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This paper is based on the final report of a consultancy supported by the Inter-American Development Bank and carried out by a team of researchers of the Group of Analysis for Development (GRADE). The team was comprised of Miguel Robles, Manuel Hernandez, Jorge De La Roca, and Maureen Webber, and was led by Maximo Torero. The study was led at IADB by Desmond Thomas (RE3/OD6). Quindi Franco coordinated the preparation of the current paper, which benefited immensely from editing by Alistair Wearmouth.

Foreword

The informal economy plays an important, yet often overlooked, role in economies throughout the world. Informal activities can provide a much needed source of income for a great number of people. At the same time, informality motivated by regulatory distortions, tax evasion, or in the pursuit of illegal activities can be a development trap that deprives governments of needed funds and leaves participants without legal protection.

This paper is one output of a broader effort aimed at better understanding the informal sector in Jamaica. This broader analytic effort was motivated by a multitude of factors including (1) a desire to understand exactly how large the informal sector is, and (2) to understand the implications of informality for such issues as potential economic growth and development, government revenue, business service support needs, social service considerations, and illegality and crime.

Using various techniques, this paper first estimates the size of the informal sector in Jamaica, finding that the informal economy represented a large and growing share of the overall economy, measuring in the vicinity of 40 percent of total economic activity as currently measured. This growing sector represents a diverse group of enterprises and workers, ranging from local peddlers to sophisticated small entrepreneurs. The second component of the paper explores these and other characteristics of the informal sector which should be taken into account when prescribing new policies or programs.

This document is based on the final report of a consultancy financed by the Inter-American Development Bank and carried out by a team of researchers of the Group of Analysis for Development (GRADE), assisted by Development Options, a Jamaican consulting team. The team was led by Maximo Torero and comprised of Miguel Robles, Manuel Hernandez, Jorge De La Roca, and Maureen Webber. The study was led at IADB by Desmond Thomas (RE3/OD6).

That report benefited from the collaboration and comments of the Office of the Prime Minister, the Planning Institute of Jamaica (PIOJ), the Statistical Institute of Jamaica (STATIN), the Ministry of Labour and Social Security, the IDB Local Office, the regulatory agencies and numerous others.

The final version of this paper was prepared under the guidance of Fidel Jaramillo, Regional Economic Adviser for RE3, and the coordination of Quindi Franco, consultant (RE3). Helpful comments were received from Dougal Martin (RE3/OD6), Desmond Thomas (RE3/OD6), and Francesca Castellani (RE3/RE3). Alistair Wearmouth provided excellent editorial assistance. A special thanks to Jesus Bengoechea (RE3) who was in charge of the final preparation of this publication.

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RESEARCH SUMMARY

A. Purpose

Despite Jamaica's lackluster economic growth during the 1990s, the decade saw a considerable reduction in poverty (from its peak of 44% in 1991 to 17% in 2001). While many factors undoubtedly contributed, one as yet unexplored possibility is that the robust performance of the country's informal sector lifted Jamaicans out of poverty without appearing in official economic statistics. This paper is one output of a broader study of informality in Jamaica undertaken to better understand the implications of the informal sector for a variety of purposes. It first estimates the *size* of the informal sector and, second, examines the *characteristics* of the sector in order to understand the role informality plays in the economy and to analyze its influence in the country's declining poverty of the 1990s.

B. Overall Findings

The informal sector is a large and growing portion of the Jamaican economy. In 2001, informal activities represented around 43% of official GDP and by some measures had more than doubled over the previous decade. This rapid growth contributed significantly to the decline in poverty during the decade. Activities and participants in the informal sector are diverse and differ in many important respects from their formal sector counterparts. These differences should be kept in mind in policy design.

C. Highlights

1. Size of the Informal Sector

Monetary and method of additions approaches produce similar estimates of the size of the informal sector of around 43% of official GDP in 2001. Estimates based on electricity consumption put the informal sector at a much larger 40% of *total* GDP in 2000 (total GDP includes all unreported plus officially reported economic activities). Both the electricity consumption and monetary data indicate that the informal sector grew significantly faster than the formal economy during the 1990s.

Size of Jamaica's informal sector, 2000-01

	Share of official GDP		Share of total GDP
	2000	2001	2000
Monetary Approach	39.1%	43.7%	28.1%
Electricity Consumption Method			40.9-45.5%
Method of Additions		39.9-43.5%	

2. Characteristics of the Informal Sector

Although the approach has its limitations, this paper examines micro and small enterprises (MSEs) to understand the characteristics of the informal sector. MSEs are a segment that is heavily engaged in informal activities and they differ in important ways from their larger, more formal counterparts. Likewise, work in the informal economy differs from work in the formal economy. Salient differences include:

- Enterprises in the informal sector are concentrated in low-productivity, labor-intensive activities. Nearly 60% of Jamaicans in the informal sector work in the wholesale/retail trade or agriculture. Manufacturing is a distant third most important activity, involving only 9%.

- Most workers, 70%, do not have formal contracts.

- Work is usually part-time rather than full-time.

- Women make up a relatively large portion of the informal sector, 57% compared with 50% in the formal sector of the economy.

- Jamaican informal sector entrepreneurs are, on average, older and better educated than workers in the formal sector. One third of small-firm entrepreneurs have university educations, contradicting a common perception of low levels of human capital among MSEs.

- The most frequent motivation for becoming an entrepreneur is a desire for independence (cited by 38% of entrepreneurs), followed by the desire for higher earnings.

- MSEs use few modern management techniques, indicating there is much room for improvement. Only 23% of the firms use account books and only 21% have a business plan.

- Some 25% of Jamaica's MSE entrepreneurs spend time improving or developing new products or services.

- Surprisingly, most Jamaican MSEs own property—65% of owners have a property title, 61% of whom say that the title is registered. However, the average MSE meets only 35% of all the legal requirements.

- Jamaican MSEs make limited use of Business Development Services (BDS) outside of accounting/tax services. Larger firms, more educated owners and those with access to business associations make more use of BDS.

- Finally, the degree of formality or compliance with legal regulations positively correlates to firm performance. Formality may open the door to a greater number of clients, in particular government institutions.

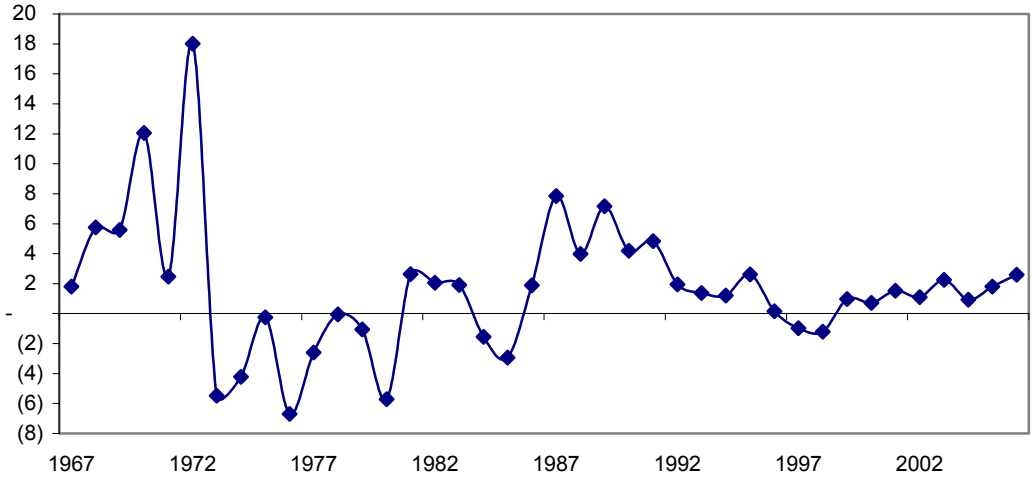
D. Methodology

This study estimates the size of the informal sector in Jamaica using four approaches: (1) the monetary approach, (2) electricity consumption method, (3) consumption function expenditure approach, and (4) the method of additions. Data used to develop these estimates was collected from a variety of public statistical sources including the Census, the Labour Force Survey (LFS) and the Survey of Living Conditions (SLC). To understand the characteristics of the informal sector, the Statistical Institute of Jamaica (STATIN) carried out a further household and a firm-level survey to collect information on individual informal activities and the characteristics of entrepreneurs and MSEs.

I. INTRODUCTION AND OVERVIEW

Following strong economic performance throughout the 1950s and 1960s, Jamaica's economy contracted during the 1970s (see figure below). Growth strengthened somewhat from the late 1970s through 1991, but averaged a discouraging 1% annually between 1992 and 2004. This lackluster economic performance was also paralleled by slow progress among social indicators. In the early 1980s, Jamaica led Caribbean and many other low-middle-income countries in terms of primary education and access to health facilities. However, by the late 1990s, the performance of Jamaica's social indicators fell behind those of its neighbors. While Jamaica's Human Development Index[1] increased from 0.72 in 1992 to 0.74 in 1998, its ranking relative to other countries declined from 69th place in 1990 to 82nd place in 1998. Caribbean countries such as St. Kitts and Nevis, Belize and St. Vincent and the Grenadines overtook Jamaica during the 1990s.

Figure I-1: Jamaica's annual GDP growth, 1967-2006

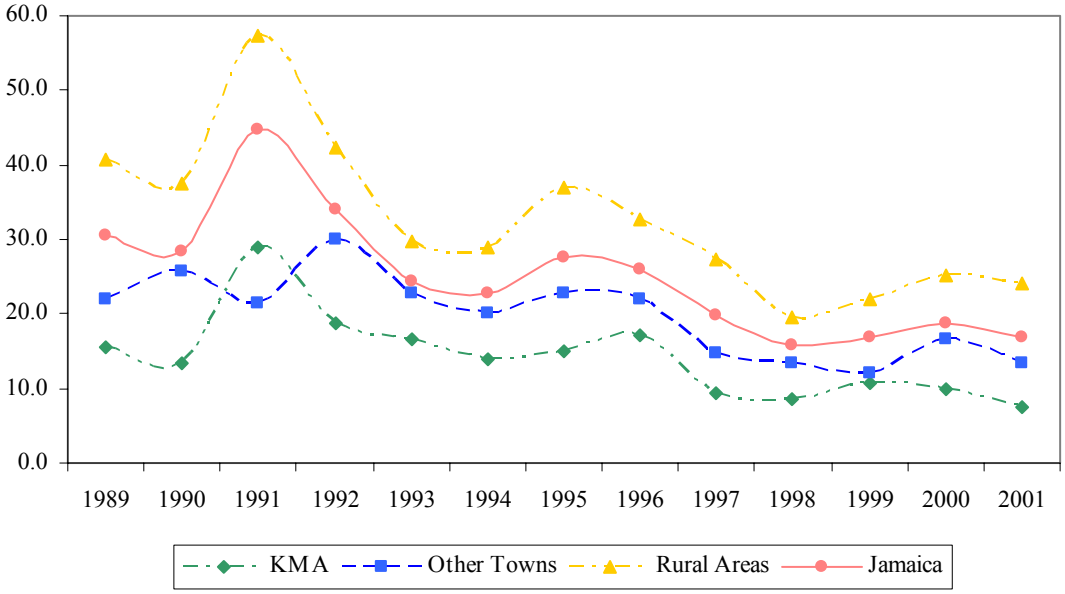


Source: World Bank (2006) and EIU (2006).

Within the context of poor economic performance, however, official statistics show that poverty fell by some 62% from 1991 (the peak incidence of poverty) to 2001 (see figure below). Furthermore, inequality declined steadily throughout the period as measured by the Gini coefficient. (See Danielson 1998, PIOJ 2000, and Jamaica Survey of Living Conditions 2001).

[1] The HDI is a composite index that considers three variables: life expectancy at birth, educational achievement (adult literacy rate and gross rates of primary, secondary and tertiary enrolment) and real per capita GDP in U.S. dollars.

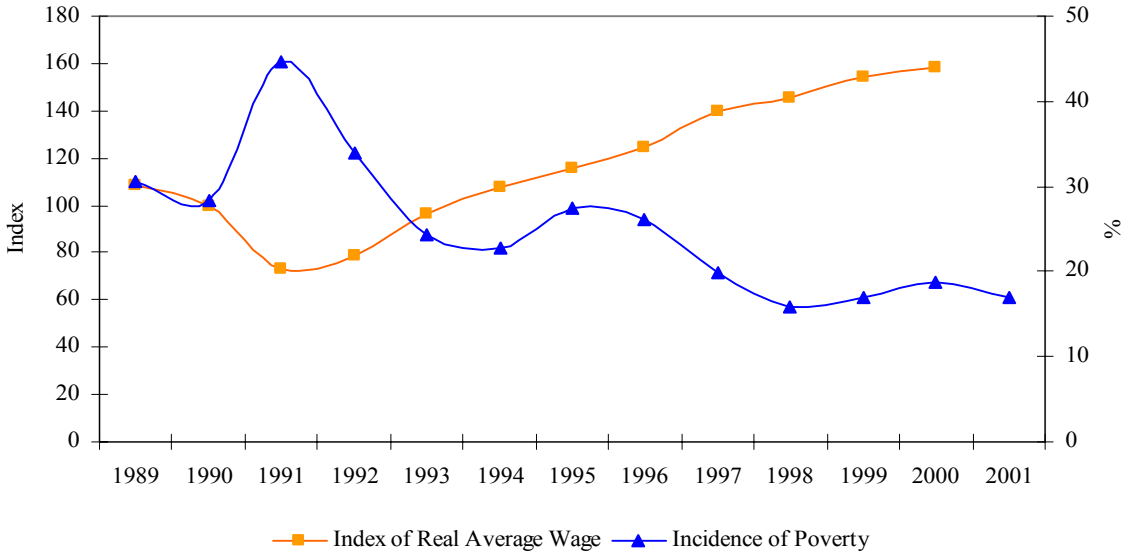
Figure I-2: Incidence of poverty by region (per adult equivalent), 1989-2001



Source: Planning Institute of Jamaica, Poverty Estimates (PIOJ), 1989-1999; Jamaica Survey of Living Conditions 2001 (2002).

There are various explanations for how Jamaica managed to reduce poverty and inequality within the confines of a stagnant economy. A major driver was undoubtedly the recovery of real wages (see figure below). Beyond that, there was a fall in the relative price of food due to real exchange rate appreciation and trade liberalization, a large fall in inflation, and remittances grew significantly throughout the 1990s. Though government social programs likely played a role as well, these were relatively small..

Figure I-3: Incidence of poverty vs. index of real wages, 1989-2001



One as yet unexplored explanation for the decline in poverty during the 1990s is that a large and growing *informal sector* created opportunities without appearing in official statistics. The importance of the informal sector in many economies has long been recognized. Studies in Jamaica in the 1990s estimate that informal workers account for 24% to 39% of the non-agricultural workforce (McFarlane, 1997, and Tokman and Klein, 1993). This paper is one output of a broader study of informality in Jamaica. This broader analytic effort was motivated by a multitude of factors including (1) a desire to understand exactly how large the informal sector is, and (2) to understand the implications of informality for such issues as potential economic growth and development, government revenue, business service support needs, social service considerations, and illegality and crime. Within this context, this paper focuses on better understanding the role of the informal sector in poverty reduction in Jamaica. The paper is made up of two main components. The first develops more comprehensive estimates of the *size* and economic impact of the informal sector. The second describes the *characteristics* of the informal sector.

This paper is organized into five sections. Following this introduction, Section II summarizes theory and perspectives on the informal economy and reviews relevant studies of informality in Jamaica. Section III summarizes approaches to estimating the *size* of the informal economy and then evaluates the results. Providing a more nuanced and in-depth understanding of the *characteristics* of the informal sector, Section IV presents the results of an enterprise survey of informality. A final section summarizes findings and conclusions.

II. BACKGROUND AND THEORY

A. Defining the Informal Economy

There is no agreement on how to define the informal economy, or even what to call it. "Underground," "shadow," "black," "unofficial," "unrecorded," "hidden," "parallel," "clandestine" and "second" economy are all used by researchers to describe roughly the same phenomenon. To a large extent, these differences in terminology and definitions reflect differences in research objectives. (See Schneider and Enste, 2000, for a more thorough treatment of definitional issues.) Gërxhani (1999), in an attempt to classify various definitions of the informal economy, noticed that "it appears that no single definition of the underground economy could serve all these diverse domains (e.g., labor economics, sociology, finance, macroeconomics, statistics, criminology, etc.). Therefore, researchers gave up trying to formulate a unique definition, but instead, based on several criteria, they have attempted to define the informal sector in accordance with the problem at hand." He identifies three broad criteria, or perspectives, used by authors to define the informal sector: political, economic and social. From the economic perspective, the most relevant for the current study, several sub-definitions are identified:

- *Labor market*. The informal sector is the total sum of all income-earning activities that do not involve contractual or legally regulated employment.
- *Tax evasion*. The informal sector comprises all income that is unreported in order to evade taxes.

- *Size of activity*. Under this criterion it is thought that the main feature of informal sector activities is the small scale of their operations.
- *Professional status*. Informal workers are defined as "the sum of the self-employed, unremunerated family workers and domestic servants."
- *Regulation or registration of the activity*. Here, the informal sector refers to the activities of establishments that are unregistered and unlicensed. At present, this is perhaps the most widely accepted approach to informality, following the work of De Soto (1989).
- *National statistics*. This definition describes the informal economy as all activity which escapes official economic statistics, such as Gross Domestic Product (GDP), through accounting conventions, non-reporting or underreporting.

It is also useful to look at the activities in question to better understand what analysts mean by informality. In their taxonomy, Mirus and Smith (1997) distinguish informality by whether activities are legal or illegal, and by whether they involve monetary or non-monetary barter transactions (see table II-1). Two issues emerge from looking at informality as an activity. First, there is nothing intrinsic in goods and services that makes them informal. What can be called formal or informal are the different activities behind production and commerce. In other words, a car is not informal or formal. The distinction applies to the way inputs are bought, how labor is hired to build the car and the way the car is sold. Thus, informal activities can range from input markets, the labor market, the financial system or the sale of final goods and services. Second, from an entity's perspective (an individual's or a firm's), informality is not dichotomous but rather a continuum. Most people or firms comply with some regulations while ignoring others. In this sense, there is a continuum of firms that varies from those that play by all the rules (observe all regulations and pay all taxes) to those that are completely detached from the legal framework.[2]

[2] Robles et al. (2002) show evidence of this in the small and micro enterprises sector in Peru.

Table II-1: A taxonomy of underground economic activities

	Monetary Transactions		Non-monetary Transactions	
Illegal Activities	Trade in stolen goods; drug dealing and manufacturing; prostitution; gambling; smuggling and fraud.		Barter: drugs, stolen goods, smuggling, etc. Produce or growing drugs for own use. Theft for own use.	
	Tax Evasion	Tax Avoidance	Tax Evasion	Tax Avoidance
Legal Activities	Unreported income from self-employment; wages, salaries and assets from unreported work related to legal services and goods	Employee discounts, fringe benefits	Barter of legal services and goods	All do-it-yourself work and neighbor help

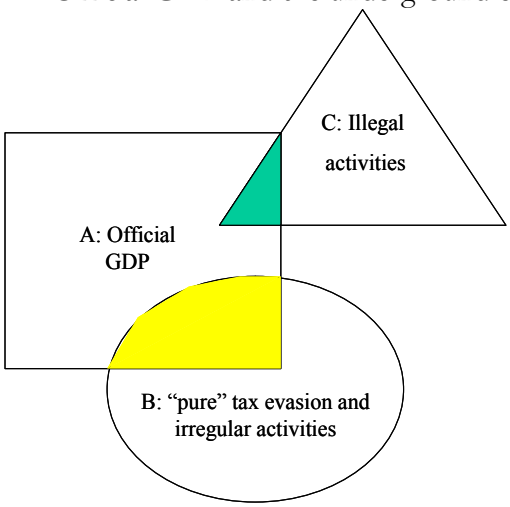
Source: Rolf Mirus and Roger S. Smith (1997, p.5), with additional remarks. Table presented in Schneider and Enste (2000).

These definitional issues have practical implications for quantifying the informal sector. What exactly are we to estimate? Some options include measuring the value of informal transactions in the labor market, the number of persons hired without any contractual and social protection, the amount of credit outside the regulated financial system, the asset value of the businesses without legal status, or the value of transactions that evade value-added tax.

Despite the lack of consensus in academic literature, in this study we classify the informal economy into three categories (Dreyden and College, 1996): (1) "pure" tax evasion, (2) the irregular economy, and (3) illegal activities. Pure tax evasion occurs when individuals fail to fully report earnings from otherwise legal business activities that are properly registered and recorded in the national statistics. The irregular economy generally covers the production of legal goods and services in unregistered and, hence, largely untaxed and unrecorded small businesses. Activities in the irregular economy are an important form of underground activity. Finally, there is a group of illegal activities which run afoul of regulatory and tax laws, as well as criminal law.

Because of the way official GDP estimates are calculated in Jamaica, they include some pure tax evasion and irregular economic activities, as well as some illegal activities (see figure below). As the objective of this study is to measure the size of the underground economy (B + C), we must be careful when estimating the total size of the economy given that official GDP already accounts for a proportion of the informal sector.

Figure II-1: Official GDP and the underground economy



B. The Growth of the Informal Sector

The existence of informal activities is a fact of life around the world. As Schneider and Enste (2000) point out, there are also strong indications that the size of the informal economy is increasing. Castells and Portes (1989) present several hypotheses to explain this growth. They suggest the expansion of the informal economy is:

- Part of the process of economic restructuring following the structural crisis of the 1970s—specifically, the reaction of firms and individual workers to the power of organized labor;
- A reaction against the state's regulation of the economy, both in terms of taxes and social legislation;
- The result of increasing international competition, particularly in labor-intensive industries;
- The process of industrialization in many developing countries, characterized by social and economic conditions that limit standards previously established by the state. This is the case of the *maquiladoras* in Mexico, where U.S. firms are able to circumvent contracts obtained by Mexican unions that apply to domestic firms; and
- The result of poverty in which millions of people subject to harsh living conditions are forced to accept any solution to their misery.

In a more recent survey, Schneider and Enste (2000) argue that the most important and often cited reasons for the growth of the informal economy are "the rise of the burden of taxes and social security contributions; increased regulation in the official economy, especially of labor markets; forced reduction of weekly working time; earlier retirement; unemployment; and the decline of civic virtue and loyalty towards public institutions combined with decreasing tax ethic."

At the microeconomic level it is important to understand the rationale behind engaging in informal activities or transactions. Using a cost-benefit approach, Loayza (1996) points out that, "Economic units choose to be partially or completely informal by weighing the costs and benefits that a legal status entails and considering their particular institutional and resource constraints. In this sense, the

choice to be informal is a rational one, a fact which does not imply that some firms are not forced by their constraints to be either formal or informal." The price of formality includes costs to access the formal sector (time and monetary costs for obtaining licenses and registrations) and costs to remain in it (taxes, regulations and bureaucratic requirements). For example, De Soto's research in Peru showed that the ten-month waiting period to settle a small garment business cost US$1,037, much more than the US$195 in direct costs for licenses and permits. As a result, the total cost of legal registration was equivalent to 32 times the minimum monthly salary. In looking at the costs of staying in the formal sector, Loayza (1986) points out that costs "related to workers' welfare [minimum wages, fringe benefits, social security, etc.] are the most restrictive and costly in underdeveloped countries (and in many developed countries as well)." One result is that formal firms in developing countries tend to be abnormally capital intensive.

When considering the costs of informality, Loayza points out two kinds of costs: penalties when informal activities are detected and the inability to take full advantage of government-provided goods. In the case of the latter, the roles played by the legal system and law enforcement are very important. In Peru, informal sector entrepreneurs report that their main constraints include an inability to expand their customer base to include those engaged in more formal activities and the disincentive to grow (which means becoming more visible).

C. Review of Previous Studies of the Informal Sector in Jamaica

Several studies have examined various aspects of the informal economy in Jamaica. For example, Witter and Kirton (1990) define informal activities as those that violate any aspect of the socio-legal framework of the economy. They use three methods to estimate the size of the informal economy in Jamaica. The first one is Gutmann's method (1977), where excessive growth in the use of cash in the economy is an index of the growth of the informal economy. The estimates showed informal activities were generally increasing both in current Jamaican dollars and as a share of formal GDP over the 22-year period under review. The latter increased from 8% in 1962 to 24% in 1984. The study also experimented with a modified version of Gutmann's approach, where the income velocity of money in the informal sector is 10% higher than in the formal sector. This yielded estimates that were more than double those from Gutmann's approach.

Using a monetary approach, Witter and Kirton estimate that between 1977 and 1984, J$20-denominated bills increased from 45% to 77% as a share of the total currency stock, and from 49% to 88% as a percentage of per capita currency holdings. In this regard, these figures indicate significant growth of informal activities in Jamaica. Yet, this rapid increase in the use of large bills could also be explained by other factors, such as high inflation rates.

Lastly, Witter and Kirton turned to the labor market and examined changes in workforce participation in the official economy as an indicator of increased activity in the "shadow" economy. While not providing an estimate of the size of the informal sector, they found that men turned to informal activities and that women increased their participation in both the formal and informal economies between 1968 and 1985. They further estimate that in 1985 almost 20% of the population aged 14 and over were potential participants in the informal economy. In fact, this study

understates potential informal activity because it excludes workers in the formal economy who were also working part-time in the informal sector.[3]

A study by Tokman and Klein (1993), "Informal Sector and Regulations in Ecuador and Jamaica," assumes that the informal sector operates in a grey area between "underground" and legality. The study analyzes these countries' legal and regulatory systems, the degree to which small firms comply with these laws, the factors determining compliance and the impact of compliance on a firm's performance. It also examines the characteristics of the micro enterprises surveyed and of the entrepreneurs involved in these businesses. They found that regulations are not perceived as important constraints in the establishment or operations of such micro enterprises, though smaller firms are more likely to be unregistered. No statistical evidence was found that registration affects capacity for growth. Even though there is not a macroeconomic picture of the relative importance of the informal sector in Jamaica, it is stated that informal activities employ around 35% of the country's non-agricultural workforce.

Finally, "The 1996 Micro and Small Enterprise Survey of Jamaica" provides a comprehensive analysis of more than 2,000 non-agricultural micro and small enterprises (each employing less than ten paid workers). The results show that the micro and small business sector in Jamaica grew at an annual rate of 0.8% between 1990 and 1996. By 1996, there were more than 93,000 non-agricultural micro enterprises, most of them engaged in the wholesale and retail trade. The annual value of their sales was estimated at J$48.6 billion, or 13% of the gross output of the corresponding sectors in that year. In terms of employment, it was estimated that these firms employed around 174,000 workers, more than 18% of the workforce.

The survey also revealed the following: by 1996, three-quarters of MSEs were being operated by own-account and unpaid workers; a significant number of enterprises did not fulfill all the formal regulatory requirements; a great number of micro entrepreneurs decided to run their own business because they wanted to be independent; and the participation of women as working proprietors was almost equal to that of men.

To summarize, there is a wide range of perspectives and definitions of "informality" in the published economic literature. In this study, we focus on a national statistics/measurement definition as we are interested in understanding how growth of the informal economy may have played a role in the reduction of poverty in the 1990s. In particular, we focus on two aspects of the informal sector: pure tax evasion of formal firms and the legal activities of unregistered businesses. Prior research on Jamaica's informal sector is sparse, and in particular does not provide estimates for the growth of the informal sector during the 1990s. The following sections address these research gaps.

[3] IADB (1987) also estimated that almost 33% of the urban workforce (around 16% of the national workforce) was in the informal economy. Its definition of the informal sector includes the self-employed (except for professionals), non-remunerated household workers and domestic workers.

III. THE SIZE OF JAMAICA'S INFORMAL ECONOMY

There are three generally accepted methods for estimating the size of the informal economy : (1) direct approaches that employ household surveys or audit tax returns to extrapolate data relating to informal sector activities; (2) indirect, or discrepancy, methods that use available economic data to estimate changes in the size of the shadow economy over time; and (3) modeling approaches, which examine the causes and effects of informal activities to estimate the size of the informal sector.

In this section, we estimate the size of Jamaica's informal economy for different time periods using four indirect methods. We utilize indirect methods because they permit analysis of changes in the size of the informal economy relative to the formal, or official, economy over time and because they are less data intensive than modeling approaches. Multiple indirect methods are used because each has its own benefits and drawbacks, and comparing the results of multiple approaches provides a better picture of the true size of the informal economy. Two of our approaches can be thought of as macroeconomic approaches: the monetary, or currency demand approach, and the electricity consumption method. These are based on observed economy-wide variables, money supply and energy usage respectively. On the other hand, our other two approaches — the consumption function expenditure approach, and the method of additions — are microeconomic in nature, based on extrapolations of individual or household behavior. A brief description of each approach is followed by our empirical findings related to each. More specific details of each approach along with sensitivity analyses are found in the Technical Appendix.

A. Currency Demand Approach

Overview

The currency demand approach is perhaps the most commonly used method for estimating the size of the informal economy because of its elegance and the ease with which it can be implemented using available monetary data. This macroeconomic method looks for discrepancies between the observed demand for currency and econometrically estimated demand in the official economy. Developed by Gutmann (1977), Tanzi (1979) and Feige (1980), this method is based on the idea that the informal economy is a cash economy. Therefore, growth in the ratio of cash to demand deposits are indicative of growth in cash transactions and, hence, growth of the informal economy.

Estimation

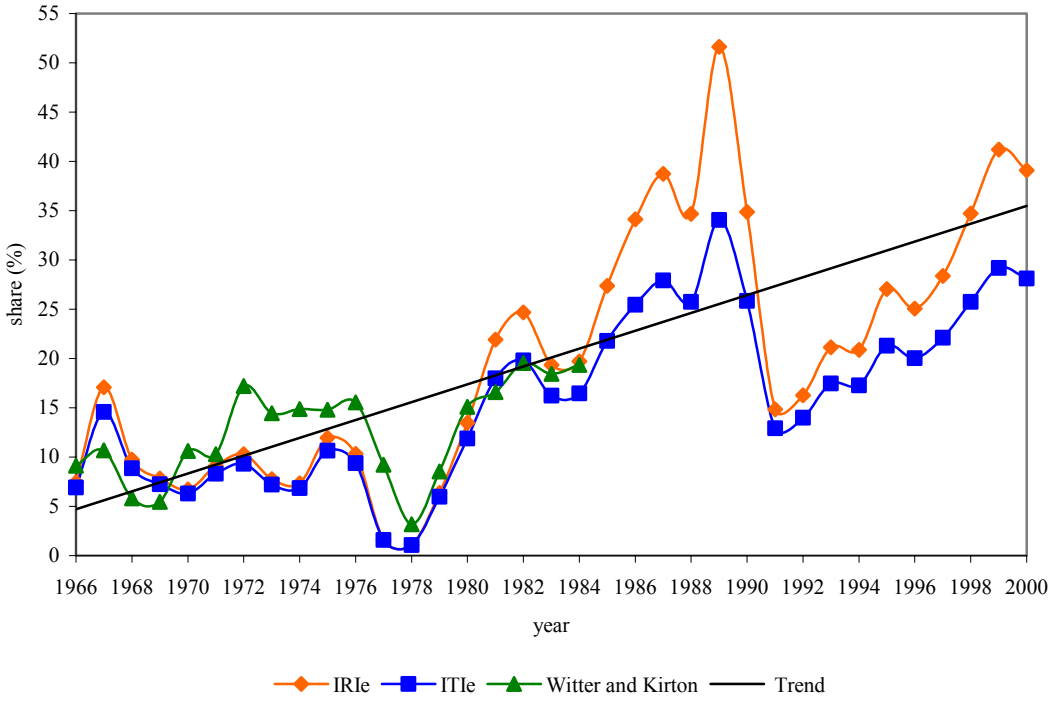
Our estimates of the size of the informal economy in Jamaica using the indirect monetary model cover the period 1966-2000. We obtained data for currency, demand deposits and interest rate of deposits from the *International Financial Statistics* of the International Monetary Fund and from the *Statistical Digest* of the Bank of Jamaica (BOJ). From the *World Development Indicators* of the World Bank, we obtained data on inflation rates, per capita GDP and net indirect taxes over GDP.

We find that the informal sector's share of GDP (either registered or total) grew over the last two decades, although this growth was not continuous. While the relative importance of informal sector activity in Jamaica first declined from 7% in 1966 to 1% in 1978, it increased in subsequent years

and reached its maximum value in 1989, with a share of 52%. After that, it fell to 15% in 1991, followed by another period of expansion with a share of 40% in 2000.

Our findings are similar to those of Witter and Kirton (1990), who studied the period 1966-84. These authors, using Gutmann's monetary approach, found the size of the informal economy in Jamaica (as a percentage of total GDP) showed an upward trend from 9% in 1966 to 19% in 1984.[4] These results are shown below alongside estimates from our study. (IRI refers to the Index of Registered Informality and ITI refers to the Index of Total Informality. See Technical Appendix for additional details.)

Figure III-1: Share of the informal sector in GDP, 1966-2000



B. Physical Input (Electricity Consumption) Method

Overview

This macroeconomic approach looks at physical inputs, particularly electricity usage, to estimate the size of the informal economy. The amount of electricity needed to produce the official national income is subtracted from total electrical output. The excess is then attributed to the informal

[4] However, the authors point out that in Jamaica it is common for people only to use savings accounts for the dual purposes of saving and creating demand deposits. In this case, the currency-demand (C/D) ratio may well be overstating the relative use of cash (and consequently overstating the size of the informal economy) since a portion of the saving deposits probably should be included in the denominator of the C/D ratio.

economy. In a more rigorous version, the ratio of electricity use and GDP can be econometrically estimated, with deviations from expected levels subsequently used as indicators of shadow economic activity. Kaufmann and Kaliberda (1996) used this method at the national accounts level to estimate the unofficial economies of post-socialist countries. Their study assumed that electricity consumption is the single-best physical indicator of overall economic activity, whether official or unofficial. Overall economic activity and electric-power consumption have been empirically observed throughout the world to move in lockstep, with an electricity to GDP elasticity usually close to one.[5]

By having a proxy measurement for overall economic activity and subtracting the estimated official GDP (which is a proxy of the formal economy), an estimate of informal sector GDP can be derived. Consequently, the difference between the growth in electricity consumption and the growth of official GDP is attributed to the growth of the informal economy.

Note that there are possible biases when using electricity consumption as a proxy for overall GDP.[6] For example, improved efficiency in electricity usage or an increase in electricity prices can cause a downward bias. Conversely, technological inefficiency due to poor maintenance of machinery and equipment can cause an upward bias. To overcome these biases, Kaufmann and Kaliberda work with several scenarios, where the output elasticity of electricity consumption takes different values.

Estimation

Our estimates of the size of the informal economy in Jamaica using the electricity consumption method cover the period 1991-2000. The data for electricity consumption was obtained from the *Statistical Review* of the Jamaica Public Service Company, Ltd. and official GDP figures from the *Statistical Digest* of the BOJ.

To control for potential biases, we examine two scenarios. The first, consistent with international estimates, assumes unitary elasticity of electricity consumption in response to output changes. The second, more conservative scenario assumes inefficient use of electricity and, hence, increased output elasticity of 1.2.[7]

The following table shows the relative share of Jamaica's informal economy, accounting for variations in levels of electricity consumption during the 1990s. As we can see in both scenarios, the informal economy more than tripled in importance over the decade. By the year 2000, the estimated share of the informal economy exceeded 40% of the overall economy. These figures are greater than the monetary estimates reported above.

[5] See Dobozi and Pohl (1995) and Johnson, Kaufmann and Shleifer (1997) for further discussion.

[6] From simple arithmetic it follows that a downward bias in the overall economy growth estimate (proxied by electricity consumption) will result in a downward bias in the unofficial economic growth estimate, and vice versa.

[7] Kaufmann and Kaliberda point out that significant energy price adjustments promote an efficient use of electricity. In the case of Jamaica, since there were not any major changes in electricity tariffs during the last decade (except for 1992), we can assume an inefficient use of electric energy.

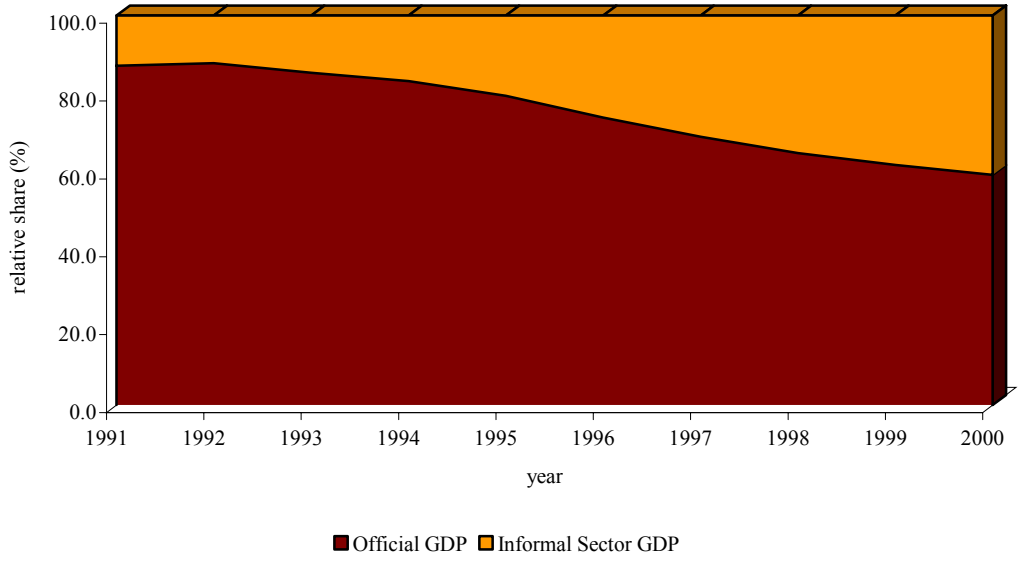
Table III-1: Relative share of informal sector GDP, 1991-2000

year	unitary elasticity scenario	conservative elasticity scenario
1991	12.9	12.9
1992	12.4	12.2
1993	15.6	14.7
1994	18.4	16.9
1995	22.9	20.6
1996	29.1	26.2
1997	34.5	31.1
1998	39.2	35.3
1999	42.5	38.3
2000	45.5	40.9

Note: These numbers could be overestimated because they do not exclude the rural electricity program.

The next graph more clearly illustrates the upward trend of the informal sector's overall share of GDP and, consequently, a significant decline in the relative importance of official transactions in the Jamaican economy.

Figure III-2: Official and informal GDP, 1991-2000
(conservative elasticity scenario)



C. Expenditure Income Discrepancy

Overview

This method uses gaps between expenditures and incomes to estimate the size of the informal economy. The discrepancy between the two may be observed at the level of aggregate national accounts as well as at the individual household level. This method was first used by Smith (1986) and Pissarides and Weber (1989) for Britain and by Sosa and Alaimo (2000) for Argentina, later re-elaborated by Lyssiotou et al. (1999). These studies collected microeconomic data from household surveys in order to estimate unreported self-employment income. The main assumption is that while all income groups will report food expenditure correctly, one group of employees will consistently underreport income, so revealing an estimate of the size of the informal economy. It is generally agreed that expenditure data has a better reporting degree than income data.

Estimation

The data used for the expenditure-based analysis comes from two surveys carried out by STATIN: the 2001 Jamaica Survey of Living Conditions (SLC)[8] and an additional module fielded in 2002 that was developed specifically for this project. Additionally, several variables rely on information from the 2001 Labour Force Survey (LFS). The data used includes household members who were employed or self-employed workers at the moment of the survey, comprising 1,578 individuals from 1,025 households.

The estimation procedure follows two steps. First, income is estimated based on formality and individual and household characteristics. From this calculation, an income series can be predicted for all workers in the sample. The second step estimates food expenditure based on household characteristics, the condition of formality at the household level and the household predicted income. A positive sign associated with the condition of formality will reflect greater food consumption for formal households controlling for household income. Therefore, we can calculate the gross amount of income underreporting and the true income of formal workers.

To classify individuals into "formal" or "informal" categories, we look at whether they are wage earners or self-employed. Individuals must fulfill one or more of the following conditions to be considered a wage earner in the formal sector: (1) to have a signed or full-time contract, (2) to be entitled to a pension, (3) to belong to a union, (4) to be entitled to paid holidays, or (5) to be a public-sector worker. For self-employed individuals, there are two basic requirements to belong to the formal sector: (1) to have a tax registration number and (2) to have made any tax payment to an entity such as the National Insurance Scheme (NIS) or the National Housing Trust (NHT). Individuals classified as unpaid family or farm workers are automatically considered informal workers.

The table below provides statistical information relating to the sample used. The total number of observations (individuals who were working at the time of the survey) was 1,578, of whom 715 were formal workers (45%). The values reported are variable means and the numbers in parenthesis are standard deviations; we also include a T-test of significance in mean differences.

[8] The SLC is the result of collaboration between The Planning Institute of Jamaica (PIOJ) and STATIN. It is carried out annually.

Table III-2: Sample statistical information

	Informal workers	Formal workers	T-test
Number of observations	863	715	1578
Age	41.91	37.70	5.88
	(15.09)	(12.95)	0.00***
Gender (Male)	0.61	0.50	4.37
	(0.49)	(0.50)	0.00***
Married or common law	0.44	0.42	0.86
	(0.50)	(0.49)	0.39
Years of education	8.48	10.52	-8.44
	(4.31)	(5.31)	0.00***
Specific experience	9.88	7.99	3.64
	(11.12)	(9.19)	0.00***
Dependents per worker	1.48	1.31	2.36
	(1.51)	(1.31)	0.02**
Owned house	0.31	0.35	-1.82
	(0.46)	(0.48)	0.07*
Telephone	0.35	0.61	-10.93
	(0.48)	(0.49)	0.00***
Monthly income	17498.7	21798.6	-1.36
	(74772.0)	(37588.9)	0.17
Annual food expenditure	128633.5	153546.9	-5.98
	(83047.7)	(81503.6)	0.00***

*** significant at 10%, ** significant at 5%, * significant at 1%

It is noteworthy that there is a significant difference between both groups in annual food expenditure. In 2001, the gap was approximately J$25,000. This difference is maintained when incomes for both groups are analyzed. However, the mean difference is not robust, mainly because of the greater standard deviation of informal incomes (this standard deviation is more than double that of formal incomes).

The results of the food expenditure function estimation at the household level are shown in the table below. The income elasticity of food consumption is significant at the 1% level with a coefficient of approximately 0.2. We assume this coefficient is the same for informal individuals as well as for formal workers. The coefficient for the predicted dummy of formality is positive and significant. Contrary to the results of Pissarides and Weber in their 1989 analysis of Britain's informal sector, it appears that formal workers in Jamaica consume more than informal workers after controlling for income and household characteristics.

Table III-3: Regression analysis of the log of household food expenditure

	Log of household food expenditure
Predicted household income	0.217
	(9.82)**
Dummy of formality (formal household=1)	0.068
	(1.98)*
Dummy for Kingston metropolitan area	0.176
	(4.47)**
Dummy for other towns	0.174
	(4.01)**
Years of education attained by household head	0.02
	(5.47)**
Gender of household head (male=1)	-0.079
	(-2.31)*
Dummy for married or common law	0.109
	(2.98)**
Number of males between 0 – 5 in household	0.077
	(2.16)*
Number of females between 0 - 5 in household	0.038
	(0.92)
Number of males between 6 - 14 in household	0.111
	(4.67)**
Number of females between 0 - 5 in household	0.102
	(4.08)**
Number of unemployed in household	0.158
	(9.92)**
Number of elders in household	0.05
	(1.64)
Constant	8.474
	(33.75)**
Observations	1009
R-squared	0.37
F – statistic	44.73
	F(13, 995)

Absolute value of t-statistics in parentheses.
* significant at 5% level; ** significant at 1% level

The above coefficients are then applied to our equation for estimating the mean underreporting value for formal workers (see Technical Appendix for detailed analysis). The resulting data suggests that, on average, reported incomes of formal workers have to be multiplied by 1.315 in order to get true incomes. We also identified degrees of underreporting using other types of expenditures such as non-food purchases, utilities and housing. In these cases, the underreporting rate varies between 23% and 56%. However, the food expenditure regression provides one of the most accurate estimations of income underreporting because it uses consumption baskets with low income elasticity. Nevertheless, if we had used another type of expenditure, we would have obtained similar estimates.

D. Method of Additions

Overview

This microeconomic method combines the total wages of workers in the informal sector, the unreported income of formal workers in the official economy and the value-added from independent activities, whether agricultural or non-agricultural, within individual households. Naturally, this method requires household and workforce survey data.

Estimation

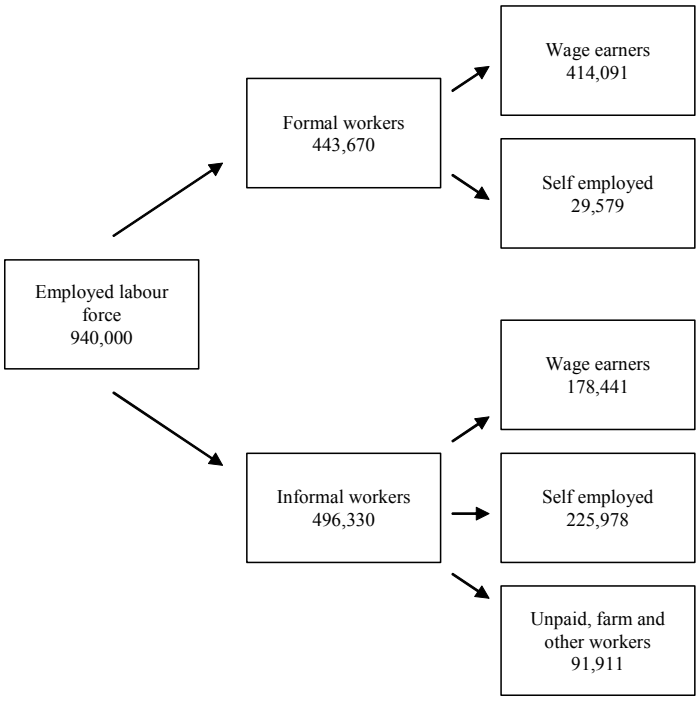
We used information from an additional module of the SLC carried out for the present study and the 2001 Jamaica LFS to complete the above calculations. Since the additional module of the SLC did not cover all of the country's parishes and constituencies,[9] figures were expanded while maintaining the observed distribution of workers. To calculate the total size of the workforce, we used an average of the figures presented by STATIN for the year 2001.

The results indicate the Jamaican labor market has marginally more informal workers than formal workers: 53% of workers, 496,330 individuals, are engaged in the informal sector.[10] Of these, 46% are self-employed, 36% are wage earners and the remaining 18% are unpaid, farm and other workers. In the formal sector, there are around 443,670 individuals, the majority of whom are wage earners (93%).

[9] Percentage of coverage is 95.8%. Similarly, loss of information occurs because of attrition in the additional module of the SLC.

[10] The method used to classify informal or formal is the same as described above.

Figure II-3: Total Jamaican workforce, 2001



This estimation also assumes the missing constituencies share similar employment status as the ones involved in our previous calculation. We believe that by keeping the same distribution, the classification of employment status will remain relatively precise because of the accurate identification of employment condition and informality used in our estimates. However, the values provided should be considered a reference rather than an exact source.

Despite fewer formal workers operating within the Jamaican economy, their combined income was J$3,900 million more than their informal counterparts. Total formal income accounted for 29% of 2001 Jamaican GDP compared with 28% from informal workers.

Table III-4: Total income of informal and formal workers, 2001 (J$ million)

	Total Income	
	Amount	% GDP
Informal	98,522	27.5%
Formal	102,454	28.6%

The results of the previously outlined consumption expenditure function approach indicate that formal workers in Jamaica underreport, on average, 32% of their income. Since the total annual income reported by these individuals was estimated at J$102,454 million in 2001, it follows that the total amount of unreported income is equal to J$32,268 million, or 9% of GDP. However, in a conservative scenario—i.e., using the lower bound of the mean underreporting value (29%)—the total amount of undeclared income declines slightly to J$29,991 million (or 8% of GDP).

Table III-5: Unreported income of formal workers, 2001 (J$ million)

	Unreported Income	
	Amount	% GDP
Estimated	32,268	9.0%
Lower Estimate	29,991	8.4%

We further estimate that the annual value-added generated by the 135,000 households that carry out non-agricultural activities in Jamaica is J$20,034 million, representing around 6% of the 2001 Jamaican GDP. In terms of output, these households report J$50,300 million per year. Their sales of J$46,000 million represent 13% of the GDP (a very similar proportion to that obtained by McFarlane, 1997). On the other hand, the contribution of agricultural activities to the economy is four times smaller. For the 115,670 households carrying out primary activities, their value-added has been estimated at J$5,080 million (1% of GDP), their annual output at J$6,945 million and their annual sales at J$6,487 million.[11]

Table III-6: Value-added, output, sales and fixed assets of household independent activities, 2001 (J$ million)

	Non-agricultural activities		Agricultural activities	
	Amount	% GDP	Amount	% GDP
Value-added	20,034	5.6	5,080	1.4
Output	50,300	14.0	6,945	1.9
Sales	46,718	13.0	6,487	1.8
Fixed assets	62,612	17.5	1,330	0.4

If we consider as formal those non-agricultural activities which, at a minimum: (1) have a tax registration number, (2) have a license to operate their business, or (3) pay general consumption tax (GCT), then the value-added generated by informal businesses would be equal to J$10,790 million (3% of GDP). In the case of agricultural activities, if we consider as formal those units which have: (1) a tax registration number or (2) an income tax number, then the contribution of informal primary activities would be equal to J$3,513 million (1% of GDP).

As outlined above, the total size of the informal sector is the sum of the three components: the wages of informal workers (see table III-4), the unreported income of formal workers (see table III-5) and the value-added generated by household independent activities (see table III-6). We estimate that the informal sector in Jamaica generated J$155,904 million in 2001, representing 44% of GDP. This figure decreases slightly to 40% under a conservative scenario for the degree of underreporting by formal workers and distinguishing between formal and informal household activities according to their possession of registers.

[11] Note also the significant value of the fixed assets possessed by non-agricultural businesses (approximately J$62,600 million), whereas the level of equipment of the agricultural units is much lower (J$1,330 million).

E. Summary of the Size of Jamaica's Informal Economy

The following table summarizes our estimates for the size of Jamaica's informal economy using the monetary approach, the electricity consumption method and the method of additions.

Table III-7: Size of the informal sector, 2000-01

	%
Currency Demand Approach	
Share of official GDP, 2000	39.1
Share of official GDP (predicted), 2001	43.7*
Share of total GDP, 2000	28.1
Electricity Consumption Method	
Share of total GDP, 2000	45.5
Share of total GDP (conservative scenario), 2000	40.9
Method of Additions	
Share of official GDP, 2001	43.5
Share of official GDP (conservative scenario), 2001	39.9

*This value was estimated using the annual growth rate of the ratio of the informal sector to registered GDP (IRI_e) for the period 1996-2000.

As we can see, both the monetary and method of additions approaches indicate that the informal sector's share of official GDP fluctuated around 43% for the year 2001. We believe that the electricity consumption method overestimates the contribution of the informal sector to the economy as it is significantly higher than estimates using other methods (more than 40% of *total* GDP in 2000). However, the results provided by this approach evidence an upward trend in the share of the informal sector over GDP, similar to the pattern shown by the monetary method. According to this method, an approximate estimate of the size of informal sector over total GDP would be around 30%.

It is also important to highlight that the informal economy appears to have grown much faster than official economic figures throughout the 1990s, illustrating that success of the informal economy could indeed have played a role in the reduction of poverty during that time period.

IV. CHARACTERISTICS OF THE INFORMAL SECTOR

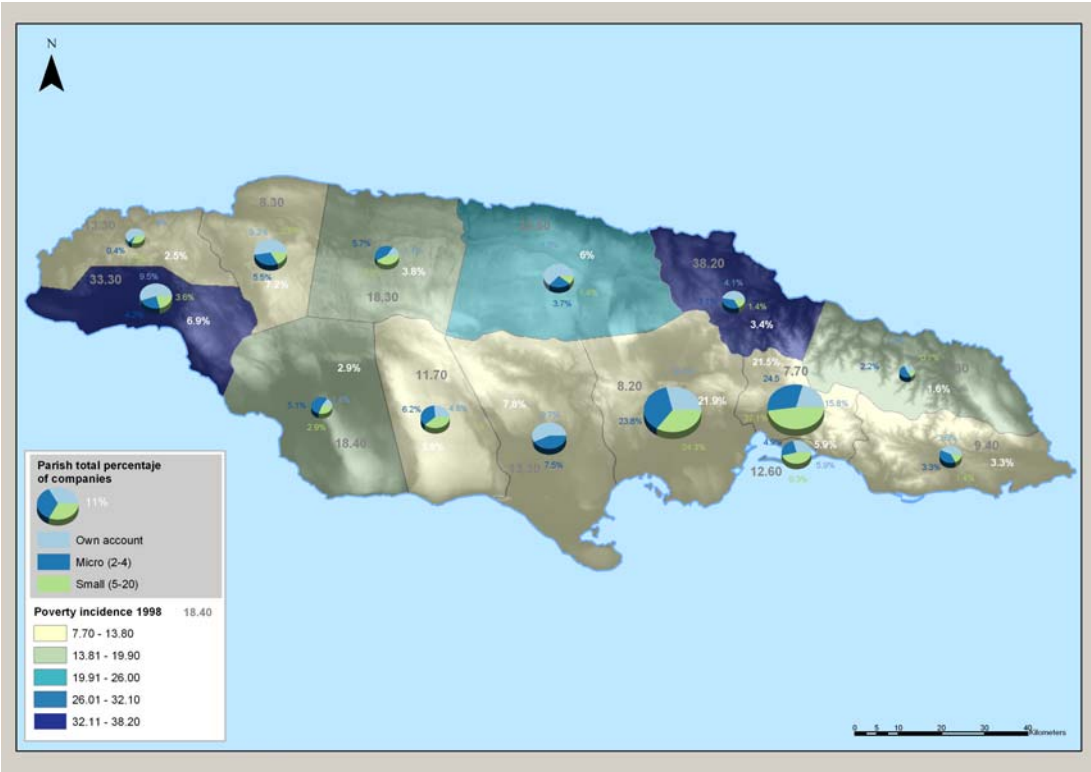
This section describes the characteristics of agents involved in the informal sector in Jamaica. Generally, every economic transaction may be evaluated depending on whether agents attend to all or some of the legal regulations attached to that transaction. Here we focus on micro and small enterprises (MSEs), generally regarded as "informal intensive," as well as individual own-account, or self-employed, workers. By developing a better understanding of the Jamaican MSE sector, we can gain a better understanding of how the informal sector operates as a whole. Looking at MSEs has its limitations and is used here as a practical response to the well-known difficulties of accessing information on the informal economy. It overlooks, for example, informal activities of medium and larger enterprises while incorporating the formal operations of smaller entities. Nevertheless, as our results illustrate, informality is dominant among MSEs and therefore they provide a useful point of departure for understanding the informal sector as a whole.

A. Sources and General Description of the Data

An MSE survey was designed and carried out in 2003 to collect the data presented here.[12] Based on a full listing of Jamaican premises, a size-stratified random sample of 1,226 was drawn consisting of the following business components: 52% own-account workers; 37% micro enterprises with two to four workers; and 11% small firms employing between five to 20 workers. The figure below shows the geographical distribution of the MSEs by size and according to poverty levels in the respective parishes.

[12] Definition and design of the survey were jointly undertaken between GRADE and STATIN during March 2002. The fieldwork was conducted by STATIN in 2003.

Figure IV-1: Geographic distribution of MSEs



The table below illustrates income distribution between the enterprises in our MSE survey. As we can see, the average own-account worker generated J$18,500 a month, while the average micro or small enterprise had a total income of J$57,000 and J$900,000, respectively.

Table IV-1: Monthly average income per enterprise and per worker by firm size (J$)

Size	Income	Income per worker
Own-Account	18,510	18,510
Micro (2-4)	56,702	21,288
Small (5-20)	894,252	103,091
Total	**119,483**	**27,932**

In terms of economic activity, nearly half of those surveyed worked in "wholesale and retail trade," followed by 22% in "education, social work and other personal services" and 14% in "hotels and restaurants." However, there are important differences depending on the size of the enterprise. In the case of own-account workers, almost 60% were devoted to wholesale and/or retail trade activities. Among small firms, we observe that "manufacturing" emerged as the third most important economic activity (9%). Similarly, for micro enterprises, activities within "hotels and

restaurants" were proportionally more important than they were for small firms or own-account workers.

B. MSEs and Informality

In order to evaluate the level of informality among MSEs, we must analyze their compliance with the regulations of the existing legal system. We consider informality as a continuum and that in many instances MSEs may satisfy some requirements but not others. By comparing the legal requirements with those with which an MSE actually complies, we are able to develop an index for formality. For this, we take into account the following legal demands:

- Licenses and Registrations
  - Every firm should have:
    - Tax registration number (TRN) and license to operate
    - Expenses and income book
  - Those who import goods and services should have a tax compliance certificate
  - Units with two or more employees should keep a payroll.

- Tax Compliance
  - Every firm should:
    - Pay general consumption tax
    - Annually renew its operating license
    - Declare income tax (with the exception of own-account workers with earnings below J$120,432 per year)
    - Make contributions to the National Insurance Scheme (NIS) and/or National Housing Trust
  - Firms with a payroll equal to or higher than J$14,444
    - Make contributions to Heart

Using these criteria, we can construct a simple index of formality ranging from 0 to 100, with firms that satisfy all of these requirements awarded 100 points.[13] The result is that the average MSE in our survey met 36% of all the requirements demanded by the legal system, supporting the idea that the MSE sector is characterized by a high degree of informal transactions. Therefore, we empirically observe that a significant share of economic activity in the MSE sector is a subset of the country's aggregate informal economy.

Not surprisingly, we also witness important differences as to the level of informality within the MSE sector. First, there is a clear positive relationship between firm size and our legal index. The larger the firm, the better its compliance with legal requirements. Among small firms, the overall index is

[13] Our simple index is constructed as follows: When a firm satisfies a legal requirement, then it gets one point, otherwise it gets zero points. We do the same for all the requirements. Then, we sum up all the points and divide them by the number of legal requirements. In the case of tax obligations, we only take into account whether the firm paid the corresponding tax, no matter the amount paid. All the requirements are weighted equally.

68%, while among own-account entrepreneurs it is only 20%. These results hold even when we decompose the index to reflect possession of licenses and registers and the payment of taxes.

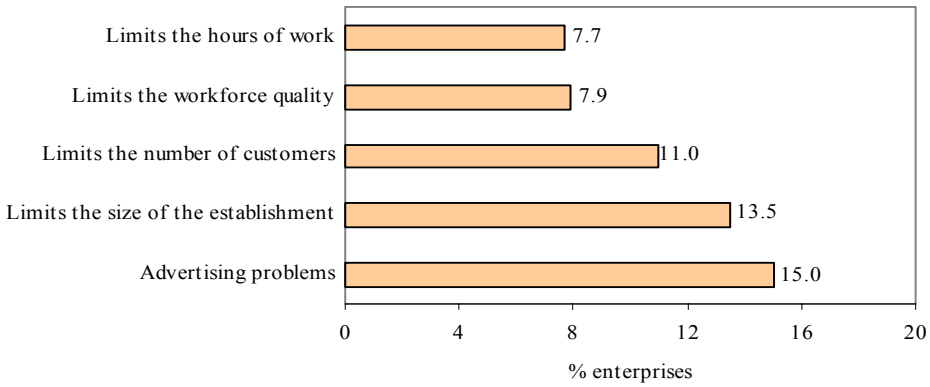
Table IV-2: Level of formality of MSEs by firm size*

Size	% Possession of registers	% Payment of taxes	Formal Index*	# enterprises
Own-Account	34.6	10.7	20.3	486
Micro (2-4)	58.1	34.3	44.1	398
Small (5-20)	78.3	61.7	68.4	121
Total	49.2	26.2	35.5	1,005

*Index between 0 and 100. A value of 100 indicates that the business has all the registers and pays all the required taxes.

Our results suggest that informality is, to a large extent, standard operating procedure among Jamaican MSEs. But why do MSEs engage in informal activities? Clearly, the answer has to do with the benefits and costs of such decisions. On the one hand, it is typically assumed that not complying with regulations helps firms reduce their expenses. On the other, there are significant financial and legal penalties if a firm gets caught engaging in informal activities. Additionally, participating in the informal sector may impose certain business restrictions: exclusion from the formal sector, limited access to public services and/or goods, and the need to maintain a low "legal" profile. In order to assess these issues, we polled MSEs about the most important disadvantages associated with not complying with legal requirements. Most responses highlight that being part of the informal sector restricts firms' decisions, forcing them to take actions that will keep them invisible to the legal system. Advertising problems, restrictions on the size of the establishment and a limited number of customers are among the most cited disadvantages. Clearly, all these factors can limit performance.

Figure IV-2: Disadvantages of informality



We also asked why firms didn't have some of the required registrations. Surprisingly, ignorance and high bureaucracy were among the most cited reasons. For example, among those without a tax registration number, 31% claimed that they were not required to have one. Another 20% said that getting one was too complicated. This finding implies that there is still work to be done in order to simplify the legal system.

C. Factors Promoting MSE Success

What improves the performance of MSEs? In particular, is formality a burden or an advantage? Here, we construct a set of variables to measure business performance. Then, we apply an econometric procedure to plot different variables against our performance indicators.

Focusing our attention only on firms with two or more workers, we consider three proxies of economic performance: "profit margin" (annual self-reported profits divided by annual estimated income); income per worker; and growth rate of workers. Against these variable indicators, we examine four types of explanatory variables: owner characteristics; company characteristics; business practices; and control variables for location and activity.

We find a positive correlation between a firm's performance and the education level of its manager, which in turn directly impacts workers' income in that firm. This finding applies to annual growth, further underscoring the importance of a manager's human capital in the economic success of the firm. Also, we find that a general education is more important than specific training. Presumably, this is because managers in the MSE sector are responsible for making a variety of decisions, underscoring the need for a breadth of skills over specific training relative to individual business activities.

Our regressions show that age positively correlates to profit margins and income per worker. In this sense, we can assume firms with more experience in terms of human capital enjoy better performance. Also, small firms have higher incomes per worker than micro enterprises. However, despite the fact that we control for capital intensity, this result may reflect overestimation of

performance for small firms relative to micro enterprises. The amount of capital per worker has a positive effect on profit margins, too, though profit margins reflect no bias for capital intensity. This underscores the fact that firms able to increase labor productivity through investment in capital—most likely firms that do not face borrowing constraints—will have better long-term prospects than capital-constrained enterprises.

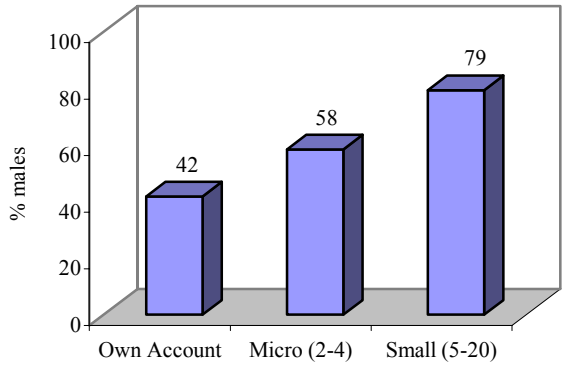
Our index of formality shows that formality increases income per worker. After controlling for many factors that may affect a firm's performance, there appears to be no evidence that compliance with legal regulations acts as a constraint on the MSE sector. On the contrary, formality can enhance a firm's performance by, for example, enabling it to reach a greater number of clients.

Access to Business Development Services (BDS) is related to increased income per worker. Despite the fact that few firms in Jamaica's informal sector utilize these services, the net benefit of hiring external resources is positive. Further, the positive effect of social capital or networking is reflected by an increase in income per worker among those firms who participate in business associations. However, as we see below in our examination of positive externalities on the Jamaican MSE sector, there exists a distinct lack of awareness among most MSE owners regarding BDS and the advantages of inter-company networking.

D. Who are Jamaica's MSE Entrepreneurs?

Gender – There are important gender differences across different types of enterprises. In particular, while women made up the majority of own-account workers (58%), they comprised progressively smaller portions of larger firms. In the case of small firms, almost 80% of the entrepreneurs in our survey were men, though the overall male workforce participation rate was around 50%.[14]

Figure IV-3: Gender of entrepreneurs by firm size



[14] Complementary module of the 2001 Jamaican SLC.

Age – Jamaican entrepreneurs are on average seven years older than workers in the formal sector. The average age of those surveyed was 45 years, with no significant differences depending on the firm's size. This result suggests that the decision to become an entrepreneur correlates with years of experience in the labor market, either in the formal or informal sector. Additionally, younger individuals likely must remain in the labor market to accumulate initial wealth in order to start their own business (Cabral and Mata 2001).

Education – MSE entrepreneurs are, on average, more educated than workers in the informal sector and about comparable to workers in the formal sector. The average level of education of firm owners in our sample was 10.7 years, while the average worker in the informal sector had 8.5 years of education; the overall education level for participants in the formal sector averaged 10.5 years.[15] A few other salient observations emerge from the data. First, there is a positive relationship between the entrepreneur's level of education and firm size, with small-firm entrepreneurs averaging three years of additional education over own-account entrepreneurs. Second, one-third of small-firm entrepreneurs had a university-level education. This important finding contradicts a common belief that human capital is scarce among MSEs.

Motivation – Before starting their own businesses, only 16% of those entrepreneurs surveyed were unemployed. This percentage is far greater among own-account workers (25%), while only 3% of small-firm entrepreneurs were previously unemployed. Even among own-account workers, most of the respondents had a job preceding their decision to become an entrepreneur. When questioned about their main motivation for going into business, most respondents (38%) cited a desire for independence. Only 16% claimed the lack of a job was the principal reason; this proportion is greater within own-account workers. It follows that the MSE sector is not generally considered a last-resort option. Similarly, 33% of survey respondents noted that higher income was a motivating factor in deciding to become an entrepreneur. In the case of small firms, 14% run the firm in order to maintain family traditions.

E. MSE Characteristics

In this section we look at how MSEs operate. In particular, we evaluate management practices, characteristics of the workforce, fixed assets and technology platforms.

1. Management Practices

Rather than attempting to evaluate managerial abilities and strategic decisions, we sought to use our survey results to analyze the potential of informal sector businesses to compete in the global marketplace. Our findings suggest that there is much room for improvement in this regard. For example, only 23% of the firms in our sample used account books, while only 21% had a business plan.

[15] 2001 Jamaican LFS.

Table IV-3: Type of business practices

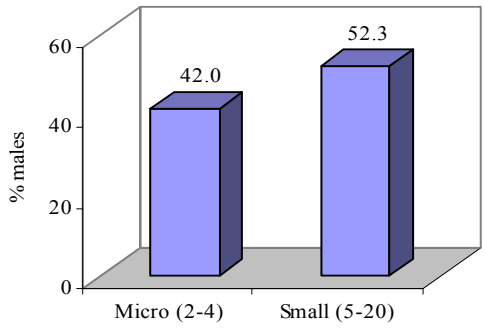
Type	% Enterprises
Entrepreneur is an active member of a business association	5.3
Market research for location	2.0
Quality control of the product or service	25.0
Training of workers*	21.5
Planned management	20.7
Technology innovation**	24.6
Possesses an account book	22.8

*In the case of own-account businesses, if the entrepreneur received any specific training
to his work.
**If the entrepreneur spent some time during the last 12 months improving the production
process, making new products/services, or improving his designs.

2. The Informal Workforce

Our definition of the workforce comprises all firm-level employees and excludes owners and own-account workers. In our survey, we found that the rate of female workforce participation, 57%, was relatively high for MSEs. By comparison, female participation in the formal sector of the economy was 50%. However, as we have seen above, the proportion of female MSE owners is much smaller (37%). This difference is even greater if we focus our attention on small firms. Here, only 20% of managers were female, though 48% of the workforce was female.

Figure IVV-4: Gender of workers by firm size

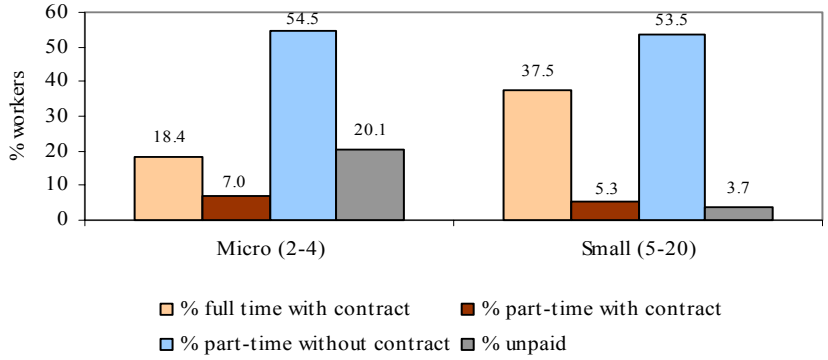


As expected, we found workers were about ten years younger than entrepreneurs in the informal sector, averaging 35 years old. We found no important differences in workers' ages across MSEs, similar to our findings for their managerial counterparts. In terms of the educational level of the workforce, 15% of workers in small firms had higher education, while only 11% did among micro enterprises.

When it comes to the contractual relationship between employer and worker, only 30% of the MSE workforce had a contract. Informal labor relationships were even more prevalent among micro enterprises than in small firms. In the latter group, 43% of workers had a contract, while this number was only 25% in the micro enterprises we surveyed.

Among MSEs, part-time employment appears more frequent than full-time jobs. In our sample, we found that 61% of the workforce was hired on a part-time basis. Additionally, 16% were unpaid workers (mainly relatives), most of whom were probably working on a part-time basis. This leads to the hypothesis that MSEs operate in the informal economy in order to enjoy a flexible production process; they can hire and/or fire workers in a frictionless labor market. Once again, it seems that the relative importance of part-time employment declines with the size of the firm. Particularly, the participation of unpaid workers is very different between micro and small firms. In the former group, unpaid workers represented 20% of the workforce in our survey, while among small firms this participation rate was a very limited 4%.

Figure IV-5: Condition of employment of workers by firm size



Many MSE advocates highlight that these firms create a lot of jobs. However, any analysis of the MSE labor market should consider not only job creation but also job destruction. We found that firms that hired workers in the six months prior to the survey grew their workforces by 6%, while those who reduced jobs did so by 4%. Therefore, the overall contribution of the MSE sector to the net creation of jobs in the economy may seem positive but is not statistically important.

3. Assets and Equipment

Our survey results verify that larger firms are more capital intensive when it comes to technology. The capital per worker ratio in small firms was 68% higher than in micro enterprises, or three times greater than in the case of own-account workers. The different activities undertaken by small, micro and own-account enterprises, of course, is one explanation for the variance in technological capacity. At the same time, more capital-intensive firms are generally more visible, since they tend to be physically larger. So in this sense, capital intensity may imply a greater degree of formality.

Table IV-4: Capital and capital per worker by firm size* (J$)

Size	Capital	Capital per worker
Own-Account	41,084	41,084
Micro (2-4)	183,309	73,101
Small (5-20)	930,955	122,884
Total	**191,878**	**61,992**

*Capital includes machinery & equipment and merchandise.

In order to verify the modernity of equipment in Jamaica's MSE sector, our survey looked at computer utilization and Internet access. Surprisingly, we found that almost half of small firms not only used computers but had access to the Internet. Unsurprisingly, comparable access among micro enterprises and own-account workers fell to 18% and 4%, respectively.

4. Property Titles

Finally, we looked at a different face of informality, that of ownership and property titles. De Soto hypothesized that a missing or incomplete system of property titles is one of the most important constraints limiting the growth and economic success of the informal sector. He argues that when an asset is not adequately registered, it loses its value as capital because it cannot be leveraged as collateral. Our survey found that 65% of primary business owners had a property title, 61% saying that the title is registered. This proportion is significantly higher among small firms, where 86% had a registered title. Pursuant to De Soto's hypothesis, it follows that the lack of property registration should not be a limiting factor among small Jamaican enterprises. This problem is mainly faced by own-account workers and micro enterprises, even though more than 50% of these also had a registered property title.

We observe a similar pattern among those who rented their premises, with almost 75% of small-firm owners holding some type of formal agreement. Own-account workers and micro enterprises relied less on formal rental agreements, 56% and 62%, respectively.

5. Customers

Broadly speaking, Jamaican MSEs serve middle- and low-income families in their immediate locality. As expected, own-account workers almost entirely sold their goods or services to individual customers, 6% of whom were tourists. In the case of small firms, 9% of their customers were private enterprises and 6% were wholesalers/retailers. These figures indicate that MSEs do not have strong links with larger firms, as in the case of Japan. Similarly, MSEs are not primary government service providers.

Table IV-5: Distribution of customers by MSE size (%)

	Own-Account	Micro (2-4)	Small (5-20)	Total
Local individual customers	91.4	90.7	83.5	90.3
Tourists	5.9	0.6	0.4	3.3
Private enterprises	0.6	4.0	8.7	2.8
Wholesalers/retailers	1.5	2.4	5.8	2.3
Public Institutions	0.5	1.9	1.5	1.1
Peddlers	0.1	0.4	0.1	0.2
Total	**100.0**	**100.0**	**100.0**	**100.0**

Since Jamaica's MSEs do not represent a significant source of inputs or services for medium and large businesses, there is little chance of positive externalities from the growth of large firms to small firms. Only 12% of the firms in our survey reported having received help or knowledge transfer from their customers; in small firms this figure was 18%. This is further qualified by the fact that the help received was almost entirely related to payment terms.

6. Suppliers

We found that it is mainly wholesalers and retailers who satisfy the demands of the MSE sector: 86% bought inputs from wholesalers and 24% used retailers. These numbers are very similar among own-account workers and micro and small enterprises.

Only 15% of enterprises in the MSE sector received any assistance from their suppliers, though this proportion was much higher among small firms (34%). And help, when it did occur, was mainly proffered to overcome MSEs' liquidity constraints in the form of loans rather than positive externalities like knowledge and technology transfers or access to machinery and equipment.

Generally, credit lines are frequently available when suppliers and firms engage in long-term relationships,. This is not the case for Jamaica's MSE sector, with less than 20% of firms in our survey receiving any type of credit from their suppliers. Small firms did, however, enjoy more frequent lines of credit, probably on account of their higher degree of formality.

Table IV-6: Type of payment when buying inputs/merchandise by firm size*
(% of purchase)

Type of payment	Own-Account	Micro (2-4)	Small (5-20)	Total
Cash	95.3	89.7	75.9	91.5
Credit	4.7	10.3	24.1	8.5
30 days credit	4.2	7.5	17.7	6.6
60 days credit	0.1	1.8	4.3	1.1
90 days credit	0.4	1.0	2.0	0.8
Total	**100.0**	**100.0**	**100.0**	**100.0**

*38.1% of non-response.

7. Competition

On average, the firms in our sample estimated that 75% of their competitors were micro enterprises and 20% were small ones. They did not appear to compete with medium or large firms, which comprised less than 5% of perceived competitors. In this sense, MSEs operate in different market spaces from larger firms, differentiated by their products, locations or quality and pricing.

A common idea in developing countries is that informal or small firms offer better prices but lower quality than larger firms. In order to evaluate this hypothesis, we asked how business owners evaluate their prices and the quality of their products and services relative to similar sized and larger firms. Most reported having prices and quality similar to those of their competitors, with the figures below illustrating the distribution of survey responses.

Figure IV-7: Price and quality in comparison to similar firms
(left: micro enterprises, right: small enterprises)

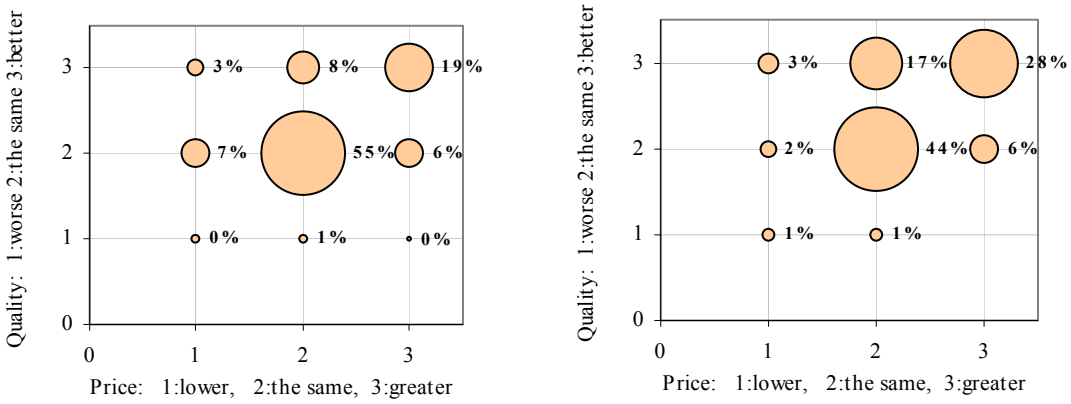
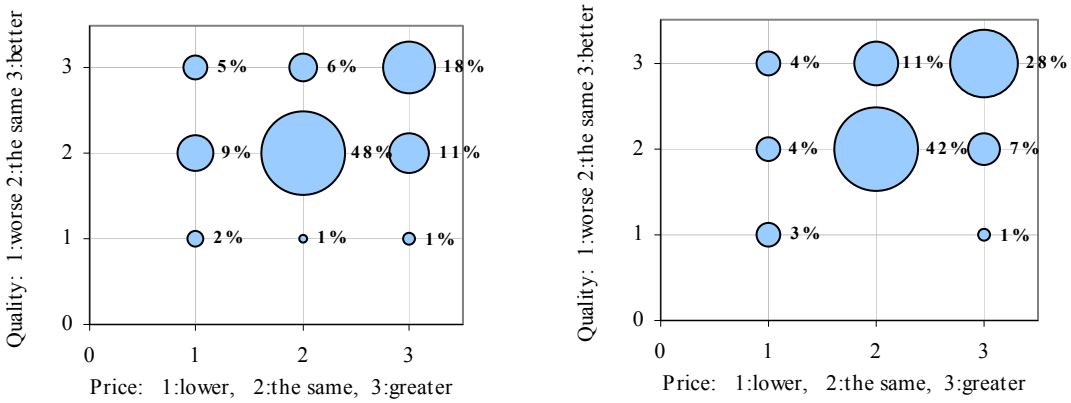


Figure IV-8: Price and quality in comparison to larger firms
(left: micro enterprises, right: small enterprises)



When the MSEs compared themselves with larger firms, we got similar results, indicating that smaller firms do not perceive that the quality of their good and services is any lower than those of their larger counterparts. It may also be the case, however, that there is a perception of non-competition between these sectors.

8. Business Clusters and Networks

At the international level, the clustering of firms has been shown to create and strengthen competitive advantages. The evidence we have for Jamaica, however, reveals little evidence of clustering or cooperation among MSEs. Just 16 firms, out of a total of 1,226 firms in our sample, had been subcontracted by another firm, and even fewer had subcontracted or outsourced processes or services. The same result appears when we asked if they shared orders from a common client. From this, it appears that the Jamaican MSE sector comprises an atomic configuration of economic units that compete individually with each other, in the absence of productive links for cooperation.

9. Availability of Financial Resources

The existence of bank accounts among MSEs is a first indicator of participation in the formal sector's financial economy. In our survey, we found that 90% of own-account workers did not have a bank account, either maintaining total financial self-sufficiency or managing their affairs through other informal financial institutions. Only a third of micro enterprises had a bank account. The number of small firms with bank accounts was higher at 77%.

The small number of firms able to obtain loans further illustrates the difficulties faced by Jamaica's MSE sector when it comes to financial assistance. Only 11% of MSEs applied for a loan in the year before our survey, of which only 8% received a loan. As expected, the numbers were higher for small firms than for micro enterprises or own-account workers, but in any case they seem insufficient. For example, only 15% of small enterprises obtained a loan. Comparing these figures with the number of firms that reported needing a loan (42%), we can conclude that a large number of firms face borrowing constraints in the current Jamaican MSE business environment. As we can see from the table below, only a third of the enterprises we surveyed obtained loans from commercial banks, the rest mostly borrowing from family and friends or informal agents like money lenders.

Table IV-7: Lender of the main loan obtained by the enterprise during the last 12 months by firm size

	Own-Account	Micro (2-4)	Small (5-20)	Total
Commercial Bank	23.1	27.3	66.7	34.4
MicroFIN	15.4	9.1	4.8	10.8
Credit Union	5.1	18.2	4.8	9.7
Other formal institution	10.3	6.1	0.0	6.5
Family or friends	20.5	24.2	9.5	19.4
Small Business Lender	15.4	12.1	4.8	11.8
Other informal institution	10.3	3.0	9.5	7.5
Total	**100.0**	**100.0**	**100.0**	**100.0**

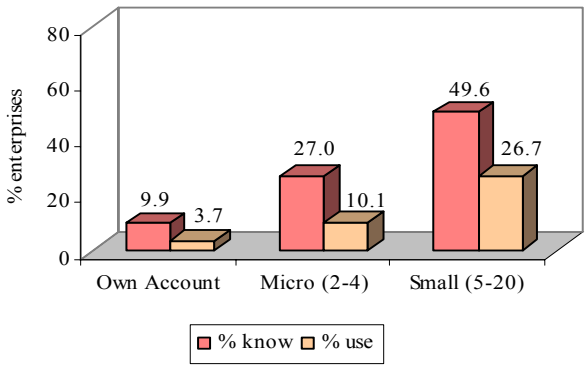
Our findings make evident that Jamaica's MSE sector suffers from insufficient access to financial resources. And while the development of microfinance institutions in countries such as India has proved to be effective in overcoming similar problems, it is unclear whether Jamaica's lack of access is a result of poor infrastructure or simply the scarcity of potentially successful projects in the sector. In many cases, the disincentive for traditional banks to lend money is reflective of the high risks and limited payoff of informal sector enterprises.

10. Use of Business Development Services

The small scale of MSEs means that most cannot maintain internal accounting or legal operations, nor can they achieve significant levels of technological innovation in terms of improved efficiency, equipment or training. In many countries, governments have intervened to provide many of these services, reflected in the increased interest over the past decades in the provision of Business Development Services (BDS).[16] This concept captures all those non-financial services that firms require to improve their operations and competitiveness, from accounting and finance to marketing and distribution. The effectiveness of BDS is undisputed; the challenge is to ensure such services are competitive without becoming a wholly state-sanctioned public provision.

Our survey of Jamaican MSEs pointed to very limited knowledge of available BDS providers, with only 20% of respondents with any prior knowledge of BDS and only 9% on average with previous experience using BDS. As the figure below illustrates, the level of awareness increases proportionally with the size of the firm. As for why they did not utilize BDS, almost half of those who responded indicated that they did not need them. This suggests a lack of understanding about the potential positive effects of BDS, missing markets or the low quality of BDS resources.

Figure IV-9: If the entrepreneur knows and uses any BDS by firm size



MSEs in our survey had almost exclusively used BDS for accounting and tax assistance, with other services—such as training or marketing—rarely mentioned, if at all. Meanwhile, it appears private businesses or individuals mostly provided these services, rather than public entities such as business associations, universities or government-affiliated programs.

[16] See ILO (2000) for a good survey on the topic of Business Development Services.

V. CONCLUSIONS

This study sought to estimate the size and assess the characteristics of the informal sector in Jamaica in order to understand the role informality plays in the economy and to analyze its influence in the reduction of poverty in the 1990s. We find that the informal economy (encompassing pure tax evasion, the irregular economy and illegal activities) represented a large and growing share of the overall economy during the decade. According to some of our estimates, the informal economy nearly doubled in size, reaching just over 40% of official GDP in 2001. This growth contributed significantly to the decline in poverty during the decade.

This growing sector represents a diverse group of enterprises and workers, ranging from local peddlers to relatively sophisticated small entrepreneurs. This obviously should be taken into account when prescribing new policies or programs. With respect to pure tax evasion, it is clear that tax evaders reduce revenue the Jamaican tax system would otherwise receive. Tax evasion therefore contributes to lower levels of government services, higher taxes on the rest of the economy and larger government deficits. Therefore, decreasing tax evasion in Jamaica is socially desirable. To achieve this goal, we recommend tax simplification and increased information-reporting coupled with a modernization of systems under a cost-benefit criteria. We do not believe that it is cost beneficial to uncover and punish all tax evasion.

Irregular economic activity is the least virulent portion of the informal economy, and even has beneficial aspects. Irregular activity generates goods, services and jobs that might otherwise be unavailable. Nevertheless, these goods, services and jobs tend to be of highly variable quality and they are certainly no better than they would have been if the same activity were formalized. The government may be able to combat the attractiveness of the irregular economy by providing alternative opportunities to new entrants in the labor market. In addition, the government may want to consider reducing regulation and increasing incentives for participation in the formal economy (for example, better access to credit or training programs within targeted sectors). As we have seen, improved provision to BDS positively impacts the performance of businesses in the informal sector.

Given that the irregular economy is essentially composed of non-agricultural and agricultural MSEs, its tax compliance is affected by two significant factors (Due, 1990): (1) the costs of compliance associated with keeping records and filing returns and (2) the problem of effective control by the revenue agency. MSEs are not only more difficult to control, but revenue agencies are more limited in their ability to register and license these enterprises, as well as handle their returns and delinquency. As mentioned by Due, there is no ideal solution to the problem of small firms and farmers. Yet some exemption must be provided. Sales volume is not an ideal basis for delineating taxable and non-taxable firms, but in many countries it appears to be the only feasible approach. As best as we can determine, it does not cause insurmountable problems, but it undoubtedly results in some incidence of evasion because some countries clearly set the exemption figure too low. Another possible solution is to determine eligibility for exemption by administrative action, which has the merit of flexibility and the application of different standards across various fields, but it is open to corruption and arbitrary action. On the other hand, one of the most serious problems consists in passing tax paid on inputs.[17] Allowing small registered firms to file and pay over longer intervals

[17] As mentioned by Due (1990), to allow firms to show tax paid on their inputs in their sales invoices reduces the gain from exempting small firms and is hardly workable for small semi-subsistence farmers. To allow those who purchase from unregistered firms to assume that a portion of the purchase price consists of tax paid on inputs by the

could greatly reduce their net cost. Since most small firms do not sell to registered firms but only to final consumers, there is no cascading of tax results. Again this implies an inevitable discrimination in favor of small firms, but it is unlikely to cause serious economic distortion given the cost disadvantages faced by these firms.

Finally, the illegal economy is the most problematic of the informal sector's activities. The operations of the illegal economy are very costly to citizens in terms of lifestyle, antitheft devices and fear. Goods generally lose value as a result of illegal transfers. While illegal goods and services often provide net benefits to the purchaser, such benefits may be short-lived and may come at substantial costs to the general public. Effective policy to combat the illegal economy may combine legalization of some goods and services (e.g. gambling) with stricter enforcement of others.

To carry out the above-mentioned policies, it is essential to look closely at areas of rapid growth in the informal economy so that these areas can be targeted and inefficient rules can be corrected. This implies an ongoing monitoring and evaluation program that will allow policymakers to clearly identify the impact of corrective policies and to determine when corrective measures are necessary.

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exempted enterprise is highly arbitrary and inequitable. To allow the unregistered firms to apply for a refund of tax paid on inputs is unworkable for the typical small farmer and enterprise for the same reasons that it is not desirable to register these in the first place.

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