year. The recovery was already taking place in some regions during the second half of 2009, so the basis for comparison will not be as low as it was for the first half of 2010. Overall growth rate for 2010 is estimated at 3 percent to 4 percent. Regionally, North and Central America posted higher than average growth rates in the first half of 2010—8.3 percent and 9.1 percent, respectively. The recovery in South America and in the Caribbean has been relatively weaker at 5.7 percent and 4.3 percent (UNWTO, 2010).
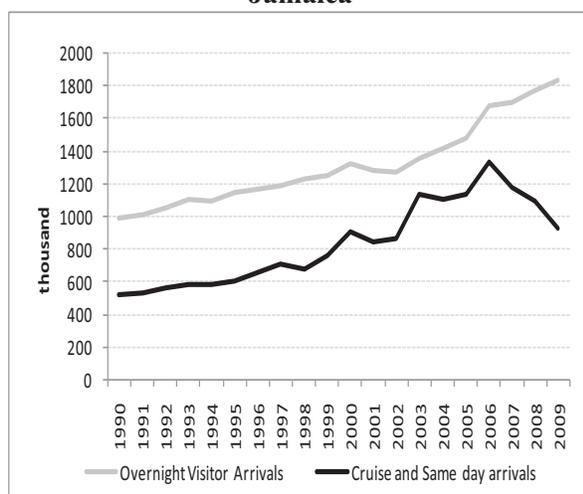
C.2. The Tourism Industry in Jamaica

8.42   **Tourism is one of the Jamaican economy's most important sectors, accounting for about 42 percent of foreign-exchange earnings from the productive sectors (goods and services, 2008).**[188] The development of Jamaica's tourism industry dates back to pre-

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[187] Source: World Travel & Tourism Council, 2010.
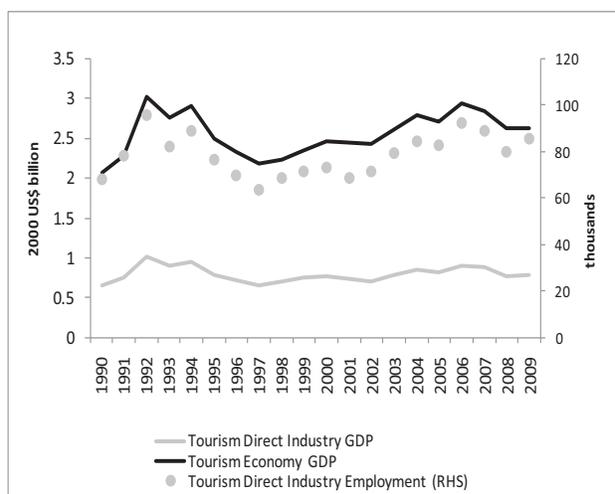[188] Author's calculation using UNWTO data for 2008.

independence efforts to organize the industry under the umbrella of the Jamaica Hotel and Tourist Association (JHTA), formed in 1961.[189] Total tourist arrivals in 2009 totaled 2.7 million overnight visitors and cruise passengers (see figure 8.23). The estimated direct contribution of tourism to Jamaica's overall GDP ranges from 7.3 to 8.1 percent, the figure for 2009.[190] A broader assessment of tourism's impact on the economy raises the figure around 28 percent of GDP (World Travel & Tourism Council, 2010). Direct employment is estimated at an average of 7.5 percent of Jamaica's total (formal) employment during 2005-2009. The hotels and restaurant services sector employed more than 78,000 people in 2009.[191] Both in terms of economic activity and employment, tourism has greater importance in Jamaica than in the larger Dominican Republic, potentially indicating a higher degree of diversification in the latter's economy. However, when compared to the smaller island economies in the Caribbean, such as Barbados, Jamaica is less dependent on tourism (see figure 8.24 and table 8.5).

Figure 8.23: International Tourist Arrivals: Jamaica

Figure 8.24: Economic Impact of Tourism

Source: World Travel and Tourism Council

Table 8.5: Impact of Travel and Tourism on Economic Activity and Employment
(2005-2009 Averages, % of GDP and % of Total Employment)

	Jamaica	Dominican Republic	Costa Rica	Ireland
Travel & Tourism Broader GDP Impact	27.8	17.32	14.72	7.56	52.28
Travel & Tourism Direct Industry GDP	8.34	5.56	6.12	2.04	15.28
Travel & Tourism Broader Employment	24.48	15	14.38	7.12	58.02
Travel & Tourism Direct Industry Employment	7.56	4.9	6.28	2.12	19.28

Source: (World Travel & Tourism Council, 2010)

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[189] (JHTA, 2010)

[190] Sources: STATIN and WTTC, respectively.

[191] STATIN, 2010.

8.43   **Tourism industry in Jamaica shows some differences from its Caribbean competitors**. Other basic characteristics of tourism in Jamaica, and how it compares to other countries in the region, are shown in table 8.6. Worth noting are Jamaica's much greater dependence on North-American tourists, especially from the U.S.), its larger share of cruise ship arrivals, its relatively low percentage of business travelers when compared to Trinidad and Tobago, its slightly higher average spending per visitor, and its lower occupancy rates when compared to the Dominican Republic.

Table 8.6: Basic Cross-Country Tourism Data, 2009

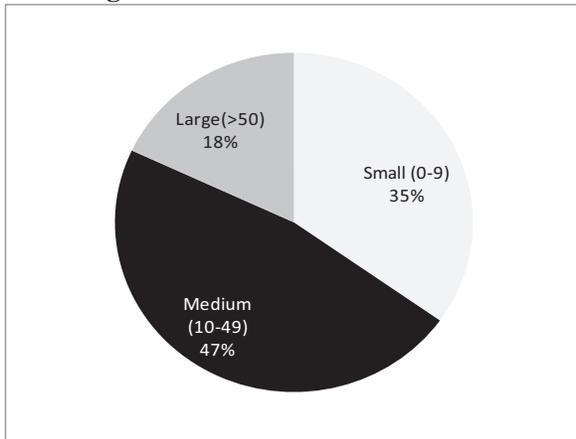|	Jamaica	Dominican Republic	Trinidad and Tobago
Percentage of Stopover Arrivals	62	90	90
Arrivals by Region (top countries), %	USA (65), Canada (13), and UK (11)	USA (28), Canada (16), and France (7)[192]	USA (43), Canada (12), and UK (10)
Percentage of Leisure Arrivals	75	93	70
Percentage of Business Arrivals	6	3.5	20
Average length of stay (nights)	9.3	9.1	15.7
Average expenditure per visitor (US$) \a	1,118	1,049	917
Occupancy Rates (%)	60	70	49

\a Calculated as travel expenditures (not including passenger transport), divided by number of stopover visitors.
Source: UN World Tourism Organization

8.44   **While Jamaica's tourism sector is characterized by small and medium enterprises in hotels and restaurants, most investment and expansion in accommodations over the past five years has been concentrated on larger and all-inclusive hotels** (see figure 8.25 and figure 8.26). Jamaica pioneered the concept of enclave tourism through the Sandals all-inclusive hotels. The number of hotels with more than 200 rooms has increased from 27 in 2004 to 34 in 2008. All-inclusive hotels have increased their importance in the sector, accounting for 75 percent of total rooms in 2009, up from less than 60 percent in 2004, and 35 percent of all units, compared with 26 percent in 2004 (see figure 8.27) Occupancy rates in all-inclusive hotels are markedly higher than in other types of hotels (see figure 8.28).

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[192] Data for the Dominican Republic include specific category for "nationals residing abroad." Given the large Dominican diaspora in the US, it would be expected that a comparable number for total visitors from the US would be higher, closer to 40 percent.
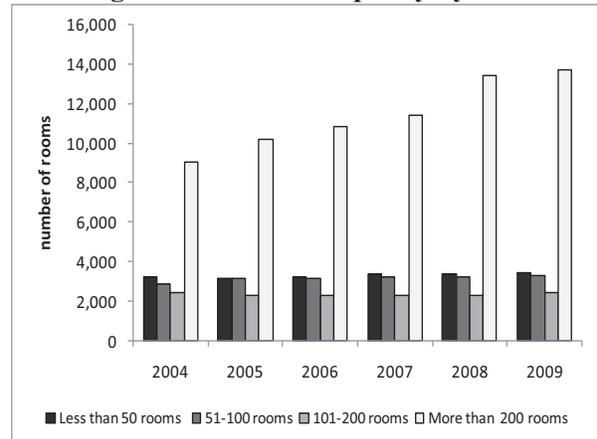
Figure 8.25: Firm Size in Tourism

Source: STATIN data on registered firms and employment, June 2010
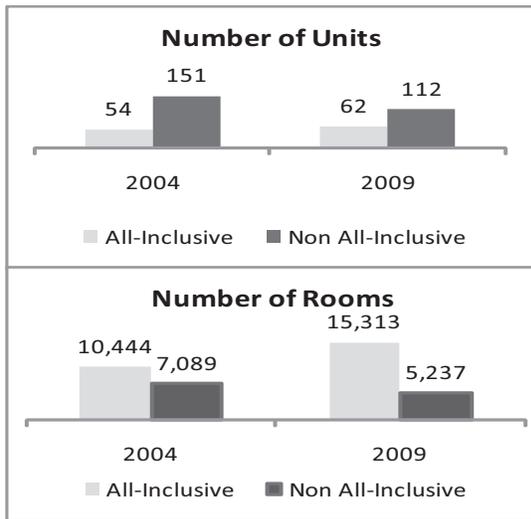Note: size refers to number of employees. N=299.
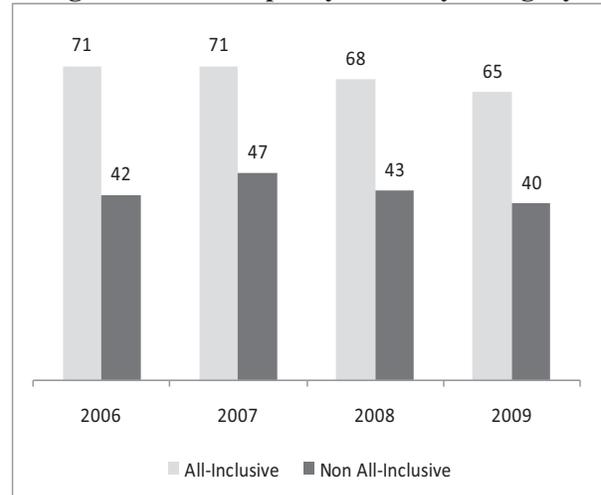
Figure 8.26: Hotel Capacity by Size

Source: Jamaica Tourism Board

Figure 8.27: Units and Rooms by Category
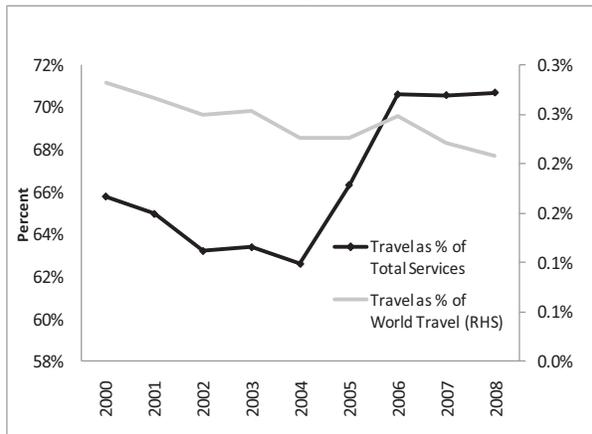

Source: Jamaica Tourism Board

Figure 8.28: Occupancy Rates by Category

Source: Jamaica Tourism Board

8.45   **Tourism is growing in Jamaica: however, the country has lost market share worldwide and in the region**. The growth rate in Jamaican tourism has not been sufficient to maintain its share of the island's services economy, nor has it kept up with the rest of the world (see figure 8.29). Jamaica's average annual growth rate of 5.3 percent in1991-2009 has lagged its Caribbean competitors (see figure 8.30).
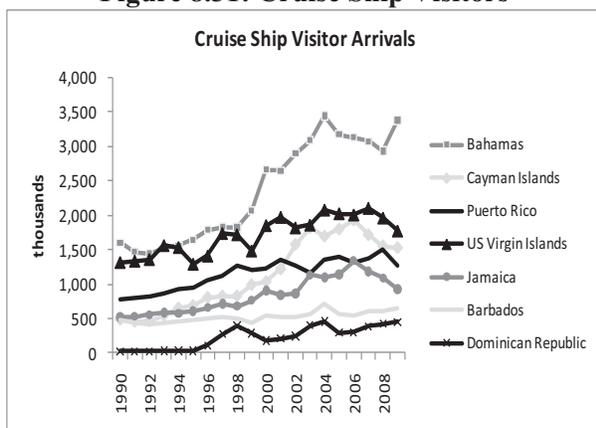
Figure 8.29: Performance of Jamaica's Travel Services

Figure 8.30: Annual Growth of Travel Services

Export of Travel Services (1991-2009)*

Source: Author's calculations, based on ITC, IMF BOP Tables and WDI data
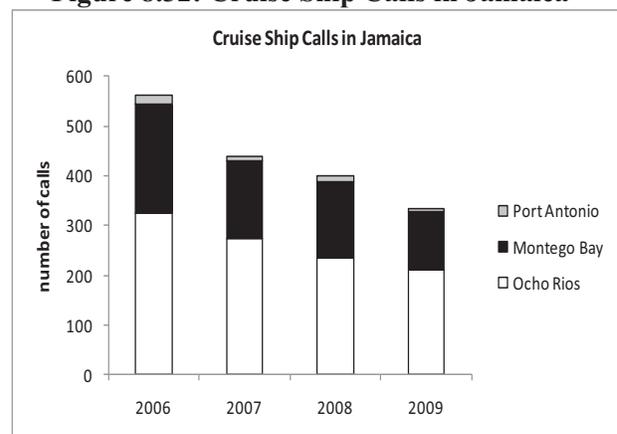(*) Average for Trinidad and Tobago: 1991-2007

8.46 **Compared to its Caribbean competitors, Jamaica shows a greater reliance on cruise ship tourism but arrivals have been falling since 2007, the year before the global financial crisis** The decline is characterized by decreasing number of calls in Ocho Rios and Montego Bay, Jamaica's main ports for cruise ships (see figure 8.32). While this decline is not unique among Caribbean destinations, it may warrant further analysis to understand its causes, particularly given the country's ongoing and significant investments to upgrade its port infrastructure for cruise ships. A new facility in Falmouth, Trelawny, is expected to be completed by the end of 2010. It will be able to host the new Genesis class generation of mega vessels recently introduced into the cruise industry by Royal Caribbean Cruises International.[193]

Figure 8.31: Cruise Ship Visitors

Cruise Ship Visitor Arrivals

Figure 8.32: Cruise Ship Calls in Jamaica

Cruise Ship Calls in Jamaica

Source: WTTC, Port Authority of Trinidad and Tobago, and Division of Tourism, Tobago

Source: Port Authority of Jamaica

8.47 **Jamaica has strong potential to offer a wide variety of tourism experiences, although much of it remains unrealized**. Jamaica's advantages include year-round warm weather, its association with romance, its rich culture (music), its rich fauna and flora, and its

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[193] Jamaica Gleaner News (2010) and Jamaica Observer (2010)

heritage assets. Jamaica reputedly has the highest number of endemic species of birds on an island in the Western Hemisphere. Approximately 1,600 native plant species have been found in Jamaica, including 106 species that exist nowhere else. The country has six resort areas: Negril, Montego Bay, Ocho Rios, Port Antonio, Kingston and Mandeville, and the South Coast. In the past few years, a significant expansion in the room stock has taken place on the North Coast between Ocho Rios, Montego Bay, and Negril due to an influx of FDI from large Spanish hotel chains. Moreover, Jamaica is strategically located on shipping lanes to major trade and tourism destinations. It continues to achieve recognition as one of the world's leading cruise destinations, with ports of call in Montego Bay, Ocho Rios, and Portland, where the West Harbour Marina provides berth for super yachts.

8.48   **The expansion of major hotel chains and incentives to attract large-scale hotels indicate that Jamaica has been competing primarily through mass-scale resort tourism, notwithstanding efforts to reverse this trend**. Under the Hotel Incentives Act, tax relief and duty concessions increase with the hotel size: 15 years for convention-type projects with at least 350 rooms, 10 years for establishments with 10 rooms or more, and seven years for cottage hotels with two rooms or more.[194] This strategy has encouraged growth of large scale hotel investments at the expense of the development of smaller accommodations. There are vulnerabilities in maintaining such a strategy of undifferentiated "sand, sea, and sun" tourism. These include (i) high leakage rates and limited linkages to the rest of the economy, and (ii) issues about its sustainability, both fiscal and environmental. The Jamaican government is aware of this dependence and has been trying to reorient the sector's development strategy with greater emphasis on "bottom-up" community development, MSME inclusion, and environmental sustainability (Master Plan for Sustainable Tourism, 2003 and Tourism Vision 2030). However, the results of these actions are not yet clear.

8.49   **The tourism sector's linkages to the overall economy are weak in Jamaica, and most tourism earnings go abroad.** Given the high dependence on large hotels, most of the tourism earnings do not stay in Jamaica. This "leakage rate" has been estimated to be as high as 80 percent for the Caribbean region, one of the highest in the world.[195] Estimates of multiplier effects in Jamaica's tourism sector are low (see Box 8.1 for definition). McCatty and Serju (2006) calculate the multiplier for Jamaica's tourism sector at 1.0; that is, for every $1 spent by this sector, $1 in output is generated from other sectors. Singh (2008) estimates this multiplier effect at 1.1. He finds higher multipliers in other Caribbean countries: 1.27 in Barbados, 1.18 in Antigua and Barbuda, and 1.18 in Dominica. For comparison, Singh cites multipliers of 1.96 in the UK and 1.72 in Ireland, pointing to the potential of better linkages and greater impact of tourism to the broader economy of a country.

8.50   **The issue of relatively small linkages becomes more salient given the fiscal and economic cost of Jamaica's tourism incentives to attract investment.** According to a recent IDB report, these incentives are expensive to maintain and consumes scares public resources. The report cites tourism as an example of a sector shielded from country-specific risks through

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[194] Ministry of Justice (2006). Annex 4 lists a table of taxes and incentives in the tourism sector.
[195] Source: DFID (2008), citing OTF Group industry research.

tax incentives that contribute little to increased productivity, leading to stagnating real growth rates.[196]

Box 8.1: Tourism Linkages

Measuring the Effects of Tourism

The economic impact of tourism can be measured two ways:

   (i) Direct – tourism-specific activities (labor income and other earnings from the tourism sector);

  (ii) Secondary

Indirect – tourism-related activities (indirect earnings and non-financial livelihood impacts from non-tourism sectors that arise from tourist activity, such as construction workers, farmers, etc.);

Induced – economy-wide activities (from tourism workers who re-spend their earnings in the local economy).

Multiplier rate – the ratio of direct plus secondary effects as a proportion of direct effects.

Leakage rate – the proportion of tourism expenditure that leaves the economy due to high incidence of imported inputs, low spending on local products and services, and repatriation of profits.

Inter-Sector Linkages

Agriculture – Opportunities are often limited by the difficulties in ensuring quality and availability of local products on a consistent basis.

Manufacturing – This is often the sector with the least local purchases in the Caribbean, accounting for only 9 percent on average in the OECS countries, according to the World Bank (2008). The low level is due to the unavailability of raw materials for their production, poor infrastructure, untrained workforce, and the high cost of utilities. Yet, opportunities exist particularly with respect to meeting customized demand, such as that for crafts, toiletries, linens, and some furniture items.

Services – This is the most opportunistic sector in terms of potential increase in the quality and quantity (range) of services provided with local involvement. The local share provision is already high at 90 percent in the OECS, but there is room for expanding attractions, entertainment, and cultural offers.

Linkages by Type of Tourism

Strong linkages are not predetermined by the type of tourism, but rather by the extent to which they are fostered. The degree of spending and local linkages varies across tourism segments. However, the economic impacts of tourism go beyond expenditures per tourist, depending on the types of goods and services purchased. Dissimilar tourism segments and attractions can benefit the economy; for example, there are instances of beach and eco-tourism with both high and low linkages. In Kenya, safari tourism was found to have a higher expenditure per capita but lower multiplier than beach tourism (Sinclair, 1991). Eco-tourism studies of Tanzania have detected high out-of-pocket spending in the Northern Circuit Safari, but low spending in Mount Kilimanjaro (Mitchell, Keane, & Laidlaw, 2009). High spending was found in package beach tourism in The Gambia, but low spending was found by tourists in similar resorts in Tunisia and Cape Verde. In The Gambia, Mitchell (2008) found that a four-star package holiday costs more than 25 percent more than a three-star one. Meanwhile, out-of-pocket spending per tourist differed very little between tourists in two- through five-star accommodations, showing that upmarket tourists are not necessarily better for the poor in the local economy. Scheyvens (2002) suggests that backpacker tourists can stimulate the local economy with significant multiplier effects because they have a potentially higher demand for local goods and services. Moreover, backpacker tourism needs are cheap, with simple accommodations and restaurants requiring relatively low investment and startup costs. On the other hand, evidence for the cruise tourism sector indicates that its lower per capita local expenditure brings limited benefits to destinations, despite lower costs and simpler infrastructure compared to stopover tourism.

High leakages are caused by imported consumer goods, repatriation of profits, overseas promotional expenses, and little spending on local products. Chase & McKee (2003) developed a Keynesian multiplier model of cruise tourism in Jamaica that found that the economic impact of port and city improvements of tourist facilities can result in a net cost rather than net benefit to the economy because they involve expensive investments that are mostly import-based.

How to Stimulate Linkages

Limit crime;

Increase information exchange between the tourism industry and other sectors, such as agriculture, to determine which local products could find a market in tourism and provide insurance mechanisms to deal with the irregularity of supply;

Adopt policies and investments in specific sub-industries related to the tourism value chain (backward linkages) to enhance the competitiveness and quality of their output;

Identify new products and services that could attract tourist demand (forward linkages), and promote their development and marketing.

Prepared by Andresa Lagerborg, World Bank, based on Ashley & Mitchell (2010)

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[196] "The tourism sector in Jamaica is not as vigorous as in other similar destinations. Its stagnation or slow growth is attributed to insufficiently varied attractions and difficulties in creating a different product in order to gain competitive advantage." Panadeiros and Benfield (2010), p. 27.

C.3. Examining the Tourism Value Chain in Jamaica

8.51   **The subsequent analysis of the tourism industry—and especially of firms in the eco-tourism sub-sector—is based on the data and information collected in two rounds of interviews in Jamaica and through secondary research.** The analysis includes a focus group study, and the broader results are summarized as background papers for this report (Callender, 2010 and Kim, 2010). The methodology involves analyzing the tourism experience according to the segments of planning, selection, on-trip, and post-trip.[197]

The Tourism Value Chain

8.52   **In general, the basic visitor requirements of accommodation, transportation, and infrastructure can be complemented by packaging of various experiences, such as tours to sites of cultural or natural interest and culinary events**. Various marketing and distribution channels are used to convert travelers' latent interests into sales of vacation packages. The destination marketing efforts of government or private entities may open new markets and attract new customers. The interest of first-time visitors is in part stimulated by strong national branding. Training institutions and support services complete the cluster, making needed skills available, particularly to support the smaller players in the industry. Figure 8.33 identifies the key players in the tourism sector.

8.53   **The Ministry of Tourism is the lead agency for tourism development in Jamaica**. It is responsible for overall development, policy and legislation, regulation, and strategic direction for tourism promotion, investment and development. Agencies under the ministry's supervision include: the Jamaica Tourist Board (JTB), which is responsible for marketing: the Tourism Product Development Company (TPDCO), which is responsible for product development; Jamaica Vacations Limited (JAMVAC), which is an international tour operator; Jamaica Reservations Limited, which operates the 1-800 Jamaica reservation number and system and several attractions. The table in annex 4 describes the general roles and mandates of key stakeholders in Jamaica's tourism value chain.
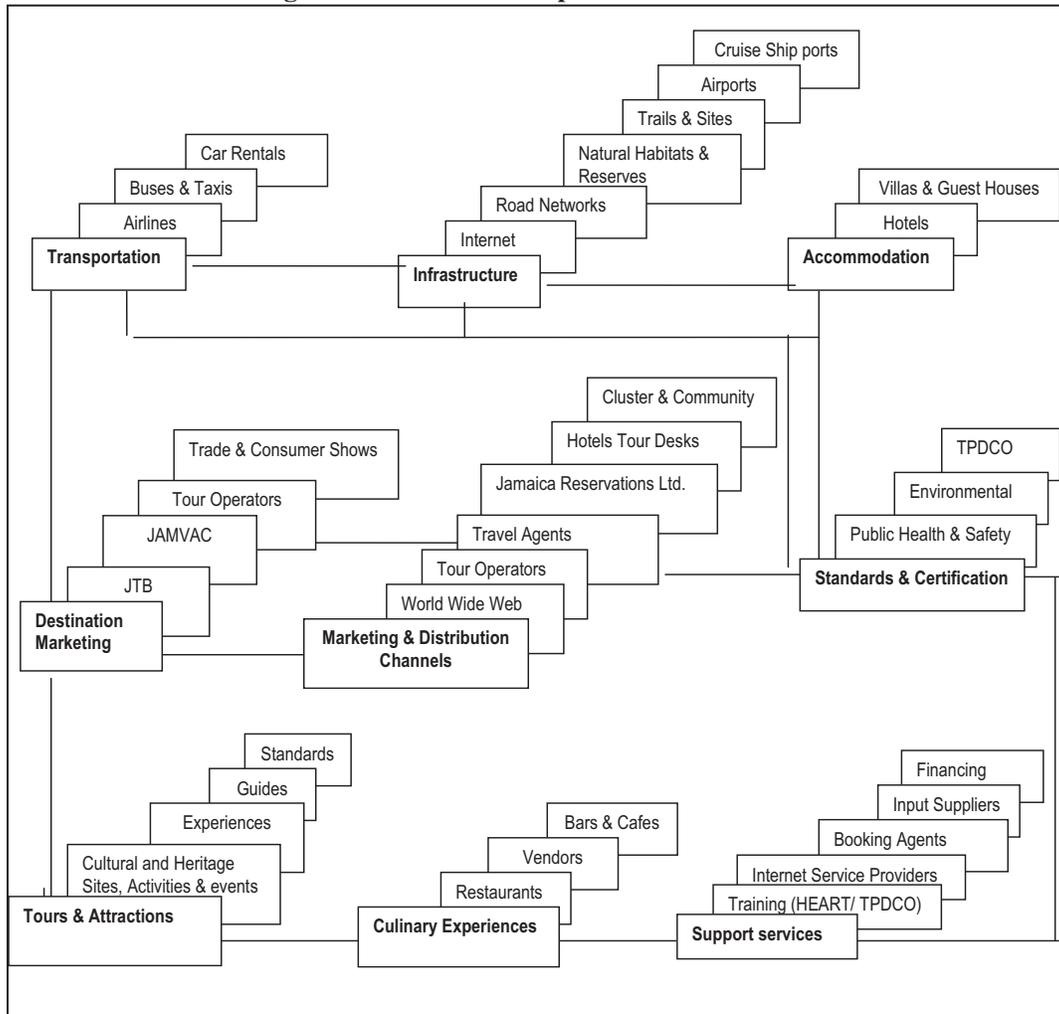
Main Constraints

8.54   **The analysis below highlights some of the main constraints facing the tourism industry in Jamaica.** The topics include the industry's ability to diversify away from all-inclusive "sand, sea, and sun" tourism and toward other types of tourism.

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[197] Framework developed by Monitor Group and OTF Group.

Figure 8.33: Cluster Map for Tourism Sector

Source: Callender (2010)

Global Perceptions of Tourism in Jamaica

8.55 **The Jamaican government prioritizes tourism services through budgetary allocations and incentive policies. However, the sector faces major disadvantages, including brain drain, crime, and insufficient human resources**. According to the Travel and Tourism Competitiveness Report (2009).[198] Jamaica's major advantages include the government's prioritization of travel and tourism in the form of development policies and share of the national budget, cultural affinity for travel and tourism, ease of visa requirements, and bilateral air service agreements. Major disadvantages include ineffective use of natural and cultural resources for differentiating the tourism experience (including the relative lack of UNESCO world heritage sites), a very high rate of brain drain (especially among university educated people), safety and security, high HIV/AIDS rate, and weak human resources (see table 8.8).[199]

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[198] Like the Global Competitiveness Report, this study combines quantitative and qualitative information from both publicly available data and the Executive Opinion Survey, an annual poll the World Economic Forum conducts among CEOs and top business industry leaders in all economies covered by the survey.
[199] WEF (2010).

Table 8.7: Benchmarking Jamaica's Tourism Characteristics

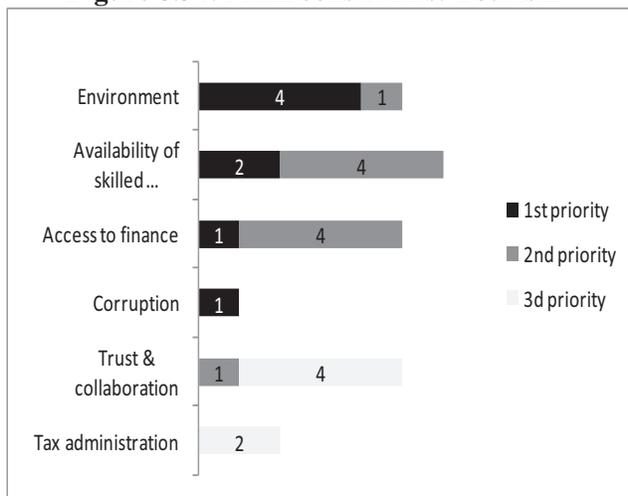| Major Advantages		Major Disadvantages	
Prioritization of Travel and Tourism	(5)	Natural Resources	(114)
Affinity for Travel and Tourism	(8)	Brain Drain	(105)
Visa Requirements	(8)	Cultural Resources (e.g. heritage sites	(98)
Openness of Bilateral Air Service Agreements	(6)	Safety and Security	(96)
		Environmental Sustainability	(93)
		Health and Hygiene	(85)
		Human Resources	(78)

Source: Travel and Tourism Competitiveness Report (2009)
Ranking in parenthesis, out of 133 countries. The lower the rank, the better the performance
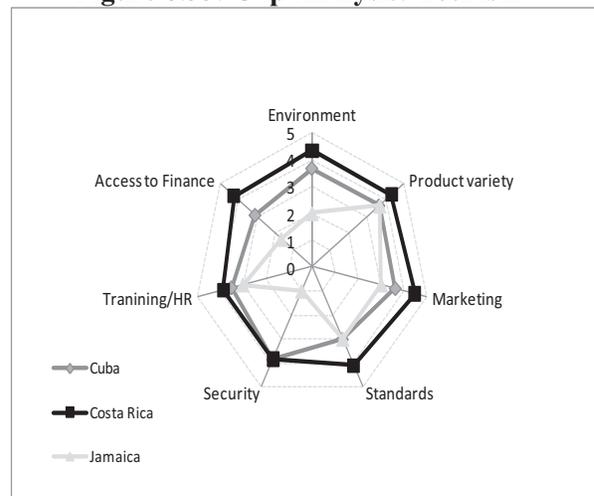
Focus Group Results

8.56 **An industry focus group conducted in Kingston in March 2010 identified environmental degradation, access to finance, insufficient skilled labor, and crime as main constraints.**[200] Among other things, the focus group tested (i) business perception of priority issues and major constraints facing the sector, and (ii) their perception of local gaps relative to international competitors.[201] Eco-tourism stakeholders were invited to participate to focus the analysis on a sub-sector that, given Jamaica's natural endowments, could represent an example of an important niche tourism segment for diversification. Figure 8.34 and figure 8.35 show the main findings from the focus group. Environmental degradation and access to finance are seen as both important priorities and gaps relative to competitors. Availability of skilled labor and security concerns were also identified as major concerns, along with collaboration and trust among different actors in the value chain.

Figure 8.34: Main constraints: Tourism

Source: (Kim, 2010), N=10

Figure 8.35: Gap Analysis: Tourism

Source: (Kim, 2010)

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[200] Most of the participants were drawn from the private sector, such as hotel owners and tourism association leaders, particularly from the eco-tourism segment. The data for industry prioritization and the gap analysis was further collected through a follow-up survey (Kim, 2010).

[201] The gap analysis asked stakeholders to identify top business-winning criteria and which countries they view as their top competitors. Stakeholders were then asked to rank each business criteria, and to identify Jamaica's performance gaps relative to top competitors.

Environmental Degradation

8.57 **Major industries such as bauxite, poor agricultural practices, and even tourism have had negative impacts on the environment over the years**. This has been exacerbated by such natural disasters as hurricanes and floods, lack of planned development, and deforestation.[202] The Food and Agricultural Organization (FAO) estimates that Jamaica suffered a loss of 1.5 percent of its forested areas between 1990 and 2000—about 5,000 hectares.[203] For a small island nation like Jamaica, this is significant and further limits the country's ability to use its natural endowments for a differentiated tourism experience. There is also a perception among eco-tourism stakeholders that mass tourism has contributed to environment degradation, especially because of the insufficient incentives for big hotels to utilize green or clean technologies.

Box 8.2: Who are the Eco-Tourists coming to Jamaica?

According to the World Trade Organization, the main motivation for eco-tourists is observation and appreciation of nature and the traditional cultures prevailing in natural areas. Moreover, nature-based tourism contains educational and interpretive features. Finally, it can support the protection of the natural eco-systems by creating alternative income-generating activities and benefits to host communities.

Eco-tourist travelers to Jamaica also consider Costa Rica, Cuba, Nepal, Ecuador, among other destinations. Sixty-eight percent of visitors decide where to go on *word of mouth* recommendations, while 43 percent use the internet. These tourists care mostly about high levels of hygiene, safety and security, good local excursions with local guides, self-guided trails with good information, and opportunities to share time with locals.

Source: JCCP research, tourism presentation, 2004

Access to financing

8.58 **Financing facilities do exist for tourism—such as the Tourism Enhancement Fund, Development Bank of Jamaica (DBJ), and EXIM Bank, but most industry stakeholders either did not seem to be aware of them or did not find them sufficient or helpful.** Access to finance is discussed in more detail in chapter 3, section D and in annex 1. Main conclusions from the analysis indicate that overall funds availability to the country does not seem to be a binding constraint at macro level in Jamaica. Nonetheless, it is still possible that market distortions affect the allocation of capital. Credit is also concentrated in a few sectors. However, tourism has a high share in credit allocation; therefore, if there are distortions in credit allocation, the tourism does not seem to be one of the sectors being short-changed.

Low Human and Social Capital

8.59 **The industry identified labor skills as another major issue, including absenteeism, poor work ethics and customer orientation, and quality of service**. A need was seen for a focused program to certify tourism-related workers, such as chefs. Existing certification programs, such as the one offered by HEART to certify chefs, were viewed as too short to properly prepare them to serve international customers. For example, it takes just months for a chef to graduate from HEART, compared with years for international cooking schools. Brain

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[202] USAID (2009).
[203] FAO (2002).

drain is a major contributor to low human capital because 80 percent of Jamaican university graduates emigrate to work abroad.[204]

8.60   **Lack of qualified human resources at managerial level could be a constraint**. An analysis of the Jamaican Labor Force Survey—specifically, the hotels and restaurants' sub-sector—shows that tourism's educational attainment, measured by years of schooling, is significantly above the average for the overall economy. Seventy percent of the sub-sector's workers completed the equivalent of secondary schooling, compared with 46 percent for the overall economy.[205] However, very low rates of tertiary-school completion point to potential issues with the availability of qualified management. Only 3 percent of the sub-sector's workers graduated college, compared to 10 percent for the overall economy. Furthermore, human-capital issues may have to do with the quality and relevance of the education being supplied, including that provided by Jamaica's vocational training system. This observation is corroborated by surveys of industry experts, who highlight the quality of the educational system and the extent of staff training as areas where Jamaica does not rank well in relation to comparators.[206]

Crime

8.61   **Safety and security is considered to be a major impediment for travel and tourism activities.** Jamaica's homicide rate is among the highest in the world, with adverse consequences for investment and development (see chapter 3, F.2).[207] Focus group participants considered security as one of Jamaica's biggest disadvantages when compared to such countries as Costa Rica and Cuba. This is a particularly important issue for the sector's ambitions to diversify its base beyond the walls of enclave tourism. The Travel and Tourism Competitiveness Report (2009) again corroborates this evidence, highlighting that safety and security are major constraints to growth for the sector.

8.62   **The impact of crime on the tourism industry was directly felt again in 2010**. Tourism arrivals declined 2.5 percent after the government's pursuit, capture, and eventual extradition to the United States of a suspected drug lord, an event that left more than 70 people dead in Kingston.[208] Before this happened, arrivals had increased by 7.3 percent from January to April.[209]

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[204] Blavy (2006).
[205] STATIN, various years).
[206] The Travel and Tourism Competitiveness Report ranks Jamaica 99th and 85th on these two items, well above the country's overall ranking of 60th out 133 countries. World Economic Forum (2009).
[207] United Nations Office on Drugs and Crime and World Bank (2007).
[208] Source: Jamaica Tourist Board (2010).
[209] The concern over the impact of crime and violence on tourism and Jamaica's image as a major travel destination is not new. Headlines from newspaper show that this concern dates as far back as 1985. For example, "Violence is Blow to Jamaica Image as Island Paradise," *The Miami News*, January 17, 1985**; "**Jamaica's Soldiers Hit the Beaches," BBC News, World: Americas, January 16, 1999.

Other Constraints

Access to Inputs

8.63   **Lack of trust and weak observance of a "code of ethics" seem to hinder cluster initiatives aimed at improving the provision of input supplies and increasing the linkages to the local economy.** In large resorts, much of the food is imported, including eggs. There are currently initiatives attempting to link agriculture and tourism, including one by the World Bank.[210] Attempts to organize a joint purchasing of inputs (e.g. bed sheets, toiletries) by smaller hotels have met significant challenges related to trust issues, despite potential economic gains from collaboration. Participating hotels in cluster initiatives have engaged in joint activities such as input purchasing and web site development, but they have not moved beyond a brief period of momentum as firms started to engage in side dealings, competing with and undermining the cluster initiative.[211] To counter this lack of business ethics, firms suggested the signing of a code ethics or "non-compete" agreements as necessary steps at the outset of cluster initiatives.

Box 8.3: Excellence in the midst of a challenging business environment

One "best-in-class" focus group participant described her 10-room hotel as attracting high-end eco-tourist travelers from the United States and Europe. She provides personalized experiences in a less crowded location in the northeastern coast, branding it as "environmentally friendly" and "luxury boutique accommodations." The facility has been featured in *Condé Nast Traveler* magazine and on TV in the *Today Show* in the US.

To leverage the environmental brand and mitigate the rising energy costs, she built solar panels using a loan from the Jamaican National Bank, receiving low interest rates subsidized by the Tourism Enhancement Fund. The panels provide 10 percent of her energy needs, and she hopes to invest more on solar panels as her credit allows. Other key issues she faces are:

- Sourcing such basic inputs as meat has been a big challenge. She wants to provide personalized service by cooking what guests wants, but this is often impossible because meat and other basic items may not be available locally. She often needs to send a staff member or drive herself for hours to buy supplies from another city;
- Obtaining a work permit for her German co-investor has been a major hurdle. It takes several months to process an application, including a full day appearance in the immigration department. She needs to do this every two years when the permit must be renewed. Her co-investor is considering leaving Jamaica, citing this reason;
- Finding reliable help is also a major challenge. Many workers simply abandon their jobs, without much fear of reprisal or consequences. There is no easy solution to instilling a professional work ethic among her staff, and she does not expect existing training programs to help resolve this;
- Finally, she spends a great amount of time complying with government requirements, including seven forms of tourism taxes, the motor-vehicle tax, and the liquor-license tax. Much of her staff members' time has been taken up by inspections, including encounters with the Tourism Product Development Company (TPDCO), the fire department, the health department, and the police.

Source: Kim (2010)

High cost of electricity and burdensome tax procedures

8.64   **Focus group participants and other firms interviewed highlighted the rising cost of electricity in the past few years as a threat to the tourism sector**. Electricity rates have risen over the past years, especially for SMEs. Studies on competitiveness in Jamaica have also

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[210] *Rural Economic Development Initiative Project* World Bank, (2009).
[211] Interview with stakeholders, February-March 2010 (Kim, 2010).

identified energy costs as a major impediment to investment (see chapter 7, section D.5). The tourism sector's larger and best-in-class firms are reportedly able to pass the rising electricity costs on to consumers: however, many small firms cannot afford to do so.

8.65   **In addition, firms pointed to the excessive number of taxes as another constraint to business.** Among the firms interviewed, the number of taxes to be filed separately was around eight. Fulfilling these requirements translates into 29 more hours a year than the regional average.[212] According to the Doing Business Report (2011), total tax payments required in Jamaica is 72, compared to an average of 33.2 in LAC region and 14.2 in OECD countries.

D. SUMMARY AND RECOMMENDATIONS

8.66   **The analysis presented in the case studies of sauces and spices and tourism points to a number of areas where policy actions can improve performance**. A summary of the main issues identified, together with recommendations on actions to address some of them, is presented below.

D.1. Food Processing

8.67   **Jamaica's food-processing sector as a whole, while growing, has been facing increasing pressures to maintain its competitiveness and world market share**. The sector shows a high degree of concentration in both the products it exports and the markets it reaches. The analysis presented for the sauces and spices sub-sector confirms a similar trend: the industry, while growing, has been limited in its inability to diversify markets. This means not only new countries but also new markets within existing export destinations, such as more mainstream markets or niche products (e.g. organic) in North America and Europe. However, the industry has a potential for extensive and intensive export growth—that is, growth in new, more dynamic market destinations and growth within already established markets. It can do this by taking advantage of the growth in such niche markets as the organic and ethnic foods, or by expanding into mainstream ones. This expansion or diversification into new markets, however, faces a number of challenges. However, several links within the food processing value chain will need to be strengthened. Among them, this report highlights:

- **Sourcing of key inputs**: Reliable supplies of raw materials, both in quantity and quality, are essential not only for entering new markets but also for maintaining export relationships. Efforts to strengthen linkages between agricultural producers and the food processing industry should be continued; however, current initiatives should be monitored and assessed for effectiveness (see recommendation for improved system of feedback provision below). Moreover, packaging should be promoted as a key element of a strategy to access new markets, such as organic or other niche products. Addressing this issue may require improving intra-industry collaboration and assessing lessons learned from past experiences.

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[212] World Bank, Doing Business (2010). It takes an averate of 414 hours a year to file taxes in Jamaica, compared to an average of 384.7 hours in the LAC region. For a list of tourism taxes in Jamaica, see Annex 4.

- **Market information**: Current marketing channels for the island's products may not be providing the feedback needed on market trends and entry requirements. If significant changes in distribution channels are not possible in the short-term, then more will need to be done by industry associations or such entities as JamPro or JBS to provide relevant, targeted and up-to-date information on market trends and requirements. This is especially important for improving the prospect for SMEs.

- **Access to certification**: Having relevant information on certification requirements for new markets or products is usually not enough to enable SMEs to explore new commercial relationships. Certification costs are high, particularly for SMEs in developing countries. Costs vary depending on the certification type, firm size, and country, but a recent World Bank publication finds it takes US$10,000 to $100,000 just to meet one of the basic certification for exports, the ISO 9000.[213] Lessons from international experience highlight the importance of implementing capacity-building projects for standards as a preventive rather than reactive strategy. The effort should include cost-benefit analysis, a clear system of prioritization between different needs, and a look at quality issues in the entire value-chain, not just one part of it.[214] In addition, international experience shows the need for improvements in the supply of well-trained quality consultants and auditors.[215] For the Jamaican sauces and spices sub-sector, efforts at improving access to certification would include prioritization of quality standards according to market-access requirements, improving inter-agency coordination between certification bodies and export promotion organizations and creating forums for public-private coordination.

- **Market strategies**: All these initiatives should be part of a wider effort at defining market strategies for increased export performance. Technical assistance may be needed, especially for SMEs, to enhance the capacity of the industry and its firms to formulate better market approaches, including product development and distribution strategies. This can be provided to a group of firms (cluster) as market research with the goal of expanding market share in key markets. The process entails identifying new buyer segments, formulating channel strategies, and providing concrete recommendations that firms can act upon. Successful examples of market penetration exercises include Afghanistan and Rwanda.[216]

D.2. Tourism

8.68   **Difficulty in diversifying tourism products:** Despite its potential to develop a variety of tourism experiences (e.g. eco-tourism, cultural tourism, etc.), the main driver of Jamaican tourism has been large-scale and all-inclusive hotel development. Current policies to attract large hotels may actually be exacerbating this problem by, for example, restricting the availability of funding to prioritize other tourism segments and their needs. The necessity of diversifying away from the current strategy has been made clear: Jamaica has been losing tourism market share. It

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[213] Guasch, Racine, Sanchez, and Diop (2007)
[214] Sewadeh & Ferrer (2003)
[215] Guasch, Racine, Sanchez, and Diop (2007)
[216] (Henning & Donahue, 2008)

posts industry growth rates considerably lower than its Caribbean competitors. And despite of the generous fiscal incentives it receives, the tourism sector brings limited benefit to the overall economy. Multiple factors contribute to the difficulty in diversifying the tourism sector. Some of the major constraints identified in this chapter are:

- Deteriorating country image, especially in terms of crime.

- A fragmented value-chain—that is, weak cooperation and access to inputs.

- High cost of doing business because of electricity rates, access to finance, tax procedures, certification, and other matters.

8.69   **Strategic Actions to address some of the constraints and provide a comprehensive approach to sustainable tourism**. This can be done through improving existing efforts, introducing environmental mainstreaming into policy design and increasing private participation in providing access to finance related to sustainable tourism:

- **Access to finance**: The Jamaican government could improve access to existing funding mechanisms that promote sustainable tourism, such as the Tourism Enhancement Fund. Improvements in spreading the word about the program alone could generate quick wins.

- **Finding niches**: Global best practices in mainstreaming sustainable tourism include the Earth Lung project, which incorporates UN supported Global Sustainable Tourism Criteria. The concept brings together public-private organizations who commit to growing tourism through carbon clean, green, ethical, and high-quality projects. The result has been a roadmap and strategic actions to promote tourism sustainable on environmental, social, economic, and climate change grounds in such countries Egypt and Sri Lanka.[217] In addition, the Global Environment Facility (GEF) funds provide approximately US$2 billion in grants and concessional funding "to cover incremental or additional costs associated with transforming a project with national benefits into one with environment benefits."[218] Such efforts could be adapted to Jamaica as a strategic input to tourism policy.

- **Private sector initiatives**: Green funds could be used to increase private participation in improving sustainable tourism. They are global, private-sector driven mechanisms to increase access to finance in providing environmental sustainability. One example is New Venture Funds (NVF) India, an initiative by the World Resource Institute (WRI) that transfers capital to business to deliver social and environmental benefits to the "bottom of the pyramid" (SMEs) in the areas of eco-tourism, renewable energy, clean technologies, and water management.[219] NVF launched a Green Investor Network, matching SMEs in developing countries with investors worldwide. It also organizes the

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[217]Terry Delacy and Geoffrey Lipman (2009. See also the UN Global Sustainable Tourism Criteria at www.sustainabletourismcriteria.org.
[218] GEF (2010).
[219] IFC (2009).

annual Call for Business Plans in target sectors seeking investment of US$100,000 to US$5 million, thus creating industry role models.

D.3. Cross-cutting Issues

8.70 **Crime**. Interviewees in both tourism and sauces and spices identified crime as a constraint to businesses in Jamaica. A previous World Bank study provides evidence that criminal victimization of Jamaican firms is high (65 percent of surveyed firms) and that both crime itself and firms' efforts to cope with it create substantial costs in both social and economic terms.[220] Small firms tend to suffer most from criminal activities, pointing to a critical area for improvements necessary for greater diversification in such areas as food processing and eco-tourism, with their potentially greater linkages to local SMEs. A successful diversification strategy will need to ensure that nascent SMEs trying to develop new food products are not overburdened with security costs and that food-processing operations wishing to improve productivity can increase the intensity of their operations with multiple shifts. Taking tourists away from the highly secluded all-inclusive resorts to areas of natural beauty and interest around the island will require special attention to safety and security concerns.

8.71 **Promoting feedback mechanisms to improve policy initiatives**: As mentioned earlier in this chapter, most of the issues identified in this report are not new. Yet they persist, which calls for new efforts at drawing and incorporating lessons learned into the policy-making process. Monitoring and evaluation (M&E) mechanisms and systems are being set up in an increasing number of countries. The growth in M&E systems comes from several factors: (i) the increased demand for public-sector accountability, effectiveness, and transparency: (ii) the increased need for information frameworks and systems to increase program quality; and (iii) the growing availability on the supply side of M&E technologies and instruments.[221] Jamaica can and should do more to ensure that programs are monitored in ways that will allow the country to draw lessons from past and current programs that can be incorporated into the design of future initiatives.

8.72 **Enhancing public-private dialogue**. More needs to be done to strengthen mechanisms for public-private dialogue (PPD). Attempts to promote PPD in Jamaica have been ad-hoc in nature. JCCP has been a rare breakthrough in public-private sector dialogue, but its success has not translated into an institutional PPD mechanism. Competitiveness councils (or variations thereof) have been used to institutionalize public-private mechanisms in a wide variety of countries and contexts, including Vietnam, Egypt, Ecuador, Senegal, and Afghanistan. Although the details vary from country-to-country, global best practices identify key elements of competitiveness councils, including the ability to bring together high government decision-makers, business executives, and academics.[222]

8.73 **Labor skills**. Availability of qualified labor was identified as constraint in both focus groups. While Jamaica has been expanding access to education, issues of quality and training in

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[220] World Bank (2004).
[221] Lopez Acevedo, Rivera, Lima, and Hwang (2010).
[222] Herzberg and Wright, (2005). For more references on PPD best practices, see resources available at www.publicprivatedialogue.org.

specific skills have become more pressing. [223] Attainment is still an issue in the food-processing sector, where only half of the employed workforce has completed secondary schooling. For tourism, secondary-school completion is high (70 percent), but low levels of tertiary completion may also point to problems in availability of more skilled labor at the management level. Both industries point to the need of improving the quality and relevance of the education and training provided by the education system, including vocational training. This represents another instance where better public-private dialogue and coordination can help with the feedback process.

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[223] World Bank (2004)

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ANNEXES

A1.1   **This annex analyzes the possibility of access to finance being a constraint for growth in Jamaica**. It attempts to answer the following questions and come to a conclusion on this matter: Is costly financing affecting growth in Jamaica? To what extent has public debt crowded out financing to the private sector? Are there significant problems to solve in financial markets that affect lending? Are there macro restrictions in terms of funds available to finance investment? Are there restrictions on capital inflows? Is the level of credit and credit to private sector low in Jamaica? Are there significant distortions that affect the allocation of loans? Are there micro problems, such as deficient regulation, that prevent credit-market development, even though financing is available at the macro level?

A1.2   **Poor credit coverage and high interest rates are usually considered evidence of restrictions in the credit market.** If credit is scarce and good investment opportunities exist, high interest rates and low ratio of credit should be observed. Also businesses should be retaining profits for reinvestment—i.e. compared to other countries, more investment at firm level would be financed with retained earnings. One might also observe—if capital inflows are not restricted in the country—that the good investment opportunities are taken increasingly by international firms or multinationals, firms that do not face the same restrictions that local firms. There are caveats to this approach. One problem is that, as Johnson et. al. (2000) state, reduced investment by local firms could reflect their corporate governance deficiencies. It might also reflect other local deficiencies, such as lack of entrepreneurship or distortions in the allocation of local assets (if, for instance local firms can access to markets or rent-seeking activities that foreign firms cannot).[224] Another problem is that interest rates usually do not reflect shadow prices; market credit could be rationed.

A1.3   **If credit is a binding constraint to growth, high economic or investment growth should also be observed when the constraint was relaxed.** For instance, periods of high liquidity at international level or changes/reforms in the local market should lead to high investment. In particular, higher growth in those sectors that rely more on external finance should be observed, as Rajan and Zingales (1998) shows. In other words, the structure of the Jamaican economy should be biased to economic sectors less vulnerable to the credit market conditions.[225]
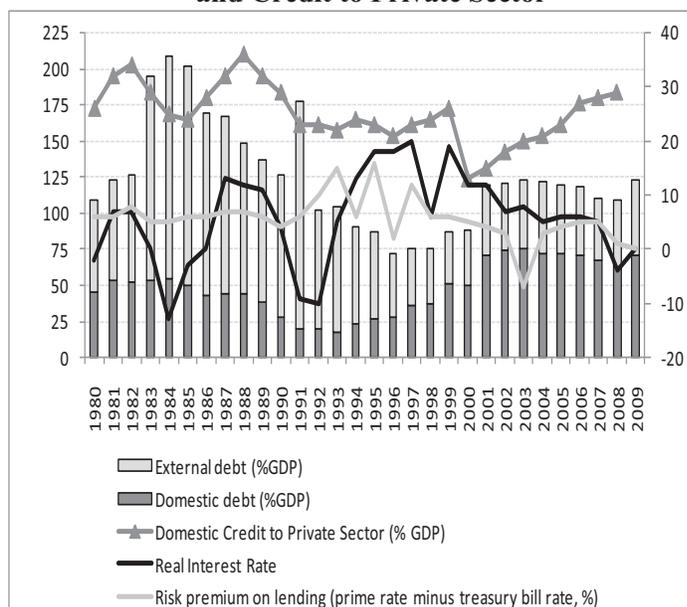
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[224] Desai, Foley and Forbes (2008) study the response to sharp depreciations on multinational and local firms in tradable sectors of emerging markets. Their findings show that multinational affiliates expand economic activity during currency crises, when local firms are most constrained by their inability to circumvent financial constraints. This financial constraint might be temporary, but multinationals are not restricted in the same way as local firms by the conditions of the local credit market when local firms do.

[225] Rajan and Zingales (1998) examine whether financial development facilitates economic growth by scrutinizing one rationale for such a relationship—that financial development reduces the costs of external finance to firms. Specifically, they ask whether industrial sectors that are relatively more in need of external finance develop disproportionately faster in countries with more developed financial markets. Their empirical evidence shows this relationship is true in a large sample of countries over the 1980s, showing that the result is unlikely to be driven by omitted variables, outliers, or reverse causality.
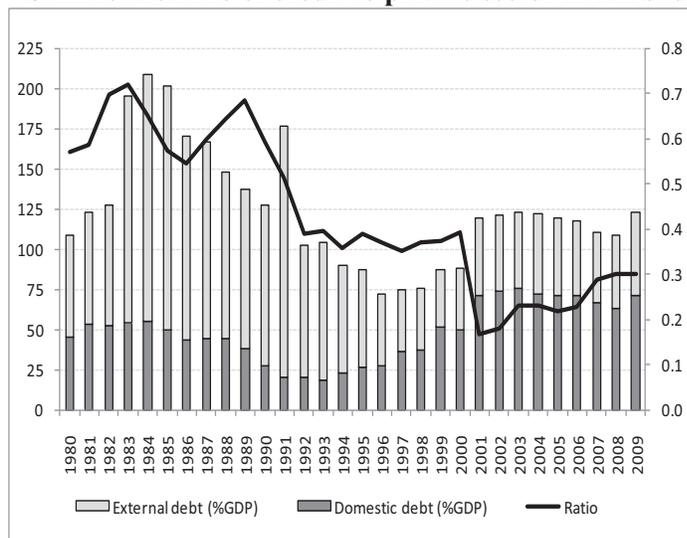
Macroeconomic conditions

Credit Markets

Figure A1. 1: Public Debt Evolution and Credit to Private Sector

External debt (%GDP)

Domestic debt (%GDP)

Domestic Credit to Private Sector (% GDP)

Real Interest Rate

Risk premium on lending (prime rate minus treasury bill rate, %)

Source: Presbitero (2010) and WDI

Figure A1. 2: Evolution of credit to private sector in Jamaica as ratio of credit to private sector in Barbados

External debt (%GDP)   Domestic debt (%GDP)   Ratio

Source: Presbitero (2010) and WDI

A1.4 **As a small open economy, overall funds availability to the country does not seem to be a binding constraint to growth in Jamaica.** From a macroeconomic perspective, Jamaica does not restrict capital flows; in fact, it has been promoting FDI with fiscal incentives. The country has large inflow of workers' remittances, which could be invested if there were attractive opportunities. Instead, a large share of these funds are consumed or invested in housing in Jamaica. National saving rates are in line with Jamaica's level of development.
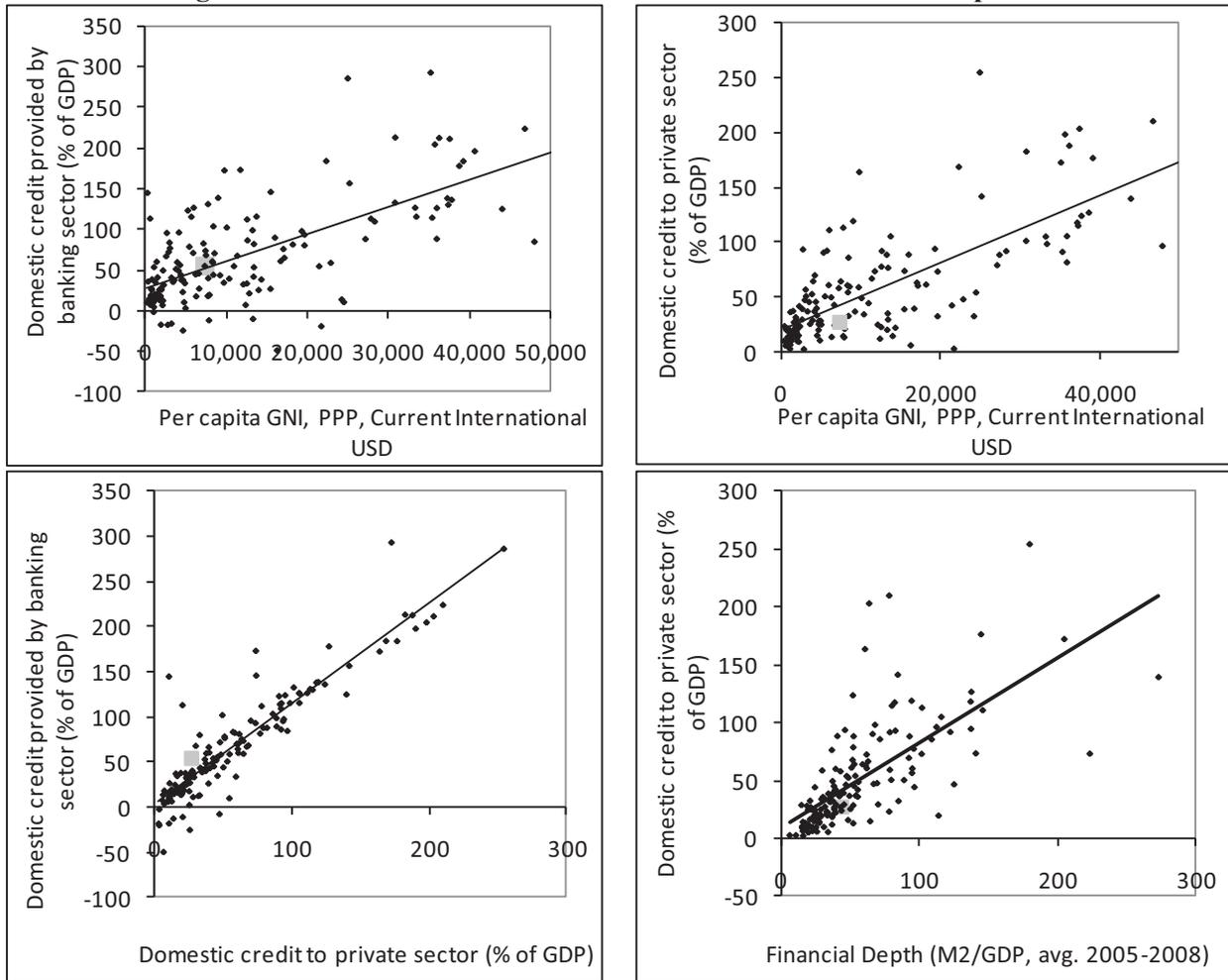
A1.5 **Analysis of real interest rates and credit to private sector does not support the crowding out argument.** Jamaica has a high ratio of public debt to GDP, and fiscal sustainability has been a recurrent problem in recent decades. Since the early 1990s, debt structure in Jamaica has changed toward domestic debt.[226] Figure A1.2 combines the evolution of public debt and its structure with the stock of domestic credit to the private sector,[227] the domestic real interest rate, and the risk premium on lending (prime rate minus Treasury bill rate). In the 1980s, domestic credit to private sector

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[226] This shift is consistent with the common trends observable in many developing countries and in several heavily indebted poor countries (see Presbitero 2010, Panizza 2008 and Arnone and Presbitero 2010).

[227] Domestic credit to private sector refers to financial resources provided to the private sector that establish a claim for repayment—such loans, purchases of nonequity securities, and trade credits and other accounts receivable,. For some countries, these claims include credit to public enterprises. Source: International Monetary Fund, International Financial Statistics and data files, and World Bank and OECD GDP estimates.

was high, with very low real interest rates and a very high public debt that was external and mostly multilateral. In the 1990s, domestic public debt increased while credit to private sector continued to grow, albeit at a slow pace. However, this might have been affected by the financial crisis of 1996. In the 2000s, domestic credit to private sector increased consistent with the liquidity in the international markets, while government debt was stable or slightly falling. The second panel of Figure 105 shows the ratio of credit to private sector in and Barbados. First, Jamaica has always lagged Barbados. In 1966, for instance, credit to private sector in Barbados was 36 percent of GDP, while it was 17 percent in Jamaica. Second, in the late 1980s and early 1990s, Jamaica's public debt declined while, while its credit to the private sector fell relative to Barbados. More important, when Jamaican public sector started issuing local debt in the 1990s, the country's credit to private sector improves slightly compared to Barbados. Overall, this evidence seems inconsistent with the crowding-out hypothesis. It would be expected that credit to the private sector in Jamaica would fall when public-debt increases and crowds out private financing.

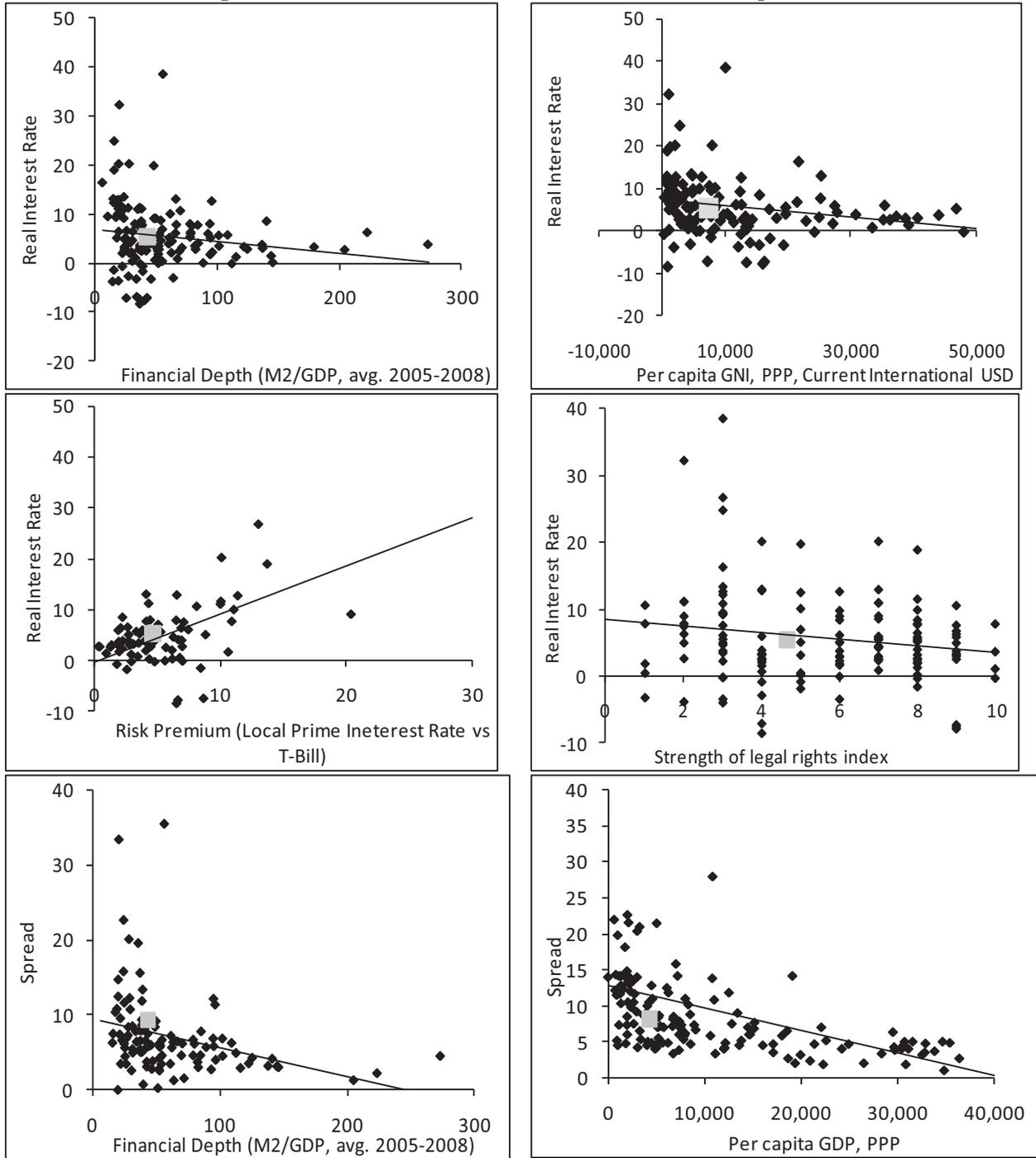**Figure A1. 3: Credit to Private Sector from an International Perspective**

Source: Authors elaboration based on WDI

A1.6   **Analyzing Jamaica's credit to private sector in the international context also does not give support to crowding out.** Figure A1.3 presents several indicators of the depth of the credit to the private sector. In all panels, red denotes Jamaica. As a percent of GDP, domestic credit to the private sector is lower than expected for Jamaica´s level of development level, whether GDP per capita or financial depth measured by M2/GDP is looked at. However, Jamaica's domestic banking credit is in line with the expected level for its level of economic development, measured by GDP per capita. This implies that the development of the non-banking credit is below its expected level. Given that non-banking credit usually competes less with government debt, this evidence does not support a crowding-out story.

A1.7   **Similarly, analysis of interest rates in international context does not support crowding out.** Real interest rates and domestic interest rate spreads are in line with economic development and financial depth. Real interest rates are aligned with the local risk premium as well as with the strength of legal rights (see figure A1.4). If a government high in domestic debt is crowding out financing from the private sector, interest rates (if they reflect shadow prices) should have been above the level expected from economic development or financial depth.

Figure A1. 4: Interest Rate from an International Perspective

A1.8   **However, domestic credit to private sector (as a percent of GDP) seems to be below expected levels, according to real interest rate, domestic risk premium or interest rate spread.** Figure A1.5 compares credit conditions with private credit depth. The results indicate that domestic credit to private sector is below its expected level when financial market conditions are taken into account. In other words, from a macro perspective, the quantity is low. Since the

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price is not high, however, this situation does not provide an evidence for crowding out. International benchmarking shows that Jamaica does not have very unfavorable conditions; on the contrary, several dimensions look well for its development level.

Figure A1. 5: Credit Depth and Market Conditions

Financing from the Business Climate Perspective

A1.9 **The 2006 Investment Climate Survey (ICS) indicators put Jamaica in a relatively good position.** The 2006 ICS included only 94 firms for Jamaica, a relatively small sample. Therefore, the results should be regarded as only indicative. Of the 94 firms, only 27 (or 29 percent) invested in the "last year"—low compared to the 95 other countries in the sample. For the Jamaican firms, an average of 28 percent of the new investment was financed with commercial bank funds and 42 percent with equity. For the world, average commercial bank financing was just 16 percent and equity financing was 67 percent. In Jamaica, therefore, commercial banks have a more important role. Large firms used more commercial bank funding and less equity in most countries; by contrast, small firms used much more commercial bank financing in Jamaica, followed by medium-sized enterprises. Large firms in Jamaica rely more heavily on equity financing (see Figure A1.6). A similar pattern was found for the financing of working capital. The World Bank ICS also shows that the average value of Jamaican firms' collateral was 114 percent of outstanding debt, a very low figure when compared to any region. The caveat should be kept in mind—this analysis is limited by the very small subsample of firms answering this question.

Figure A1. 6: Investment and Working Capital Financing according to the ICS

A1.10 **Although the analysis so far shows conditions in the credit market are not particularly bad, the relatively positive verdict from international benchmarking is not reflected in business opinions.** A large percentage of Jamaican firms indicates that access to finance is a major constraint. A cross-country comparison finds Jamaican firms complain more about credit conditions. It is possible that the results are affected by the small sample size. In addition, the Jamaican firms seem to be more negative in general than their counterparts in other countries. They are more likely to report any factor as a major or severe constraint (see Table A1.1). The data is analyzed in more detail to understand this apparent paradox.

Table A1.1: ICS. Access to Finance

Country/Region	% of Firms with Line of Credit or Loans from Financial Institutions	% of Firms Using Banks to Finance Investments	% of Firms Using Banks to Finance Expenses	Value of Collateral Needed for a Loan (% of the Loan Amount)	% of Firms Identifying Access to Finance as a Major or Very Severe Constraint
All countries	**34.37**	**23.61**	**27.59**	**144.22**	**31.14**
East Asia & Pacific	40.6	26.92	29.97	177.13	20.33
Eastern Europe & Central Asia	43.74	37.18	48.25	133.05	24.14
Latin America & Caribbean	46.97	20.66	36.34	133.9	27.76
Middle East & North Africa	25.08	16.46	27.08	149.24	33.62
OECD	..	34.18	35.31	130.22	13.01
South Asia	32.1	27.21	32.87	177.95	23.33
Sub-Saharan Africa	21.63	13.05	19.22	142.6	45.64
Brazil (2009)	65.34	48.37	60.01	71.01	55.51
Chile (2006)	69.06	29.07	48.89	100.21	20.38
Costa Rica (2005)	..	14.88	16.08	105.68	44.61
Dominican Republic (2005)	..	12.5	32.5	131.29	32.89
El Salvador (2006)	48.93	17.27	39.04	150.78	24.82
Guatemala (2006)	33.56	12.81	22.78	125.1	20.5
Honduras (2006)	46.87	8.51	36.04	78.16	26.71
Jamaica (2005)	**..**	**37.04**	**57.35**	**114.4**	**43.82**
Panama (2006)	55.59	19.23	39.37	88.43	9.68
Korea, Rep. (2005)	..	39.88	41.18	132.92	12.11
Spain (2005)	..	32.61	35.83	128.38	13.27
Germany (2005)	..	44.95	42.21	125.99	15

Figure A1.7: Jamaica. Percentage of firms finding the factor as a Severe or Major Constraint for Business Operations

A1.11 **Cost of financing is perceived as a business constraint worldwide. However, ranking major constraints for Jamaica relative to the world responses changes the conclusions, making crime the biggest constraint for Jamaica.** Analyzing the world sample, the three factors most often chosen as "severe" or "major" constraints are (in order of importance): macroeconomic stability, cost of financing, and tax rates (see Figure A1.7). The same three constraints are atop the Jamaican list but in a slightly different order—cost of financing, macroeconomic instability, and tax rates. For Jamaica, these are followed by crime. The three top factors may reveal a bias in the question because

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the business community can easily understand their consequences and the direct impact on their profits. Another way to analyze binding constraints in Jamaica is to compare the response of the Jamaican firms to the world responses.
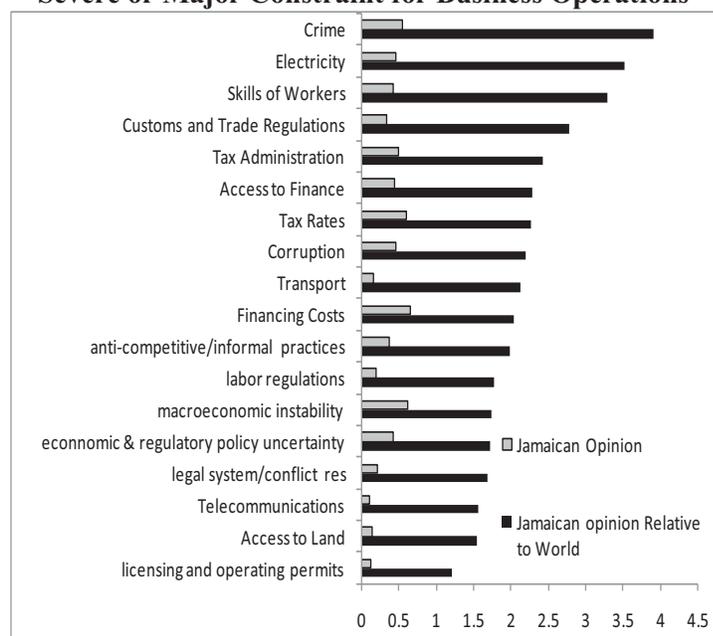
Figure A1.8: Percentage of Firms Finding the Factor a Severe or Major Constraint for Business Operations

A1.12 **Computing the ratio of firms finding a factor as a major or severe constraint in Jamaica relative to the world changes the conclusions: first factor becomes crime, followed by electricity, and skills of workers (see figure A1.8).** These are the factors that Jamaican companies complain about the most when compared to firms in the world. Access to finance in this ranking is sixth, coming after customs and tax regulations and tax administration. The cost of Financing is tenth. It should be noted that access to finance ranks worse than cost of financing in Jamaica, while the opposite is true for the world and most of the LAC region. This might reflect problems for some firms in Jamaica, even if there is enough financing at the macro level. It might be a signal too that there are some distortions in the allocation of credit among firms.

Financial Markets

Table A1. 2: Market Capitalization as % of GDP

	2000	2005
Barbados	65.6	185.3
Jamaica	**44.6**	**134.4**
Trinidad and Tobago	53.1	115.0
Argentina	58.4	33.5
Brasil	37.6	59.8
Costa Rica	18.3	7.6
Colombia	11.4	37.6
Chile	79.7	118.4
El Salvador	15.5	21.3
Guatemala	1.2	n.a.
México	21.5	31.1
Venezuela	6.9	3.6
Malaysia	129.5	139.3
Mauritius	29.8	40.6
Singapore	167.1	178.4
Korea	33.5	91.2
Latin America & Caribbean	32.6	44.7
Upper-Middle Income	39.3	60.2
High Income	117.8	113.2

Source: World Bank

A1.13 **According to the 2006 IMF Staff Report, Jamaica's financial system is large and interconnected, with reasonably well-developed markets**. Total assets amount to about 185 percent of GDP (see Table A1.2). All segments of an advanced financial system are present and closely interconnected via a handful of dominant conglomerates. Several of these have foreign parent companies or overseas activities, and the parent of one domestic conglomerate is an industrial company. Jamaica has active primary and secondary markets for government bonds, an automated stock exchange for equities, a deep repo-based money market, an active (though small) market for short-term commercial paper, and a spot market for foreign exchange. The stock market has benefited from

the development of the Jamaica Central Securities Depository, which has facilitated an increase in trading and transfers of shares between Jamaica and the central securities depositories in Trinidad and Tobago and Barbados. However, the number of listings (41) remains small, market liquidity is low, and there has been almost no new initial public offerings in spite of improving market conditions.

Micro Factors

Banking Regulation

A1.14 **Since the financial crisis of 1996, Jamaica has considerably strengthened its financial system oversight**. The financial system is deep and well-developed, the regulatory framework has in many respects been brought into line with best international practices, and supervision appears to be implemented in a systematic and professional manner (see 2006 IMF Staff Report). Nevertheless, some regulatory gaps and weaknesses remain in the financial infrastructure. The banking system is very concentrated—as it is in all other Caribbean countries. This requires strong regulatory approach to avoid connected lending, conflicts of interest, and regulatory arbitrage. However, data limitations prevent a full system-wide quantitative analysis of risks. Sizable public-debt holdings by all financial institutions mean that the stability of the financial system as a whole is closely bound to the sustainability of the macroeconomic environment.

Conclusions

A1.15 **Access to financing and cost of financing do not seem to be major constraints in Jamaica.** First, Jamaican firms show good indicators when compared to those in other economies. Second, real interest rates are not high. Third, financial regulations have improved since the mid-1990s crisis. On a more intuitive side, Jamaica has been able to invest at a high level compared to LAC averages, even after controlling for overestimations. If there is any financial constraint, it is not reflected in investment; therefore, its shadow price should be low.

A1.16 **Business opinion seems not to be in line with these stylized facts, though this is true in almost any economy**. Firms complain about access and cost of financing. However, computing the ratio of firms complaining in Jamaica to the world, the results indicate that financing does not show up in Jamaica as something distinctive. The first three major constraints are crime, electricity, and skills of workers, according to this analysis.

ANNEX 2: INFRASTRUCTURE

Transport

Roads

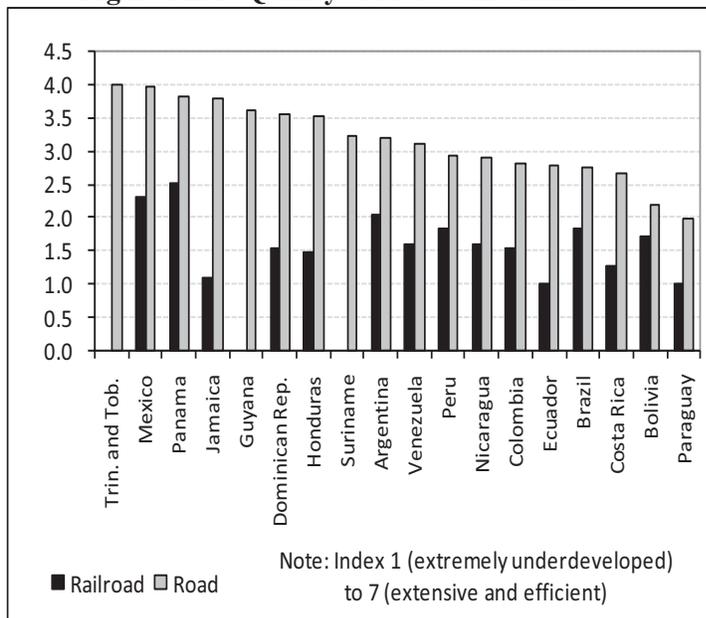**Table A2. 1: Roads: Indicators for selected countries**

	Network (km)	Road density (km/km2 land)	Paved roads (%)
Colombia (2006)	164.278	15	..
Costa Rica (2007)	36.654	72	26
East Asia & Pacific (2007)	..	36	..
Ecuador (2007)	43.670	15	15
High income: OECD (2005)	..	85	..
Iceland (2007)	13.048	13	37
Jamaica (2007)	**22.121**	**201**	**73**
Korea, Rep. (2007)	102.061	103	78
Lower middle income (2007)	..	240	..
Mauritius (2007)	2.028	99	98
Mexico (2007)	360.075	18	38
Middle income (2006)	..	89	..
New Zealand (2007)	93.748	35	65
Peru (2006)	78.986	6	14
United States (2005)	6.544.257	68	65

Source: WDI

A2.1 **In international comparisons, Jamaica has a high road density, along with high access to paved roads (see table A2.1)**. However, most roads, particularly rural roads, are inadequately maintained and in poor condition. Consequently, the quality of the service, according to the World Economic Forum's Global Competitiveness Report, is lower than expected. In an attempt to improve road infrastructure at a time of fiscal restrictions, the government has invited the private sector to participate in the Highway 2000 project—construction of a 230-km highway connecting Kingston, Montego Bay, and Ocho Rios—through a combination of build, operate, and transfer contracts and public-private partnerships. This highway will be the island's first toll road. The private investor will collect financial resources from tolls associated to highway's utilization but it won't receive subsidies from the Government.

Railway

Figure A2.1: Quality of Roads and Railroads

Note: Index 1 (extremely underdeveloped) to 7 (extensive and efficient)

Source: World Economic Forum 2008/2009

A2.2 **Railway system is not well developed in Jamaica**. The country has 272 km of lines. The Jamaica Railway Corporation owns 207 km but services were deactivated in 1992. Private companies own and operate the remaining 65 km in the network, and most of them (57 km) are being used by a private operator (ALCAN) to transport bauxite. The shortage of railways is one reason Jamaica has scored low performance on the railroad infrastructure development index. According to the World Economic Forum 2008/2009 Executive Opinion Survey, Jamaica's index was lower than most Latin American countries at 1.1 (where 1 = underdeveloped and 7 = as extensive

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and efficient)(see figure A2.1). To improve the railway's situation, Jamaica's government has signed an agreement with Rail India Technical and Economic Services Ltd. to revitalize the Jamaica Railway Corporation.

Ports

Table A2.2: Ranking of Seaports

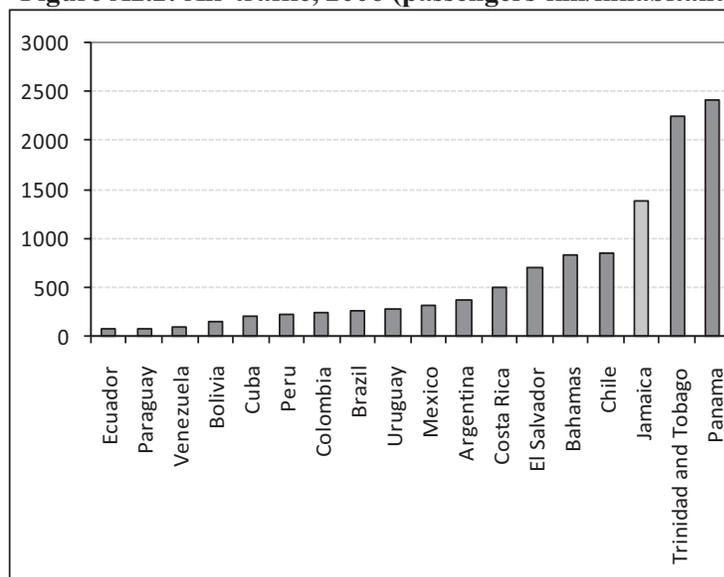| PORT	COUNTRY	TEU 2009
Santos	Brazil	2.255.862
Colón	Panama	2.210.720
Balboa	Panama	2.011.778
Kingston	Jamaica	1.700.000
Freeport	Bahamas	1.680.000
Buenos Aires	Argentina	1.412.462
Cartagena	Colombia	1.237.873
Manzanillo	Mexico	1.110.350
Callao	Peru	1.089.838
Caucedo	Dominican Rep.	906.279

Source: Perfiles Marítimos, ECLAC

A2.3 **The continuous implementation of the Strategic Seaports Development Plan has increased port efficiency in Jamaica, and the Port Authority of Jamaica is widely regarded as one of the better performing publicly owned infrastructure providers (see table A2.2).** The port sector is crucial for the Jamaican economy because it contributes significantly to the development of international trade. The government port authority manages container terminals in Kingston Port, Ocho Rios, and Port Antonio as well as Montego Bay Port; other ports are managed mainly by private investors. Kingston Port processes 80 percent of total imports.

A2.4 **Compared with the other Latin American countries, seaport activity in Jamaica is well developed.** Jamaica has one of the leading indicators for port turnover per inhabitant in the region—four times higher than the Dominican Republic, two times higher than Panama, and one-third higher than Trinidad and Tobago. Kingston Port was ranked fourth among Latin American ports for volume handled in 2009 (Perfiles Marítimos, ECLAC). Furthermore, Jamaica's port infrastructure quality is ranked 28th of 133 countries, according to the 2008/2009 World Economic Forum survey.

Airports

Figure A2.2: Air traffic, 2006 (passengers-km/inhabitant)

Source: own calculations based on ECLAC 2009 Yearbook

A2.5 **The airport sector performs well in Jamaica.** The industry consists of 35 airports, 11 with paved runways, and Kingston and in Montego Bay have international routes. It performs well according to such indicators as passengers-km carried/inhabitant and tons-kilometers of freight/inhabitant. In addition, a survey by the World Economic Forum ranked Jamaica's airport service quality as best among Latin American countries. The government manages the airport sector through the Airports Authority of Jamaica. However, the two international airports have

recently been privatized. The reorganization of Civil Aviation Authority (CAA) and intention to further privatize the airport sector have been key reforms. Private investment is expected to expand and develop airport facilities, increasing tourism traffic. The government also launched an Airport Reform and Improvement Program aimed at improving the efficiency and quality of the air transport system by concentrating on civil works.

A2.6 **In sum, Jamaica's transport infrastructure is well-developed, especially if compared to similar countries.** Main weaknesses are in the road and railway systems. The former needs to remedy its seriously poor conditions at a time when public investments present an additional handicap. The latter is practically non-functioning. The Jamaican government has been taking action to modernize the transport sector and increase investments through a greater involvement of the private sector, a strategy dictated in part budget constraints. Overall, the priorities of the transportation sector include the recovery of investments, increasing services availability, and improving quality standards. These priorities become crucial in a country with a high commercial opening level and tourism as an important economic activity.

Energy

Figure A2.3: Electricity Production per Capita

Source: WDI

A2.7 **Jamaica has a high electricity production per capita, and the country heavily depends on oil imports for electricity generation.** Jamaica does not have cheap energy resources. It holds neither petroleum reserves nor important waterways for hydroelectricity generation. The electricity sector is mostly composed of conventional thermal generation and depends heavily on oil imports—like most of its neighbors.[228] The electricity sector is dominated by the state-owned JPSCo. At present, it owns about 80 percent of generation, transmission, and distribution assets.[229] The Rural Electrification Program (REP), a public company, is

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[228] A key institution in the sector is the 100 percent state-owned Petroleum Corporation of Jamaica (PCJ). PCJ imports crude and refined oil products and is in charge of refinery, storage, oil exploration and strategic studies for fuel sourcing. Although the petroleum import market in Jamaica has been liberalized, PCJ benefits from import protection through an exemption of a 12 percent import duty on petroleum products and its control of Jamaica's extensive storage facilities. Although power producers and large industries have a choice when it comes to fuel suppliers, PCJ tends to have a competitive advantage on price and logistics.

[229] In 2004, the generation segment was opened up for competition, and in addition to JPSCo's own plants, electricity is now also supplied to the grid by three independent power producers (IPPs). One is operated by the PCJ for its own electricity and steam needs, but it sells some power to JPSCo. The small size of the economy does not leave much scope to competition in transmission and distribution.

responsible for implementing the government's policies and priorities for rural electrification and providing electricity services to households and businesses not connected to the grid. When compared with other Latin American countries, Jamaica has the highest electricity production per capita (see figure A2.3).[230] This mainly results from bauxite and aluminum industry—a heavy energy consumer—and inefficient steam generating plants.

A2.8 **Although service coverage is adequate, quality could be a significant constraint to growth.** Service coverage is about 92 percent in urban areas. To improve rural access, government established the REP in 1975 as a legally separate body from the state-owned power utility and rural electrification has risen from a low of 75 percent to 90 percent. Although there is no data available to support a service quality analysis, the unreliability of power supply is a significant electricity-related constraint to growth. JPSCo is making extensive efforts to overcome this problem, which stems mainly from aging generating units and equipment. With regard to technical efficiency, , transmission and distribution losses have been high over the past 10 years, ranging from 17 percent to 20 percent, with a significant portion reportedly due to theft.

A2.9 **Electricity prices are much higher in Jamaica than in other Latin American countries, and it may hamper economic growth**. The Jamaican government has taken important steps to allow electricity tariffs to reflect all costs, eliminating all subsidies that existed in the past.[231] This policy has increased the price of electricity for residential consumers to United States cents/kWh 17.0 during 2001-2004. The trend for non-residential tariffs is quite similar, even if they were not as affected by the decision to remove subsidies. While there is scope for some efficiency gains, Jamaica's dependence on imported oil renders some of the higher costs inevitable. A high price for electricity in a developing economy may significantly hamper economic growth because electricity is a key cost driver both for companies and households. Moreover, high prices bring the risk of energy theft, which has reached an unacceptable level and which has negatively affected the financial performance of the sector's operators. The elimination of subsidized tariffs, along with other steps taken towards the modernization of the electricity sector, is expected to make the sector attractive for private investments and reduce prices in the longer term.[232]

Water and sanitation

A2.10 **Access to water services in Jamaica compares poorly with other countries.** The National Water Commission (NWC), a public entity, is the sole operator responsible for water management in Jamaica. It covers the entire country except for a marginal segment covered by "Parish Councils," another water management institution. Private initiative hardly exists in this

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[230] Starting from 1990, Jamaica's government has put in place a policy of developing renewable energy sources. After adding renewable capacity to the base load expansion, the installed capacity should be 1,184 MW by 2012. Peak demand has been projected at 802 MW in 2012, with a reserve margin of 33 percent.
[231] The retail tariff is based on the "price cap" formula. It can be subject to stress when some of the indexing parameters change rapidly as well as when significant changes in the fuel sourcing strategy are contemplated, as is presently the case for Jamaica.
[232] Measures included liberalizing the production regime, reinforcing the regulatory agency, placing targets for transmission and distribution losses, targeting an increase in coverage, and developing an important renewable energy program.
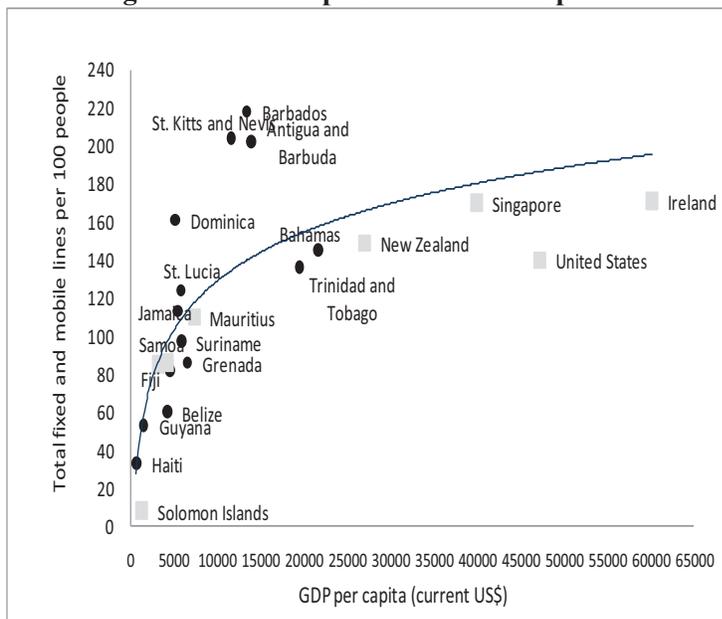
sector. In 2000, almost 20 percent of Jamaica's population did not have access to water services, a situation worse than the Latin American average of 15 percent. Large disparities existed concerning access to this service between urban (2 percent without connections) and rural areas (41 percent). To cope with this problem, the Rural Water Supply Program was launched in 2002.

A2.11 **By contrast, access to improved sanitation was quite uniform between urban and rural areas.** Less than 10 percent of population had no service at all, eclipsing Latin American standards.

Telecommunications

A2.12 **The Jamaican Government has embarked on a program to open up telecommunication services to competition.** Jamaica opened up telecommunication services to competition in the following areas—mobile and data services, Internet access providers, free trade zone service providers, international wholesale of switched voice minutes (e.g. prepaid calling cards), and the provision of retail customer equipment. The liberalization process proceeded in three stages. Phase I started in 1998. Phase II began in 2001 and it lasted until 2003. This phase concerned access to satellite services and facilities and the granting of licenses for domestic voice facilities and services. In 2002, 43 new licenses for telecommunication services were issued. Phase III started in 2003 and is expected to end in 2013, when the whole market is due to become fully deregulated and open to foreign investment and competition.

Figure A2.4: Telephones and Development

Source: World Bank (2005)

A2.13 **Jamaica performs relatively well as regards to telecommunication services.** Jamaica's monopoly organization did not provide incentives for extending fixed-wire services; consequently, fixed teledensity grew slowly and steadily until 2000, when it reached its peak of almost 20 percent. Afterward, the diffusion of mainline services declined due to the penetration of mobile telephone services, the latter spurred by the introduction of new technology and the diversity of options offered. The mobile/fixed ratio was 3.5 in 2002 and increasing, while fixed teledensity has been declining. Compared to other Latin American countries, Jamaica has a higher indicator in fixed teledensity but the gap is much larger in mobile teledensity (see figure A2.4). As for Internet access, Jamaica's use has expanded in recent years, making the country a regional leader in the diffusion of telecommunication services. Telecom sector liberalization did not substantially affect local calls' price, keeping the cost in line with best performers in Latin America, like Colombia. The typical cellular prepaid tariff (US$7 a

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month) appears to be lower than in the other Caribbean countries, including Trinidad and Tobago (US$8), Barbados (US$11), and Dominican Republic (US$9) and lower than the average for Latin American countries (US$10). The cost of international calls shows a similar pattern.

ANNEX 3: KEY STAKEHOLDERS IN THE PROCESSED FOOD VALUE CHAIN IN JAMAICA

Table A3.1: Key stakeholders in the processed food value chain in Jamaica

Role/ Mandate	Public Institutions	Private Organizations
Energy	Jamaica Public Service (JPS)	
Environmental Management	Ministry of Health, National Resource Conservation Authority (NRCA), National Environmental Planning Agency (NEPA), Ministry of Water and Housing	service providers, internal maintenance departments, processors
Financing	Development Bank of Jamaica (DBJ) EXIM Bank	Private and publicly listed financial institutions, investors
Infrastructure	• Factories Corporation of Jamaica, • National Water Commission	Internet service providers, local and foreign investors, clusters and communities, private developers
Market Promotion	Jamaica Trade and Invest	Organizers of private trade shows and events
Product Development	Scientific Research Council Bureau of Standards Jamaica Business Development Corporation (JBDC)	Private laboratories Processors (in-house labs)
Product promotion, Marketing and Distribution	Jamaica Trade and Invest	Overseas Agents Export Marketing companies Internet Service Providers
Raw Material Supply	• Ministry of Agriculture • Rural Agricultural Development Agency (RADA) • Food and Agricultural Organization (FAO) • Inter- American Institute for Cooperation in Agriculture	• Growers • Processors • Associations- JAS, JAPA, JEA, CABA, JOAM
Sanitary and phytosanitary controls	• *Ministry of Health* (in particular, the Health Promotion and Public Health Division) • National Public Health Laboratory and Pesticides Control Authority • *Ministry of Agriculture* (in particular, the Plant Quarantine/Produce Inspection Unit and Veterinary Services Division) • *Ministry of Industry, Commerce and Technology* (in particular, the Food Storage and Prevention of Infestation Division) • *Jamaica Bureau of Standards* (JBS).	• Internal quality control dept. • HACCP auditors • quality consultants • private laboratories • pre-shipment clearance facility
Training and Development	Human Employment and Resource Training Agency (HEART)/ National Training Agency (NTA), RADA, Ministry of Agriculture	Internal human resource and training departments of companies, private sector service providers
Transportation	Airlines, Airports Authority	Airlines, freight forwarders, shipping lines, shipping agents

Source: (Callender, 2010)

ANNEX 4: DESCRIPTION OF THE VALUE-CHAIN STAKEHOLDERS

The Ministry of Tourism is the lead agency for the development of tourism in Jamaica. It is responsible for overall development, policy and legislation, regulation, and strategic directions for tourism promotion and investment and development. Agencies under the Ministry's supervision include the Jamaica Tourist Board (JTB), which is responsible for marketing; the Tourism Product Development Company (TPDCO), which is responsible for product development; Jamaica Vacations Limited (JAMVAC), an international tour operator; and the Jamaica Reservations Limited, which operates the 1-800 Jamaica reservation number and several attractions. The table below identifies the key stakeholders in the tourism value chain in Jamaica by their general roles and mandates.

Table A4.1: Key stakeholders in the tourism value chain in Jamaica

Role/ Mandate	Public Institutions	Private Organizations
Accommodation	Jamaica Tourist Board (JTB), Tourism Product Development Company (TPDCO)	accommodation service providers (hotels, villas, guest houses), input suppliers
Culinary Experiences	Ministry of Health	restaurants, vendors, bars and cafes, input suppliers
Destination Marketing	Jamaica Tourist Board (JTB), Jamaica Vacations (JAMVAC), Jamaica Reservations Ltd. (operators of 1-800-JAMAICA), Jamaica Trade and Invest	international tour operators, local tour operators, accommodation service providers (hotels, villas, guest houses), cruise shipping lines, international trade and consumer shows, internet service providers
Events	Jamaica Tourist Board (JTB), police, local government	event managers, promoters, clusters and communities, chambers of commerce
Environmental Management	Ministry of Health, National Resource Conservation Authority (NRCA), National Environmental Planning Agency (NEPA), Ministry of Water and Housing	service providers, internal maintenance departments
Financing	Tourism Enhancement Fund (TEF), Development Bank of Jamaica (DBG), EXIM Bank	Private and publicly listed financial institutions, investors
Infrastructure	National Works Agency (NWA) (road networks), NRCA (Natural habitats, reserves, trails and sites), Jamaica National Heritage Trust (JNHT)(cultural/ heritage sites), Airports Authority of Jamaica, Port Authority of Jamaica, Urban Development Corporation- beaches and property (UDC)	Internet service providers, local and foreign investors, clusters and communities, designers and developers of purpose-built facilities (architects, restorers, construction professionals, environmental design professionals)
Product Development	Tourism Product Development Company (TPDCO),	Local tour operators, attractions operators, clusters and communities, accommodation service providers (hotels, villas, guest houses), input suppliers
Product Marketing and Distribution	Jamaica Vacations (JAMVAC), Jamaica Reservations Ltd. (operators of 1-800-JAMAICA)	travel agents, booking agents, local tour operators, international tour operators, hotel tour desks, attractions operators, clusters and communities, cruise shipping lines, internet service providers
Public Health and	Ministry of Health, Fire Department	Public liability insurance companies

Table A4.1: Key stakeholders in the tourism value chain in Jamaica

Role/ Mandate	Public Institutions	Private Organizations
Safety		
Standards and Certification	National Environmental Planning Agency (NEPA), TPDCO, HEART/ NTA	
Tours and Attractions	Jamaica Tourist Board (JTB), Tourism Product Development Company (TPDCO)	travel agents, tour operators, attractions operators, clusters and communities, hotel tour desks
Training and Development	Human Employment and Resource Training Agency (HEART)/ National Training Agency (NTA), Tourism Product Development Company (TPDCO),	Internal human resource and training departments of companies, private sector service providers
Transportation	Air Jamaica/ national carrier	Airlines, bus and taxi operators, car rental agencies, cruise shipping lines

Source: Lisa Callender, 2010

Table A5. 1: Tourism Taxes in Jamaica

Tax	Description
Arrival / Departure Tax	• Levied at the point of sale for scheduled flight • These taxes are not always included in the ticket price • Arrival tax is US$10 for air passengers and US$2 for cruise passengers • Departure tax is $1,000 Jamaican dollars (approx. US$11.23)
Hotel Tax	US$10 per night occupancy surcharge added by some hotels (Dec '07) Linked to the increase in oil and utilities costs
Embarkation Tax	No airport tax is levied on passengers upon embarkation at the airport
Non-resident Income Tax-	25 percent on income generated from Jamaica
Corporate tax	33.3 percent : ranking 36th highest out of 183 nations surveyed
Foreign Source Income	Income of resident company, central management and control situated in Jamaica, is subject to tax in Jamaica

The "Tourism Enhancement Act of 2004" was enacted to collect a fee of US$10 from incoming airline and US$2 from cruise passengers to implement recommendations from the Master Plan for Sustainable Tourism Development.

Key Fiscal Incentives

The various tax incentives are provided in the laws listed below:
- Export Industry Encouragement Act
- Industrial Incentives Act
- Motion Picture Industry Incentives Act
- Hotel Incentives Act
- Resort Cottages Incentives Act
- International Finance Companies (Income Tax Relief) Act
- Jamaica Export Free Zones Act.
- Foreign tax relief

Hotels (Incentives) Act

The Hotels (Incentives) Act provides income tax relief and import duty concessions for up to 10 years for approved hotel enterprises, and 15 years for convention-type hotels having an aggregate number of not less than 350 bedrooms and facilities for the holding of conferences. Approved hotel enterprises must have 10 or more bedrooms with facilities for meals and accommodation for transient guests, including tourists.

The Hotels Incentives Act

This provides that a 10 year relief from GCT, income tax and import duty is available to:
1. New hotels;
2. Existing hotels adding a minimum of 10 rooms or 30 percent of the existing number of rooms (whichever is greater);
3. Existing hotels that have done or intend to do substantial structural alteration; and
4. Approved convention hotels with 350 or more bedrooms are entitled to income tax and import duty relief ranging from 11 to 15 years.

Under the Hotels Incentives Act, any company that is recognized as owner, tenant and operator is entitled to benefits.

Resort Cottages (Incentives) Act

The Resort Cottages (Incentives) Act provides recognized resort cottages with income-tax relief for up to seven years and import duty concessions on imported building materials and furnishings. A recognized resort cottage must have at least two furnished bedrooms, a furnished living room, bathroom facilities, and facilities for the preparation and consumption of meals, and it must be used or be intended to be used for the accommodation of transient guests, including tourists for reward. Income-tax relief and the import duty concessions apply only to resort cottages having an aggregate number of not less than 10 bedrooms, situated in the same area and owned by the same person. The Act offers income tax relief and duty concessions for up to 15 years for convention-type hotels, that is, hotels with at least 350 bedrooms, and 10 years for regular hotels. For a hotel to benefit under this Act, it must contain not less than 10 bedrooms and facilities for meals and the accommodation of transient guests, including tourists. [233]

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[233] *Source:* Ministry of Justice, 2006

Table A6.1: Multivariate Estimation of Informality Probability (Marginal Effects Reported)

	2004	2005	2006	2007	2008
	informal	informal	informal	informal	informal
age	0.0168***	0.0207***	0.0179***	0.0195***	0.0229***
	-0.00283	-0.00268	-0.00281	-0.00296	-0.0026
agesq	-0.000171***	-0.000212***	-0.000177***	-0.000186***	-0.000210***
	-0.0000329	-0.0000307	-0.0000322	-0.0000346	-0.0000293
educ_prim	-0.0217	-0.0119	-0.0316	0.00344	0.021
	-0.0178	-0.0179	-0.0201	-0.0205	-0.0158
educ_sec	-0.0614***	-0.0754***	-0.0762***	-0.0874***	-0.0724***
	-0.00496	-0.00561	-0.00588	-0.00618	-0.00577
educ_tert	-0.407***	-0.392***	-0.399***	-0.361***	-0.379***
	-0.0211	-0.0187	-0.0178	-0.0164	-0.0182
female	0.0584***	0.0656***	0.0538***	0.0744***	0.0252*
	-0.0153	-0.0151	-0.0151	-0.0151	-0.0146
Urban	0.012	-0.0128	-0.00385	-0.0068	-0.0503***
	-0.0188	-0.0183	-0.0184	-0.0196	-0.0186
Rural	0.0704***	0.0657***	0.0646***	0.0614***	0.0224
	-0.0173	-0.0167	-0.017	-0.0167	-0.0162
Manuf/Ut/Const/Transp	-0.628***	-0.574***	-0.580***	-0.551***	-0.527***
	-0.0118	-0.0111	-0.0111	-0.011	-0.0105
Commercial Services	-0.593***	-0.542***	-0.540***	-0.524***	-0.502***
	-0.0178	-0.0174	-0.0174	-0.0164	-0.0161
Other Services	-0.608***	-0.560***	-0.557***	-0.540***	-0.528***
	-0.017	-0.0166	-0.0165	-0.016	-0.0157
Observations	7459	7827	7855	8010	9196

Table A6. 2: Probit (Marginal Effects) of Probability of the Household Receiving Remittances

VARIABLES	2006 rem_recip
head_female	0.0933***
	-0.0249
head_age	0.00196
	-0.00461
hd_agesq	-0.0000121
	-0.0000437
Other Urban	-0.0698**
	-0.0341
Rural	-0.0879***
	-0.0293
Observations	1906

Listing of Waiver and Discretionary Tax Incentives

Type of Tax Act	Number and/or Title of Law	Text of the Law
Income Tax Act	86. Power of Minister to remit tax, 9/1963. S.9(1)(b)	**The Minister may remit the whole or any part of the income tax payable by any person** if he is satisfied that it would be just and equitable to do so. Notice of such remission shall be published in the Gazette.
	54.- Representatives of non-resident persons chargeable 9/1963, S.9(1)(c)	(4) Where it appears to the Commissioner that the true amount of the profits or gains of any non-resident person chargeable with tax in the name of a resident person cannot be readily ascertained, the Commissioner may assess and charge the non-resident person on a percentage of the turnover of the business done by the non-resident person through or with the resident person in whose name he is chargeable as aforesaid, and in such case the provisions of this Act relating to the delivery of returns by persons acting on behalf of others shall extend so as to require returns to be given by the resident person of the business so done by the non-resident person through or with the resident person, in the same manner as returns are to be delivered by persons acting for incapacitated or non-resident persons of profits or gains to be charged.
	79. – Enforcing payment of taxes 37/1961 S.4.	Interest payable on any income tax pursuant to this section- may be remitted in whole or in part by the Commissioner for reasons which appear to him sufficient.
General Consumption Act	47. Minister may remit tax.	The Minister may, upon application in writing made to him by a person liable to pay tax under this Act, waive, remit or refund in whole or in part, any tax payable under this Act if in the circumstances of the case he considers it just so to do; and such waiver, remission or refund may be subject to such terms and conditions as the Minister thinks fit.
Transfer Tax Act	46.	If the Minister is satisfied that it would be just and Remission equitable to do so, he may remit any amount of tax charged or chargeable under this Act. Notice of such remission shall be published in the Gazette.
Stamp Duty Act	30D	(1) The Minister may, on an application made by the person who in accordance with the Schedule has paid or is liable for the payment of, additional stamp duty on inward customs warrants, waive, remit or refund in whole or in part such additional stamp duty and the waiver, remission or refund may be subject to such special conditions as the Minister may see fit to impose. (2) The Minister may, by order, subject to Affirmative resolution of the House of Representatives, amend any or all of the Appendices. (3) Without prejudice to the generality of subsection (l), where refund is due consequent on overpayment, such refund may be approved at any time within two years after the overpayment, by any public officer authorized in that behalf by the Minister.

Type of Tax Act	Number and/or Title of Law	Text of the Law
Customs Act	11.	It shall be competent for the Minister upon application by the importer or exporter to remit or refund in whole or in part any customs duty whenever he shall deem it expedient so to do and any such remission or refund may be subject to such special conditions as the Minister may see fit to impose.
	218. Governor General may restore seizure & c.	When any seizure shall have been made, or any fine or penalty incurred or inflicted, or any person committed to prison for any offence against the customs laws, the Governor-General may direct restoration of such seizure whether condemnation shall have taken place or not, or waive or compound proceedings, or mitigate or remit such fine or penalty, or release such person from confinement either before or after conviction on any terms and conditions, as he shall see fit.
	219. Commissioner may mitigate penalty 12/1985Sch	Subject to the approval of the Minister (which approval may be signified by general directions to the Commissioner) and notwithstanding anything contained in section 217, the Commissioner may mitigate or remit any penalty or restore anything seized under the customs laws at any time prior to the commencement of proceedings in any court against any person for an offence against the customs laws or for the condemnation of any seizure.

Listing of Incentives/Remission of Taxes Given by Statute or Law

Name of Incentive / Sector	Requirements for the Incentive	Benefits/Concessions under the Incentive
Export Industry Encouragement/ **Manufacturing**	**Full Exporter**- Designed to encourage export manufacturing to hard currency (non-CARICOM markets). All production must be exported i.e. 100% goods to be exported. **Partial Exporter**- Producers must export a threshold of 5% of their production to Non-CARICOM markets.	- Ten (10) years relief from Income Tax. - Exemption on import duties (Customs Duty & General Consumption Tax) for imported machinery and raw materials. *Note: For new exporters, the rebate is calculated based on a percentage of export sales to total sales, whilst for the already existing exporter, the rebate is calculated based on incremental export sales over a year.*
Industrial Incentive (Factory Construction)/ **Manufacturing**	The law is targeted at **companies that construct factories** and/or lease or sell to manufacturers under the EIEA.	- Relief from import duties (Customs Duty & General Consumption Tax) for items not located locally. - Income Tax Relief from factory leasing or gains made from sales of factory. - Exemption period of 10 years.
The Jamaica Export Free Zones/ **Manufacturing; Industrial Activities; Data Processing; Systems Development etc.**	Company can operate within the designated Free Zone area or outside as a single entity in the customs territory. However for companies outside of the Free Zone complex to benefit under the single entity free zone status, the company must: - Be **registered according to the provisions of the Companies Act** - **Export at least 85%** of its production. (15% may be sold in the local market)	- Exemption from Income Tax on profits in perpetuity. - Duty relief (Customs duty and GCT) on raw material (capital goods, raw materials, components or articles for manufacturing and specified articles for construction, alteration repair and general equipping of premises within the freezone) in perpetuity. *Note: Allows for the repatriation of earnings and minimized customs procedures for companies within the zones As it speaks to companies in the ICT sector with single entity free zone status can apply for licenses to provide their own telecommunications. This provision allows them to achieve significant cost savings using technology such as Very Small Aperture Terminals (VSAT).*
Accelerated Depreciation/ Special Capital Allowance/ **Manufacturing; Industrial Activities; Data Processing; Systems Development etc.**	Qualified businesses must be certified by the Ministry of Industry. For data processing/system development business, at least 20% of its gross income must be derived from exports.	- A certified business is allowed to deduct 50% of the full cost of any new machinery in the year of purchase and a further 50% in the following year.

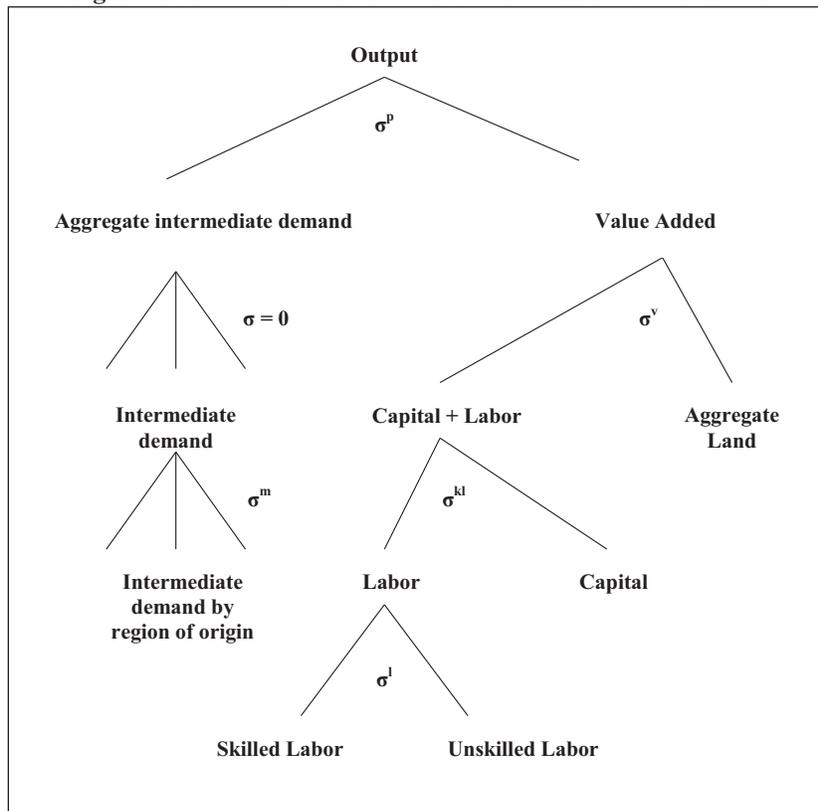| Name of Incentive / Sector	Requirements for the Incentive	Benefits/Concessions under the Incentive
Modernization of Industry/ **Manufacturing**	Provided to **investors who provide relevant support services or raw material to export manufacturer** (s); or be involved in export trade or plan to enter the export market.	- Relief of General Consumption Tax (GCT) on capital equipment.
The Bauxite and Alumina Industries / **Manufacturing and Mineral Sector**	Must be **engaged in the mining of Bauxite or the production of Alumina** in Jamaica.	Import duty concession on capital items, lubricating oils, grease and other chemicals.
The Petroleum Refining Industry / **Mineral Sector**	Registered **Oil Refiner of Petroleum Products.**	- Relief from import duties (Customs Duties and General Consumption Tax) on imported articles used in the construction, manufacture and operation of the refinery. - Income Tax Relief, including that on dividends paid to shareholders for a period of up to seven years. *Note: After this, the company can carry forward net losses incurred during that period for six (6) years.*
The Hotel Incentives/ **Tourism**	Provided to **approved hotel enterprises** as prescribed by the Ministry of Tourism. *Note: Approved Hotel Enterprises must have no less than 10 bedrooms and facilities for meals, for the accommodation of transient guest including tourists for reward.*	- Income Tax Relief of profits arising for 10 years. For convention type hotels having an aggregate number no less than 350 bedrooms –15 years. - Duty free (Relief from Customs Duty & General Consumption Tax) importation of building materials and furnishings.
The Resort Cottages / **Tourism**	The resort cottage must contain at least two (2) furnished bedrooms with kitchen, living room and bathroom facilities used for the accommodation of transient guests, including tourists for reward.	- Income Tax Relief for up to 7 years duty free. Duty free (Relief from Customs Duty & General Consumption Tax) importation of building materials and furnishings.
Attractions Incentive Programme (AIP) / **Tourism**	Approved Attractions as per licensing requirements of the Tourism Product Development Company (TPDCo)	- Duty free (Relief from Customs Duty & General Consumption Tax) importation of scheduled list of items for five (5) years. - Five year Income Tax Relief
International Finance Companies/ **Financial Sector**	International Finance Companies and Corporation recognized and approved by the FSC.	- Relief from Income Tax - Relief from all taxation and Customs Duty
Foreign Sales Corporation/ **Financial Sector**	FSC is defined as a foreign corporation which is allowed to earn tax exemption based on its exports from the US.	- Relief from Income Tax for five years. - Relief from HEART and other Statutory Contributions - Relief from import duties (Customs Duty and General Consumption tax) payable on equipment, machinery and materials
Shipping Incentives/ **Shipping**	Approved Shipping Corporations. Government should have majority share.	- Income Tax Relief for 10 years. Allowed to carry forward for 6 years. - Relief from Customs Duty
The Motion Picture	Recognized film producer (Criteria	- Income Tax Relief for 9 years, after the

Name of Incentive / Sector	Requirements for the Incentive	Benefits/Concessions under the Incentive
Industry / **Film; Entertainment**	met and qualified by Film Commission, Jamaica Promotions)	release of the motion picture.(i.e. Tax free profits from overseas release of film and video) - Investment allowance of 70% of the total expenditure on the production facilities. - Duty free and tax free concessions (Customs Duty & General Consumption Tax) of equipment, machinery and materials for the building of film studio and support facilities. - Relief from the payment of withholding tax on dividends paid to resident shareholders with investments in film companies (non-resident shareholders are taxable)
Approved Venture Capital/ **Financial**	Approved Fund as per the approval from the Minister of Finance	- Income Tax Relief of total amount of its distributions, whether in money or otherwise equivalent to 90% or more of the chargeable income before deductions.
Approve Agricultural Activity/ **Agriculture**	Approved Agricultural Activity as prescribed by the Minister of Finance	Relief of Income Tax on income derived from the prescribed activity

The CGE model used in chapter 6 has its origins in a standard neoclassical general equilibrium model and is based on the World Bank's prototype single-country model.[234] It is also a recursive dynamic extension of the CGE model in Bussolo and Medvedev (2008), which augmented the above prototype model by introducing an endogenous labor-leisure tradeoff. The main features of this model will be familiar to readers accustomed to CGE studies and are summarized only briefly. The labor-leisure choice is presented in more detail, with the discussion borrowing heavily from Bussolo and Medvedev (2008).

Production. Output results from nested Constant Elasticity of Substitution (CES) functions that, at the top level, combine intermediate and value-added aggregates. At the second level, the intermediate aggregates are obtained by combining all products in fixed proportions (Leontief structure), and total value added is obtained by aggregating the primary factors. The nested structure of production allows for different degrees of substitutability across inputs and is a standard feature in most CGE models. The full production structure is shown in Figure A9.1.

Figure A9.1: Production structure of the Jamaica CGE model

Note: Although the model allows substitution between Land and the other primary factors, given that the data for separating land and other factors contributions to value added was not available, the nesting structure actually active in the current model does not include Land as a separate factor.

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[234] See van der Mensbrugghe (2005b) for detailed model documentation and van der Mensbrugghe (2005a) for the user's guide.

Income distribution and absorption. Labor income and capital revenues are allocated to households according to a fixed coefficient distribution matrix derived from the original SAM. Private consumption demand and labor supply decisions are obtained through maximization of household specific utility function following the Linear Expenditure System (LES). The quantity of aggregate saving behavior is determined by a fixed marginal propensity to save, calibrated using the base year consumption, income, and saving. Household utility is a function of consumption of different goods and leisure. Once total value of private consumption is determined, government and investment demand are disaggregated into sectoral demands according to fixed coefficient functions.

International trade. The model assumes imperfect substitution among goods originating in different geographical areas.[235] Import demand results from a CES aggregation function of domestic and imported goods. Export supply is symmetrically modeled as a Constant Elasticity of Transformation (CET) function. Producers allocate their output to domestic or foreign markets according to relative prices. Under the small country assumption, Jamaica is unable to influence world prices and its imports and exports prices are treated as exogenous. Assumptions of imperfect substitution and imperfect transformability grant a certain degree of autonomy of domestic prices with respect to foreign prices and prevent the model from generating corner solutions. Furthermore, they permit cross-hauling—a feature normally observed in real economies. The balance of payments equilibrium is determined by the equality of foreign savings (which are exogenous) to the value of the current account. With fixed world prices and capital inflows, all adjustments are accommodated by changes in the real exchange rates: increased import demand, due, for instance, to trade liberalization, must be financed by increased exports, and these can expand due to improved resource allocation. Import price decreases drive resources towards export sectors and contribute to falling domestic resource costs (or real exchange rate depreciation).

Factor markets. Labor is divided into two categories: skilled and unskilled. These categories are considered imperfectly substitutable inputs in the production process. The labor market skill segmentation[236] has become a standard assumption in CGE modeling and it is easily justifiable for the case of Jamaica, where inequalities in educational endowments and access to education support this assumption. Skilled and unskilled labor types are then aggregated into a composite labor bundle which is then combined with composite capital (see production nest in Figure A.1). In the standard version, composite capital and labor types are fully mobile across sectors, with the rental rate on capital and relevant wages clearing the factor markets. Capital supply in each year is fixed. Labor supply, for both the skilled and unskilled categories, is derived, as shown below, from utility maximization where individuals chose the optimal consumption level for both commodities and leisure time under their budget constraint.

Labor-leisure tradeoff. The introduction of a consumption-leisure tradeoff in the household utility function follows the approaches of Barzel and McDonald (1973), de Melo and Tarr (1992), and Annabi (2003). Consider a Stone-Geary utility function and a budget constraint of the following form:

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[235] See Armington (1969) for details.
[236] See Taubman and Wachter (1986) for a general discussion of labor market segmentation.

$$u = \sum_{i=0}^{N} \mu_i \ln(C_i - \theta_i) \quad \text{s.t.} \quad \sum_{i=0}^{N} P_i C_i = Y = WT + y \qquad \text{A.1}$$

In this utility function, C_i denotes the consumption of good i with leisure (C_0) being a normal good, θ_i are usually interpreted as consumption minima,[237] and the share parameters μ_i (including μ_0) must sum to unity. T denotes the total time a household has available for work and leisure activities, and the amount of resources available for non-leisure consumption is limited by non-labor income (y) and total wage income (ignoring saving and taxes for simplicity).[238] Constrained maximization gives rise to the familiar linear expenditure system (LES) demand functions:

$$C_i = \theta_i + \frac{\mu_i}{P_i}(Y - \sum_{i=0}^{N} P_i \theta_i) \qquad \text{A.2}$$

The household labor supply is the difference between total time available and the time allocated to consumption of leisure, and substituting the budget constraint into the demand function yields:

$$LS = (1 - \mu_0)(T - \theta_0) - \frac{\mu_0}{W}(y - \sum_{i=1}^{N} P_i \theta_i) \qquad \text{A.3}$$

Partially differentiating the labor supply equation with respect to non-labor income and the wage rate yields the following elasticities:

$$\varepsilon_y = \frac{\partial LS}{\partial y}\frac{y}{LS} = -\frac{\mu_0}{W}\frac{y}{LS} < 0 \qquad \text{A.4}$$

$$\varepsilon_W = \frac{\partial LS}{\partial W}\frac{W}{LS} = \frac{\mu_0}{W * LS}(y - \sum_{i=1}^{N} P_i \theta_i) \qquad \text{A.5}$$

While the labor supply is decreasing in non-labor income, the sign of the wage elasticity depends on the ratio of non-labor income to the total "committed" consumption expenditures.[239]

Model closure. The equilibrium condition on the balance of payments is combined with other closure conditions to obtain a unique solution. First, both current and capital government expenditures are fixed in real terms as a share of GDP. This assumption can be modified in alternative scenarios, but is appropriate in the baseline because public goods do not enter the household utility function (and therefore changes in public expenditure affect household welfare only indirectly). Tax rates are also fixed at base year levels, and the primary balance is endogenous. The composition of public borrowing (i.e., the ratio of foreign borrowing to domestic borrowing) is fixed at the base year value, and this set combination of borrowing instruments clears the fiscal accounts. Second, aggregate investment—which together with an exogenous rate of depreciation determines the next period's capital stock—is set equal to aggregate savings. The volume of available savings is determined by an exogenous level of foreign saving including foreign direct investment (which evolves according to medium-term assumptions of the IMF), endogenous government saving, and households who save a fixed share of their post-tax income. The price of absorption is the numéraire.

Dynamics. The model is solved in a recursive dynamic mode, in which a sequence of end-of period equilibria is linked with a set of equations that update the main macro variables. There are three determinants of real GDP growth in the model: labor supply growth, capital accumulation,

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[237] Note that there is no theoretical requirement for any of the θ_i to be positive.
[238] Note that the price of leisure is the economy-wide wage rate W (i.e. $P_0 = W$).
[239] This sign ambiguity allows for a backward-bending labor supply curve.

and increases in productivity. The maximum stock of labor available in each period (which, form equation A.3, will be greater than or equal to labor supply *LS*) grows exogenously at the rate of growth of the working age population (ages 15-64), obtained from World Bank population forecasts. The capital stock in each period is the sum of depreciated capital from the period before and new investment, which, as mentioned before, is determined by the available savings in the previous period. The behavior of the third component—productivity—is factor- and sector-specific. Labor and capital productivity in agriculture grow exogenously at one percent per year, broadly consistent with the econometric literature on productivity growth in developing countries. For all other sectors, capital productivity remains fixed throughout the model horizon, while growth in labor productivity (which is assumed to be Harrod-neutral, purely labor-augmenting technical change) can be exogenous or endogenous depending on the type of simulation. The evolution of skill- and sector-specific labor productivity $\lambda^L_{l,i,t}$ is given by the following equation:

$$\lambda^L_{l,i,t} = (1 + \gamma^L_t + \chi^L_{l,i})\lambda^L_{l,i,t-1}$$

In the baseline scenario, also referred to as business-as-usual (BaU) scenario, γ^L_t is endogenous while real GDP growth is fixed. This allows the user to calibrate the model to any given GDP growth rate, which in this chapter follows the near- and medium-term projections of the IMF. In scenarios other than BaU, γ^L_t is fixed in each period at the BaU solution level, and GDP growth becomes endogenous. Thus, in the absence of any shocks, the BaU GDP growth rate is reproduced exactly. In policy simulations, real GDP growth may differ from BaU due to faster/slower accumulation of labor or capital, or shocks to the sector-specific productivity shift parameters for labor or capital ($\chi^L_{l,i}, \chi^K_{k,i}$). In other words, variations in GDP growth across scenarios can be directly attributed to the simulated policy reforms, allowing for clear comparisons between the simulations.

The micro-accounting model used in this chapter is a simple approach based on techniques described in Bussolo et. al. (2008) and Ravallion and Lokshin (2008). As described in much greater detail in Bourguignon et. al. (2008), the empirical tool is referred to as "micro-accounting" because no behavior is modeled at the micro (survey) level. Instead, the objective of the model is simply to translate the shocks observed in the macro model to the household survey in a consistent fashion, such that the resulting counter-factual distribution of income or consumption is consistent with the results at the macro level. Although this approach lacks theoretical and empirical sophistication of more complicated micro-simulation methodologies (e.g., Ferreira et al, 2008, or Robilliard et al, 2008), its advantages include simplicity, transparency, and less stringent consistency requirements (with respect to the data underpinning the macro model). Moreover, as described in the following paragraphs, more sophisticated modeling approaches could not be readily used due to data constraints.

The micro-accounting model creates a new, counter-factual distribution of welfare through shocks to link aggregate variables (LAVs). The LAVs are observed in both macro (CGE) and micro (survey) data, and therefore provide a bridge by means of which consistency between the two sides is assured. The LAVs used in this chapter are a fairly standard set and include variables meant to capture the change in the overall level of welfare in the population—such as overall population growth and changes in real consumption per capita—as well as variables meant to capture any potential redistribution of welfare within the population—such as changes in population structure, changes in prices of different types of consumption goods and changes in incomes based on the sector of employment and skill level of the household primary earner. The specific LAVs used in this chapter are listed in table A10.1.

Table A10.1: Link Aggregate Variables in the Micro-Accounting Model

Variables that affect aggregate welfare	Real consumption growth
	Overall population growth
Variables that affect the distribution of welfare	Population growth, unskilled rural household
	Population growth, unskilled urban household
	Population growth, skilled household
	Total income, unskilled rural household
	Total income, unskilled urban household
	Total income, skilled household
	Price of agricultural products consumed by unskilled rural household
	Price of petroleum products consumed by unskilled rural household
	Price of manufactured products consumed by unskilled rural household
	Price of services consumed by unskilled rural household
	Price of agricultural products consumed by unskilled urban household
	Price of petroleum products consumed by unskilled urban household
	Price of manufactured products consumed by unskilled urban household
	Price of services consumed by unskilled urban household
	Price of agricultural products consumed by skilled household
	Price of petroleum products consumed by skilled household
	Price of manufactured products consumed by skilled household
	Price of services consumed by skilled household

The LAVs above define the household welfare function in terms of initial level of household consumption and changes in household size, household income, and prices of goods and services consumed by the household. Thus, the economy-wide average household per capita (or adult equivalent) welfare at time *t* can be expressed as follows:

$$welfare_t = \frac{1}{\sum_{h,i}\left(hhsize_h * I_{h,i} \frac{pop_{i,t}}{pop_{i,0}}\right)} \sum_h \frac{\sum_i\left(cons_h * I_{h,i} \frac{y_{i,t}}{y_{i,0}}\right)}{\sum_{c,i}\left(\frac{cons_{h,c}}{cons_h} * I_{h,i} \frac{p_{c,i,t}}{p_{c,i,0}}\right)} \qquad \text{B.1}$$

where
$i \in [unskilled\ rural, unskilled\ urban, skilled]$, defined at the level of household primary earner

c
$\in [agricultural\ products, petroleum\ products, manufactured\ products, services\ ]$
$I_{h,i}$ is an identity operator equal to 1 when household *h* belongs to group *i* and 0 otherwise
$cons_h$ is the total value of goods and services consumed by household *h*
$cons_{h,c}$ is the total value of good *c* consumed by household *h*
$hhsize_h$ is the size of household *h* (either in terms of persons or adult equivalents)
pop_i is the size of population group composed of *i*-type households
y_i is the total post-tax income (labor, capital, and transfers) of an *i*-type household
$p_{c,i}$ is the price of good *c* consumed by an *i*-type household

Note that equation B.1 defines the income-generation process at the household, rather than individual level. This distinction underpins the choice of micro-simulation methodology in this chapter: rather than being defined as the sum of incomes of each working member (conditional on the characteristics of each worker), household income is defined as an inseparable total, conditional only on the characteristics of the primary earner. As mentioned in the first paragraph of this annex, this modeling choice was determined largely by data constraints: due to a large number of missing or zero labor income reported by employed individuals in the Labor Force Survey (LFS), more than half of all households (57 percent) in the Survey of Living Conditions (JSLC) did not have any labor income despite having multiple working members. As a result, it was not possible to specify a model of individual earnings and labor supply—such as the one developed by Bourguignon and Ferreira (2005)—for these households, and using only households for which this information was available would have substantially distorted the original survey design and, consequently, the poverty and inequality statistics. Therefore, the classification of households into unskilled rural, unskilled urban, and skilled groups was done according to the characteristics of the household primary earner, as reported in the JSLC.

The model operates on total household income, rather than labor income only. This distinction is important because many models of the type used in this chapter pass on only labor earnings from the macro model down to the micro. In this case, however, total income is used because of the critical importance of income sources other than labor to the simulation results. For example, the debt exchange leads to a large decrease in bond earnings for households that hold bonds. Consequently, ignoring this important channel would have introduced a substantial distributional bias towards richer (skilled) households that capture nearly all of the bond income (because less-wealthy unskilled households hold few bonds). Due to these considerations, the household income generation process—taking into account all income sources—was modeled at the macro level for three representative household groups—unskilled rural, unskilled urban, and skilled—and shocks to total income were transmitted to the household survey.

The impacts of changes in prices of consumer goods on household welfare are modeled as first-order effects without allowing households to re-optimize their consumption bundle. In other words, households in the survey continue to devote the same share of their consumption budget to each consumption category c in time t as they did in time 0, meaning that only price (and not quantity) effects are taken into account. However, because the macro model does include three representative households (depending on the source of income of the primary earner) and the macro model allows for a re-optimization of the consumption bundle, price changes faced by the households in the survey do vary across the representative groups (but not within them). This approximation is consistent with other approaches taken in the majority of studies in the macro-micro simulation literature (e.g., Bourguignon et al, 2008), and avoids the difficulties of specifying and calibrating a household-specific demand system while still capturing a substantial share of the impact of price changes on household welfare.

The simulation approach developed above is implemented sequentially, with no feedbacks to the macro model. Consistent with other micro-accounting applications, the results of the micro exercise do not have any feedbacks to the macro model. Incorporating this type of feedback effects requires a much more complicated modeling structure and a near full-reconciliation of macro and micro data through cross-entropy or other numerical techniques (see Robilliard et al, 2008, for an application and a discussion of advantages and limitations of such approaches). Furthermore, the simulation is implemented as a sequence of individual steps as described in table A10.2.

Table A10.2: Sequential nature of the micro model

Step	Action
1	Households are re-weighted to match the new population structure given by the macro model
2	Overall population growth is constrained to match that of the macro model
3	The welfare of each household is scaled up or down depending on changes in the total income of its corresponding representative household group (e.g., unskilled urban) in the macro model
4	The welfare of each household from step 3 above is scaled up or down depending on changes in the consumption prices faced by its corresponding representative household group (e.g., unskilled urban) in the macro model and the share of each good in each household's consumption bundle.
5	Overall change in real consumption per capita is constrained to match that of the macro model