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# **Informality in Mozambique:**

## Characteristics, Performance and Policy Issues

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DRAFT November 2009

This publication was produced by Nathan Associates Inc. for review by the United States Agency for International Development.

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# Executive Summary

This study analyses informality in Mozambique. Based on the most recently available government data on informal enterprises, it examines the characteristics of informal economic operators, highlights differences between different types of informal firms and analyses performance differences within the informal sector. It also discusses current policy measures and their impact on encouraging greater formalization, a key on-going policy objective cited in PARPA II. The findings from the data and policy analysis were discussed in interviews and presented to stakeholders from the government, private sector and donor communities, with comments and recommendations incorporated in this draft report.

## FRAMEWORK FOR ANALYSIS

A summary of the wide literature on informality underline the following main points:

- An important factor in determining the informal sector is likely to be the availability of information regarding enterprise obligations.
- Assuming available information, the decision on whether or not to comply with regulations depends on the relative costs and benefits to compliance, the likelihood of being detected and punished if operating illegally, and the scale of the punishment.
- A growth promoting strategy requires to focus on the impact of policies on this trade-off.
- Informal firms can serve different objectives: some offer a means of survival in the absence of social security nets, others a means to earn an income while awaiting salaried opportunities, while yet others use informality as a way to undercut similar formal firms. A common categorization is between firms which are involuntarily informal, who would prefer to be formal if they could, and voluntarily informal, who opt for non-compliance as a strategy.
- Policy which impacts on the informal economy must take this variation into account.

## CHARACTERISTICS

The principal characteristics of the sample of firms examined here are as follows:

- 57.7 percent of the sample can be classified as involuntarily informal - 44.1 percent of firms cite a lack of salaried employment opportunities for operating an informal business, while 13.6 percent explicitly cite survival-related reasons. 32.0 percent of responses suggest voluntary informality.
- Although technically all sample firms are informal, 17.8 percent of the sample hold some form of license or registration document.
- 60.2 percent of unregistered firms are unaware of their illegality (40.1 percent are unaware of the need to register and 20.1 percent believe it is not required). Nonetheless, 36.6 percent of firms with no license acknowledge their illegality by citing reasons for informality relating to expense, complexity, being anti-state, or that the registration is in process.
- There is a gender bias in the sample, with 53.1 percent of firms led by men and 46.9 percent by women. 20.1 percent of female-led firms cite survival reasons for operating, compared with only 8.0 percent for males. Nonetheless, female-led firms also have a substantial share of voluntary informal participants, with 18.6 percent wishing to earn more, and 17.8 percent seeking greater independence.
- 74.3 percent of managers have only primary education while 12.1 percent of the sample is potentially illiterate with little or no formal education. For those managers who completed the last years of

secondary school, 60 percent cite voluntary reasons for operating informally, almost double the level for the sample as a whole.

- 53.8 percent of the sample have a temporary location in public, 13.1 percent have a permanent location in public, 12.8 percent operate from either their or clients' homes, and 18.9 percent have a permanent building or workshop specifically for their business. 50.3 percent of those with a permanent location hold a registration document.
- The median capital stock per worker is zero. The mean capital stock per employee is a mere Mts3.2, little more than US\$130. Urban firms have a higher mean capital stock per employee (Mts3.5m) than rural firms (Mts1.3m). The lowest mean level of capital per employee is associated with "survival firms" while those citing positive reasons for operating informally have higher levels of capital per employee. Firms with a registration document are almost seven times more capital intensive (Mts10.5m) than those without (Mts1.6m).
- A minority of firms (15.2 percent) have clients previously served by a large firm, indicating an ability to compete with larger firms and integrate to some degree into the formal economy.

## **REGISTRATION**

- The greatest determinant of being registered is found to be educational attainment, with a primary education increasing the probability of registration by 8.2 percentage points over those with no schooling or incomplete basic primary education, while secondary education increases the probability by a considerable 25.1 percentage points.
- Manager age is positively associated with the probability of being registered. Experience in the area of work is also positively related to the probability of being registered.
- The enterprise size (the log of the number of workers), the age of the enterprise, and capital stock per worker are all statistically significant and positively associated with having a registration document.
- Operating from home is significantly negatively associated with the probability of being registered, implying that these firms may hide, while operating from firm-specific premises is associated with a higher probability of being registered, both in comparison to an ambulatory enterprise.
- Propensity to register also varies by sector and province.

## **REGISTRATION & PERFORMANCE**

- The estimated effect of having a registration document on labor productivity is of 31.6 to 34.5 percent, controlling for all other possible firm characteristics. This suggests that on average firms choose to register rather than having registration imposed through regulatory enforcement, which would more likely lead to lower labor productivity.
- However, the implied average annual value-added premium to a registered, informal micro-enterprise, is between US\$513 and US\$560 per annum, a particularly small benefit on average.
- Further, within that average effect, there is considerable variation across firms. The three-worker firm has the highest premium to labor productivity from having a registration document while for four workers being registered has a negative impact on labor productivity compared with unregistered firms. The impact also varies across sectors, provinces, gender and the location of the firm. Such heterogeneity implies that the impact of policies are also likely to vary widely across enterprises.
- Nonetheless, those citing survival reasons also have a relatively high potential benefit from being registered, implying that this is not a determinant of whether or not registration can be beneficial.

## ON-GOING POLICY ISSUES

- Since the INE survey took place, a number of reforms have taken place. Most notably, fiscal reforms have been introduced to benefit small tax-payers.
- A simulation of the impact of the new ISPC suggests that a large share of sample firms would be exempt from this tax, but that the effective tax rate for non-exempt firms range up to 236 percent, clearly still representing a punitive tax regime for some firms working with small margins.

## CONCLUSIONS

- The literature on informality and the issues raised in interviews suggest that the trade-off of costs and benefits to formality is indeed relevant, and that the current system is seen as offering insufficient benefits to formality for a considerable cost. This suggests a need for action on the government's part to not only lower business registration costs but also to improve the environment for firms which do operate formally.
- Nonetheless, the analysis suggests that even for informal enterprises, there is a benefit to being registered. This seems likely to relate to increased legitimacy which may allow firms to concentrate more on their business than evasion strategies, If firms which are registered can be guaranteed to carry on with their business without demands for informal payments, this in itself might constitute a benefit to formality.
- However, although the mean effect is positive, this hides considerable variation across the enterprises, particularly in terms of sector, firm size and education level of the manager. As such, it appears that holding a registration document is in the interests of some enterprises but not others, suggesting that policy impacts will also vary across firms.
- At a more basic level, the analysis suggests that education is an important determinant of whether or not a firm holds a registration document. While education investment is on-going, this highlights the importance of simplifying and lowering the costs associated with registration in the short-term.

Finally, the simulation of the impact of the new small taxpayers tax (ISPC) suggests that although a large share of sample firms would be exempt, and would therefore benefit from reduced official costs of formality, the range in effective tax burdens for those not exempt is large, implying that some firms might be liable for as much as 230 percent of their profits. Again this implies the need to recognize differences within the informal economy, and the potential impact this might have on firms in terms of their willingness to declare sales above the lower threshold level if indeed they reach the point of being formal and registered for taxes.

# 1. Introduction

This report presents an empirical analysis of informality in Mozambique with a view to informing policy discussion on this important aspect of the economy. The analysis employs the most recently available government data to examine the characteristics of a sample of informal economic operators, highlight the differences between different types of informal firms, and estimate performance differences within the informal sector which relate to micro-firm business registration. It also discusses informality in the context of a trade-off of costs and benefits to formality at the enterprise level, and the potential impact of current policy measures on that balance. This has implications for the PARPA II goal of increasing formalization, suggesting the need to encourage enterprise expansion and investment through a focus on increasing the benefits to formality in addition to reducing the costs, while putting less emphasis on attempts to raise tax revenues from these micro firms.

## CONTEXT

Doubts are frequently raised about the impact on employment and incomes of recent impressive economic growth rates in Mozambique. These are generally attributed to large capital intensive “mega-projects”, a post-conflict growth rebound and large flows of foreign aid, with the implication that growth has benefited only a small share of the population.<sup>2</sup> Job creation is thought to be weak, a low share of employment is in manufacturing where there is more value added, and an increasing share of output is from the service sector, much of which is informal.<sup>3</sup> Policy discussion has therefore increasingly centered on private sector development: the policies required to encourage investment, enhance productivity growth, increase exports and ultimately stimulate employment and incomes. A major factor is the business environment, with an important consequence of a poor business environment and burdensome business regulations being a large informal sector.

Although informal activity is difficult to measure, the INFOR survey on which this analysis is based suggests that 75 percent of the economically active population is employed informally in Mozambique (INE, 2006). Ministry of Planning and Development (MPD) estimates using national accounts data suggest that informal activity represented 41 percent of GDP in 2003 and 40 percent in 2004, (MPD, 2009).<sup>4</sup> This is in line with other estimates which put informal activity at 42.4 percent of GDP in 2002/03.<sup>5</sup> Further, Mozambican enterprise census data reveals that the median firm in Mozambique has only two workers, while 78.1 percent of firms have up to only five workers (GoM, 2004a). Many of these firms are likely to be informal at least to some degree. Informality on such a scale demands attention in economic policy design.

The policy relevance is further underlined by recent World Bank enterprise survey evidence which suggests that informal competition is the principal constraint facing businesses, ahead of other factors

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<sup>2</sup> See World Bank (2009), for example.

<sup>3</sup> See Fox and Gaal (2008).

<sup>4</sup> This is broadly based on GDP data excluding the mega-projects and estimates of the share of informality within each sector although the source of these estimates is unclear.

<sup>5</sup> See Schneider (2007). He uses two methodologies (the DYMIMIC and currency demand methods) to arrive at estimates of 40.3 percent of GDP in 1999/00, 41.3 percent in 2001/02, and 42.4 percent in 2002/03. These are summarized below.

including access to finance, taxes, and other common complaints in the private sector (World Bank, 2009). While this could reflect improvements in other areas of government policy, and may also refer to the informal practices of formal firms, it nonetheless highlights the importance of an improved understanding of the informal sector and its characteristics.<sup>6</sup>

Improving the business climate to increase formalization is one of the principal challenges presented in the government's second Action Plan to Reduce Absolute Poverty (PARPA II), under the economic pillar. However, despite increasing attention, there are few in-depth analyses of informality in Mozambique. Further, despite the stated government desire to formalize the private sector, the steps required are not clear. Although policies to improve firm-level efficiency, promote productivity growth and integrate the national economy are important it is also important to recognize the heterogeneity of informal firms and the mechanisms through which policy might impact the firm decision on whether or not to operate informally.

Further, it is important to understand why greater formalization might be desirable. While the government tends to focus on raising revenues, where micro informal firms are concerned, the benefit from formalization is more likely to be the secondary effects of allowing enterprises to operate legitimately, and thus potentially raising their productivity and ability to integrate more deeply with the national economy.

But as is now widely understood, informal activity plays at least two distinct roles in a developing economy: i) providing a source of survival income to low-income and frequently unskilled individuals, and ii) representing an active and potentially competitive component of the productive sector. This requires a balance of the potential for greater employment and productivity growth of the more productive firms with reducing the vulnerability of those working informally out of necessity.

Among more competitive firms it is particularly important to examine the enterprise-level trade-off of the costs and benefits of informality. If informal enterprises are small and reluctant to expand due to bureaucratic barriers or the need to escape the attention of corrupt officials, this might be altered by reducing the costs and increasing the benefits of operating a small, formal business. However, even if the legal costs of operating formally are reduced, what about unofficial costs, and what are the actual benefits to operating formally? Raising the benefits in relation to the official and unofficial costs of formality will encourage greater formality, thus permitting greater firm expansion and employment growth. The aim should be to achieve enterprise growth with assistance from, and not in spite of, government policy.

## **METHODOLOGY**

This study is formed of three main elements. The first reviews the literature on informality to better understand the concept, commonly understood as a cost-benefit tradeoff, the main elements of which are discussed for Mozambique. The second main element is analytical and employs data from INE's 2005 household survey of informal employment (INFOR) to give a descriptive analysis of the characteristics of informal firms and how these vary across and within sectors. Although the sample is principally based on what are legally defined as informal firms, some of these have some form of legal documentation. This permits an analysis of the determinants of holding a registration document and any impact this has on

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<sup>6</sup> Note that the analysis in this study includes only informal firms and therefore is unable to deal analytically with the issue of informal practices, such as the use of informal import channels or carrying out transactions off the book.



enterprise performance, despite operating informally. This helps point to the potential costs and benefits of full formalization. The third major element of this study is a discussion of recent small taxpayer reforms and a simulation of their impact on the INFOR sample of enterprises.

## **KEY FINDINGS**

The principal finding of this analysis is that, controlling for as many characteristics as possible, on average there is a productivity premium from holding a registration document, even though all sample firms are informal in the strictest sense. Based on interview and discussion, this is interpreted to reflect a degree of legitimacy conferred on registration document holders, allowing them to concentrate on their business rather than on evasion techniques. This would suggest that reducing the costs of formality, formal and unofficial, might be enough to encourage greater formalization.

While the mean effect is positive, this hides considerable variation across the enterprises, particularly in terms of sector, firm size and education level of the manager. As such, it appears that holding a registration document is in the interests of some enterprises but not others.

At a more basic level, the analysis suggests that education is an important determinant of whether or not a firm holds a registration document. This may be due to a greater understanding of the rules and regulations or an increased level of productivity which is further increased by holding the registration document. Importantly, 60 percent of the sample enterprises are unaware of their illegal status. Nonetheless, 40 percent implicitly acknowledge their illegality.

Finally, the simulation of the impact of the new small taxpayers tax (ISPC) suggests that although a large share of sample firms would be exempt, the range in effective tax burdens for those not exempt is large, with some firms liable for as much as 230 percent of their profits. Again this implies the need to recognize differences within the informal economy, and the potential impact this might have on firms in terms of their willingness to declare sales above the lower threshold level if indeed they reach the point of being formal and registered for taxes. Nonetheless, the ISPC appears to be a step in the right direction

Further effort to develop more explicit benefits to operating formally, or perhaps the ability to operate free of unofficial costs once registered might also increase formality. This interpretation emerges from the analysis and also interviews. This implies the need not only for simplification, as is already taking place, but also greater clarity and awareness regarding the obligations of enterprises and potentially a change in the government approach to the informal economy.

The remainder of the study is organized as follows: Chapter 2 discusses the concept of informality; Chapter 3 presents the cost-benefit framework thought to operate at the enterprise level, applied to the case of Mozambique; Chapter 4 summarizes informal enterprise characteristics using the INFOR data, Chapter 5 analyses the determinants of being registered; Chapter 6 analyses the productivity impact of holding a registration document; Chapter 7 discusses on-going policy issues with a simulation of the impact of the ISPC on informal firm tax liabilities; Chapter 8 summarizes and concludes.

# 2. Background

## INFORMALITY DEFINED

Despite a vast literature on informality, it is not a straightforward concept to define. The definition most commonly employed regarding private sector development refers to legal activities creating value-added which are not fully compliant with tax, registration or labor legislation. This is the definition adopted here which is in line with the INE (2006) definition, that formal firms must both be registered with the finance administration and in possession of an official registration document.

Even within this definition, activities vary widely, from home-based services and production, to street sales and market stalls, as well as workshops and restaurants. While generally micro in scale, this is not always the case. What is common to informal activity is a lack of formal recognition, with potential implications for the performance potential of these enterprises.

Although “informal sector” is a commonly used term, this is more for its simplifying nature than its descriptive accuracy. To talk of the informal sector suggests something separate from the rest of the economy, or a dual market.<sup>7</sup> In practice, formality and informality are less likely to be an ‘all or nothing’ decision than one of degree, depending on which rules and regulations are followed by an enterprise. The “informal sector” is therefore increasingly understood as an integral sub-component of the private sector, with a very blurred distinction, if any, between formal and informal firms. This is also due to the high level of market linkages and the ability for formal firms to engage in informal practices.<sup>8</sup> This study focuses principally on small and micro firms which are informal in the legal sense but with potentially strong linkages to legally registered firms.<sup>9</sup>

## INFORMALITY IN DEVELOPING ECONOMIES

To put things in an international context, a study of the average size of the informal economy across 145 countries for 2002/2003 puts Mozambique at 42.4 percent of GDP (Schneider, 2007). This is above the average for 96 developing countries (38.7 percent) and compares with 40.1 percent of GDP in 25 transition countries, 16.3 percent in 21 OECD countries and 22.3 percent in three communist countries.<sup>10</sup> Although below the average of 43.2 percent for 37 African economies in 2002/03, Mozambique

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<sup>7</sup> The dual market concept goes back to the Lewis Model (1954) which describes a “traditional” (agrarian) sector which provides a holding ground for workers awaiting entry into the “modern capitalist” (commercial) sector.

<sup>8</sup> Maloney (2004) in particular advocates an understanding of “informality” as simply an unregulated micro entrepreneurial sector rather than a disadvantaged, segmented sector. Indeed, it seems more realistic to view informality as a continuum of states, ranging from completely informal (non-compliant on every count) to completely formal (fully compliant) with various degrees of informality in-between depending on degree of compliance with tax-laws, registration requirements and labor legislation. Nonetheless, the dichotomous concept can be useful for simplification in descriptive or analytical discussion.

<sup>9</sup> Direct measurement of the informal economy is hindered by its very nature, forcing studies to rely on imprecise proxy measures. It is not the purpose of this study to analyze the various methodologies employed, in the interests of context it is useful to compare some cross-country estimates of the size of the informal economy.

<sup>10</sup> Schneider’s (2007) method consists of an econometric estimation of relative informal sector shares across countries using the DYMIMIC method. This treats hidden output as a latent variable, and uses several (measurable) causal variables and indicator variables to predict informal share. These include measures of the average and marginal tax rates, inflation, real income and the degree of regulation in the economy as well as changes in the (male) labor force participation rate and in the cash/money supply ratio, calibrated by using estimating currency demand across countries to proxy for market transactions. Although open to criticism, it nonetheless provides some indication of the approximate importance of the informal economy.

represents the median level of informality for these countries.<sup>11</sup> Perhaps importantly, informality is estimated to have increased in these countries since 1999.

Among SADC countries, Mozambique has a considerably lower informal share than Zimbabwe, Tanzania, DR Congo and Zambia, but well above the reported SACU countries of South Africa, Botswana, Lesotho, and Namibia, as reported in Table 2.1. This again places Mozambique near the middle of the group.

**TABLE 2.1 SADC COUNTRIES ESTIMATED INFORMAL SHARE OF GDP**

	Informal Share of GDP
Angola	45.2%
Botswana	34.6%
Congo, Dem Rep	50.1%
Lesotho	33.3%
Madagascar	41.6%
Malawi	42.1%
Mauritius	-
<b>Mozambique</b>	<b>42.4%</b>
Namibia	33.4%
Seychelles	-
South Africa	29.5%
Swaziland	-
Tanzania	60.2%
Zambia	50.8%
Zimbabwe <sup>1</sup>	63.2%

Source: Schneider (2007)

Whether this middling performance is read as good or bad, the share is high in relation to GDP. The Mozambican authorities further estimate that 68 percent of the urban workforce and 87.5 percent of the rural workforce (INE, 2006) operates informally. This compares with International Labor Organization (ILO) estimates of 57 percent of urban employment in Madagascar, 56 percent in Tanzania, and 90 percent of total non-farm employment in Uganda (ILO, 2007). Although all of these countries vary considerably in terms of economic structure and institutional environment, the large share of informality is clearly a response to some common factors across poor countries. These are discussed below with a view to providing context to the analysis of Mozambican data.

## LITERATURE ON MOZAMBIKAN INFORMALITY

The existing literature on informality in Mozambique is limited. A World Bank (2009) enterprise survey includes some information on perceived obstacles to doing business for firms which are unregistered for tax purposes although the majority are formal. There are few major differences in the perceptions between formal and informal firms, the only striking difference being on labor market rules, which 75 percent of formal microfirms found a major or very severe burden compared with 52 percent of informal firms who are presumably able to avoid these regulations. Similar shares of formal and informal firms complain

<sup>11</sup> Africa is taken here to include North Africa.

about the difficulty of getting information regarding registration (76 and 68 percent, respectively), although similar levels also state that it was little or no obstacle (18 and 29 percent). As shall be seen below, the issue of information on registration procedures appears to be important for the sample of informal enterprises analyzed here, while labor law compliance may figure in the calculation on whether or not to expand and formalize.

Another study presents case studies of informal sector operators with a view to discussing the possibility of encouraging greater formalization (Jaiantilal and Paulo, 2007). This analysis confirms large variations among informal operators in terms of their skills and reasons for operating as they do. It also suggests ingenuity on the part of the entrepreneurs despite numerous bureaucratic barriers and a reported lack of institutional support i.e. that these enterprises operate in spite of rather than with the help; of the state. However, their principal conclusion is the need for more detailed analysis to better understand the motivation and constraints of informal business operators.

Francisco and Paulo (2006) focus on the informal economy and social protection. They believe that the current social protection institutional framework has no social relevance and that informality is a necessity given the weak coverage of formal social protection mechanisms. As such, they express a desire to see the legal framework altered so that currently informal operations can become formal, and the need for an “informal strategy”. This is something which the current study might contribute to.

According to a recent World Bank report, one reason the self-employment sector has grown in Mozambique is the low education of the labor force.<sup>12</sup> Only 17 percent of urban wage workers (including casual workers) in 2002 had less than five years of education, but the share was 55 percent in the informal sector. One-third of wage workers in private wage jobs had completed 5 years of primary education, and another third reported full completion of primary education (7 years) or more. Even if the growth rate of urban private sector jobs were to double, few of those now self-employed or working in family firms would qualify for them. And the education requirement for new private sector wage jobs has been increasing steadily.

## **THE FORMAL/INFORMAL COST-BENEFIT TRADEOFF**

The predominance of micro-enterprises and particularly informal micro-enterprises in developing countries is likely to be a symptom of a number of aspects of their economies. These include high transaction costs, high levels of firm risk, weak tax and regulatory enforcement, poor information flows, arbitrarily high and/or complex regulatory barriers, and corrupt officials.

While many informal firms may operate informally out of lack of knowledge about their obligations, underlying most accounts of the informal sector is the concept of a trade-off at the firm level between the costs and benefits associated with registering. This tradeoff is also affected by the probability of detection for informal activity, the scale of the punishment, as well as the probability of punishment if detected, all related to bureaucratic effectiveness.

The principal costs of full formality include the following:

- Initial business registration regulations
- tax requirements

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<sup>12</sup> See World Bank (2008a).

- labor legislation
- health and safety legislation
- licenses

The benefits are less clear but are generally considered to include:

- ability to operate at a larger scale
- access to credit
- access to government and large firm contracts
- access to legal protection through the court system

The relative importance of the costs and benefits of formality are likely to vary across firms depending on:

- firm characteristics (the purpose of the firm, number of workers, sector, capital intensity, human capital, level of integration into markets)
- the operating environment (product demand, market size, urban/rural, degree of competition, transactions costs, degree of firm-level uncertainty and risk, infrastructure access, access to inputs, access to finance, market information)
- government effectiveness (administrative capacity and reach, policies, regulatory enforcement, degree of corruption in the public administration).

As the last of these hints, benefits from formality may also include protection from bribe-seeking officials. This raises an additional important aspect, the underlying motivation of the government. Enterprise regulation is justified to ensure that consumers receive high quality goods from “desirable sellers” with sufficiently high health, safety and/or labor standards.<sup>13</sup> However, these regulations can also be abused, with complex regulations and procedures offering opportunities for extracting bribes by corrupt officials. If simplified regulations allow firms to comply, this may reduce their exposure to such risks. Governments should aim to have enterprises grow with assistance from, and not in spite of, government policy.

In addition to the distinction between competitive enterprises and those simply to provide income, a distinction can be made between those who avoid formality voluntarily and those who are involuntarily informal.<sup>14</sup> Those who voluntarily operate informally are believed to do this to reduce their costs, while involuntarily informal firms would like to formalize but are unable to meet the requirements. Clearly both elements can exist in parallel, something examined using the Mozambican data below.

Voluntary and involuntary informality can each be associated with an expected performance impact:

- i) If the costs of registration outweigh the benefits conferred, firms are likely to remain unregistered to the extent that enforcement allows it, thus lowering their production costs through the evasion of taxes and other bureaucratic costs and allowing them to undercut formal firms. In this view, registered firms are only those who were spotted by the authorities and induced to register and are therefore at a disadvantage compared with similar informal firms. These firms have higher costs, lower firm profits and reduced competitiveness.

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<sup>13</sup> This is the theory of public interest, according to which enterprise regulation by the state is required in order to achieve “socially superior outcomes”, whereby governments provide registered firms with “official approval” to ensure public safety (Djankov et al., 2002).

<sup>14</sup> See Loayza et al., (2009), for a more detailed discussion of this aspect of informality.

- ii) On the other hand, the benefits to operating formally may outweigh the costs, making formalization a desirable step for micro-enterprises able to do so, by enabling them to reap economies of scale, gain access to credit and legal protection and avoid paying bribes. Being registered may also convey legitimacy, perhaps giving access to a larger clientele. These arguments would suggest that a performance premium is conveyed on those who operate formally.

Policy to encourage formality and firm growth must therefore act on these incentives. Do they make registration more attractive or simply less costly? How does government see its role in working with the informal sector?; is the intended outcome simply to control, sanction and generate revenue, or to improve efficient allocation of resources and effort as well as providing opportunities to earn incomes?

## CONSEQUENCES

Given government objectives to increase formality, it is important to understand the potential consequences of informality. These can be discussed at the firm-level and for the economy as a whole.

### Firm-level Implications

The impact of informality at the firm level depends to some extent on whether registering firms benefit or not. If the benefits of registration outweigh the costs, registered firms would be expected to have better performance, *ceteris paribus* and the question would be why other firms do not register. Existing evidence seems to suggest this is the case in Latin America although in Sub-Saharan Africa the results depend on the characteristics of the entrepreneurs and the firm.<sup>15</sup>

A recent study finds that in Southern Africa (South Africa, Botswana, Namibia) informal firms are less productive than their formal counterparts.<sup>16</sup> However, in Eastern Africa (Uganda, Tanzania, Kenya, Rwanda) the distinction is smaller. While they hypothesize that this may reflect the characteristics of the entrepreneurs in the Southern African countries, with a large proportion representing survival-type, or involuntarily informal firms, in eastern Africa they find more entrepreneurial firms with educated managers and a greater likelihood of one day becoming a formal firm, suggesting that an easing of the business environment might help these firms.

If, in contrast, the costs of registration outweigh the benefits conferred, firms which manage to remain unregistered will be more competitive and efficient than those who are induced to register. While there is

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<sup>15</sup> Perry et al. (2007) find that “firms that started operations informally... and those located in regions or sectors where informality is more prevalent exhibit, on average, much lower productivity than their peers”. Echevin and Murin (2009) find that informal firms are on median up to ten times less productive than formal firms for Benin, Mali and Senegal Fajnzylber et al. (2007) analyze the impact of formal “participation” in various institutions on firm performance using panel data on Mexican micro-firms. They find that firms which participate in credit markets, receive training, pay taxes and belong to business associations exhibit significantly higher value-added than other firms, even after controlling for the various factors associated with participation in those institutions (Fajnzylber et al., 2007). In particular, they find that profits increase by between 22 percent and 66 percent for firms which pay taxes. McKenzie and Sakho (2007) also find that tax registration (closeness to a tax office) leads to higher value-added on average although further analysis of enterprises by size indicates that for firms with one worker only or five employees or more, the benefits of registration are lower than the costs. This is based on a study for Bolivian micro-enterprises using the distance from a firm to the nearest tax office as an instrument for the time and information costs involved in tax registration. Controlling for firm, owner and location characteristics, they argue that “this [distance] affects the information a firm has about registration, but does not independently affect value-added” (McKenzie and Sakho, 2007).

<sup>16</sup> See Gelb et al (2009).

little evidence of this from other studies, the complaint from the private sector in Mozambique that they are being competitively undercut would suggest this might be the case.<sup>17</sup>

### ***Aggregate effects***

The aggregate effects of informality are for the most part the sum of microeconomic impacts. If formal compliance costs are punitive and informal firms are less productive, then this has consequences for aggregate productivity. The misallocation of labor to inefficient informal businesses, and inadequate investment brought about by the incentives to remain small are both likely to lead to aggregate inefficiencies. They are also likely to lead to inequities in incomes as well as poor employment security and working conditions.

Informal firms are also induced to remain small, thereby failing to attain their most efficient size, potentially leading to a “missing middle” in the firm size distribution. This is potentially further magnified as a consequence of the benefits of formality to larger firms which may have greater access to formal credit markets, economies of scale and potential benefits from access to public goods such as legal protection. In a situation where a substantial part of the economy is unable to access these advantages, we might expect the bifurcation in firm sizes to increase with negative implications for employment creation and competition.

Nonetheless, it is important to highlight the alternative view that informal activities may be responding to a demand for urban services and small-scale manufacturing, adding “a dynamic and entrepreneurial spirit” which might lead to more competition, higher efficiency, and limits on government activities in a situation where an economy is highly regulated (Schneider and Enste, 2000). Much will also depend on the share of informal earnings which are spent in the official economy and which pass through the formal banking system.

Finally, from the government point of view, the overriding concern with informality is the effect on tax revenues. However, the magnitude of this effect depends very much on the tradeoff between revenue created by these very small firms and the huge administrative costs involved in trying to collect that revenue from so many small enterprises.<sup>18</sup> This aspect is examined in more detail below, however the general message is that micro firms are an inefficient source of tax revenues from the government point of view whereas expanding firms may lead to more efficient revenue sources in the medium to long term.

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<sup>17</sup> It may also be that the firms undercutting are not informal micro-enterprises but larger firms carrying out informal activities, that is, off their books. This is harder to analyze.

<sup>18</sup> See Bolnick and Byiers (2009).

# 3. Mozambique Informality

## Costs and benefits

This chapter examines the cost-benefit tradeoff more closely, with direct reference to evidence from Mozambique.

### FORMALITY COSTS

As de Soto (1989) puts it, enterprises “evaluate their relationship with formal activity” at two stages: “when they enter it and when they decide to remain in it”. The costs associated with entry and remaining formal include business registration costs and subsequent compliance costs for tax requirements, labor legislation, health and safety legislation and licensing laws. Each is taken in turn below.

### Startup Costs

Startup costs relate to the time and money required to comply with procedures to start and register a company.<sup>19</sup> Evidence shows these costs are relatively higher for developing economies and are associated with higher levels of corruption and larger informal economies across economies, but not better quality public goods.<sup>20</sup>

The World Bank’s 2009 Doing Business report states that it takes 10 procedures and 26 days to start a business in Mozambique. Although a considerable improvement on 2006 when it required 13 procedures and 113 days, this is slow relative to other countries, as evidenced by the low ranking of 144 out of 181 countries. Further, the associated cost is estimated at 22.9 percent of annual national per capita income, also signifying an important impediment to small business operators. Although the Doing Business is recognized to have shortcomings, it nonetheless illustrates the scale of the issue.<sup>21</sup>

Another recent study examines licensing procedures for operating in a range of sectors in Mozambique. It concludes that in 2007 there were still many more licenses than were logically necessary, that these were unnecessarily complex and that “there would be little additional risk to the public if businesses could start up immediately after registering, and then face periodic inspections after start-up” (Aaron and Reisman, 2007). Reforms are on-going to further reduce the level of registration and licensing required for a business while recent steps to computerize the registration system may already have helped to further simplify procedures.

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<sup>19</sup> These commonly include screening procedures such as checking for uniqueness of the name, obtaining licenses and filing with the appropriate ministry or ministries; tax-related requirements such as filing with the Ministry of Finance, registering for all the relevant taxes and issuing a start notice to the tax authorities; labor and social-security requirements such as filing with the Ministry of Labor, registering for health and medical insurance, notarizing labor contracts; safety and health requirements such as obtaining authorization to operate from the Ministry of Health as well as fire, safety and hygiene certificates; and environment-related requirements such as environmental approval certificates and passing inspections (Djankov et al., 2002).

<sup>20</sup> Based on a study by Djankov et al. (2002) across 85 developed and developing countries.

<sup>21</sup> To make data comparable, the Doing Business Report assumes the business is a limited liability company conducting general commercial activities in the largest business city; it is 100% domestically owned, with a start-up capital of 10 times income per capita, a turnover of at least 100 times income per capita and between 10 and 50 employees; and it does not qualify for any special benefits, nor does it own real estate.” (World Bank, 2008). This implies that the times recorded are not necessarily for all firms of all sizes and sectors given that the majority of firms in Mozambique are individual proprietorships, micro and have a very low start-up capital. Nonetheless, the data is included for illustrative purposes.



## Taxes

Across developed and developing countries, tax and social security burdens are one of the main causes of the informal economy.<sup>22</sup> However, while higher tax rates are not found to be associated with a larger unofficial economy<sup>23</sup>, higher *effective* tax rates in the formal economy are.<sup>24</sup> This latter finding hints that informality may relate to how taxes are applied rather than their rates.

A study on effective tax rates across firms of different sizes using Mozambican enterprise survey data from 2006 suggests an inverted-U relationship between tax burden and firm size: small firms tend to bear a low tax burden through evasion or exemption, while large firms minimize taxes through tax planning and exemptions provided under the Code of Fiscal Benefits.<sup>25</sup> In contrast, middle-size firms cannot easily escape the tax net nor afford the expertise required to engage in sophisticated tax planning. While these findings are only indicative of inequities and are based on a small sample of firms, they provide evidence that the tax system may create incentives for firms to remain below a certain “visible” size and operate informally.<sup>26</sup>

An enterprise survey of 192 formal firms in Mozambique found that 47 percent of firms cited tax administration as a major or very severe constraint to doing business (World Bank, 2003). A more recent World Bank survey found that tax rates were rated among the top three constraints for 36 percent of firms, behind only informal competition and access to finance (World Bank, 2009).

Important steps are being taken to reduce the tax burden on small and medium enterprises, specifically with the small tax payer tax (ISPC), discussed and analysed at the end of this report. The tax authorities are also extending the network of tax offices, something which should also lower the opportunity cost of physically going to a distant tax office to pay taxes, also an important cost relating to taxation.

## Labor Legislation

Other formal costs relate to labor regulations and include a minimum wage, social security contributions and employment laws governing contracts and indemnity costs etc. Evidence again suggests that poorer countries regulate labor more heavily than richer countries and that more regulation is associated with higher levels of informality, lower levels of labor force participation and higher unemployment, themselves both clearly potential drivers of informality.<sup>27</sup> The impact of this can be high wage differentials between the formal and informal sectors. For example, a study of Benin, Mali and Senegal finds that median wages in formal firms are three to four times higher than informal wages, serving to illustrate that labor costs may be an important ongoing cost for a firm operating in the formal sector.<sup>28</sup>

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<sup>22</sup> See Schneider (2007), for example.

<sup>23</sup> This is from Friedman et al. (2000). Instead they claim to find the opposite although they concede that this relationship ceases to be significant once per capita incomes are controlled for. This is based on an examination of the estimated informal share of the GDP across sixty nine countries, of which thirty one are developing but only four African (Friedman et al., 2000).

<sup>24</sup> This result is due to Johnson et al. (2000), where the effective tax rate is the ratio of taxes paid to income rather than the legislated marginal tax rate and they measure informality as the level of output hidden for tax purposes.

<sup>25</sup> See Byiers (2009).

<sup>26</sup> The analysis can only be treated as indicative as the observed tax differentials could reflect legitimate and systematic differences in firm structure, such as deductions due to capital costs, interest expenses, and loss carry forward among large firms, and the policy of exempting very small incomes from tax through the threshold level. In addition, recent tax changes for small companies, including the ISPC are likely to change the way the tax structure affects incentives for small firms, discussed further below.

<sup>27</sup> See Botero et al. (2003).

<sup>28</sup> See Echevin and Murtin (2009)

In Mozambique, the World Bank (2003) cites that 37 percent of firms retained more workers than was optimal. New labor legislation was introduced in 2007 introducing more flexible hiring and firing rules, relaxed restrictions for temporary fixed term contracts, streamlined foreigner recruitment and new conflict resolution procedures (World Bank, 2009). Labor regulation was one of the least cited constraints in the 2008 World Bank enterprise survey, ranking 15<sup>th</sup> out of 16 issues. Nonetheless, the World Bank's Doing Business Report suggests that Mozambique ranks poorly on the rigidity of the labor law and firing costs, at 166 out of 181 countries. This suggests that labor conditions remain strict in relation to other countries despite the labor law reform, and may imply that some firms avoid the restrictions either by limiting employees to temporary contracts or by avoiding contracts altogether and adopting informal practices, something frequently raised anecdotally.

## **Opportunity Costs**

There are also opportunity costs associated with operating formally. These are likely to be higher for smaller firms given that time and information required for completing forms and acquiring the relevant documentation are similar, if not relatively higher, for very small firms. Perhaps more importantly in the context of a country such as Mozambique, even for firms which wish to comply, enterprises located a long distance from a tax office incur considerable costs in terms of travelling to ensure documents are in order. Distance from a tax office may also be related to the amount of information available on firm tax and registration obligations, and therefore on ability to register formally, a point highlighted by McKenzie and Sakho (2007) in their study on Bolivia.

## **INFORMAL BENEFITS**

Alongside the costs of formality are the benefits of informality. These are the inverse of the costs of formality. Thus informal firms are thought to lower their production costs by avoiding the costs listed above. This may imply competitiveness with larger firms, or simply small productive operations to exist which otherwise would not survive, providing necessary "survival" income to individuals who would otherwise have none, as discussed earlier.

## **FORMAL BENEFITS**

On the other side of the tradeoff, a range of benefits to formality are often assumed in the academic literature although empirical evidence is notably scarcer. Principal among cited benefits are: i) the ability to take advantage of economies of scale; ii) the legal protection and enforceability of property rights; iii) increased access to credit; and iv) the possibility of increasing productivity due to greater legal protection and access to other public goods such as public infrastructures and government support programs.<sup>29</sup>

In this view, some degree of formality might be considered an essential "input cost" for a firm to grow in the long-term with the long-term benefits therefore also larger.<sup>30</sup> It is also suggested that in the absence of strong market forces and market signals, registration may play an important signaling role by giving

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<sup>29</sup> Formality can also be recast in terms of how much a firm wishes to participate in societal institutions such as the treasury, social security, the legal system, the banking system, trade organizations etc. See Levenson and Maloney (1998).

<sup>30</sup> Many of these factors are inter-related. Credit availability as a determinant of informality might usefully be linked to the concept of informality as a question of potential economies of scale, so that the scale of informality would depend not only on the relative benefits to be gained from economies of scale, but also the availability of credit to allow the necessary investments to reap these gains. Similarly, the scale benefits may also interact with the degree of legal protection to determine the choices made.

registered firms an “institutional standing in the eyes of law-enforcing agencies, consumers, suppliers, police and other key actors” (Sleuwaegen and Goedhuys, 2002). This may have positive impacts on firm performance and is likely to be important in the context of widespread petty corruption.

## **Economies of Scale**

It is generally true that informal firms are small and therefore do not benefit from economies of scale. However, in the sample used in this analysis, firm sizes range from one to 78 workers indicating a wide range of firm sizes and therefore the potential that some larger firms do benefit from economies of scale, depending also on the nature of the sector.

## **Legal Protection**

In terms of legal protection, in the World Bank’s Doing Business Survey, measures of the efficiency of the judicial system relating to commercial dispute resolution suggest that the number of procedures, the time taken once the process gets going and the high cost mean most firms will not benefit from the judicial system. Further, while informal firms may not be able to rely on courts, generally they still have recourse to police protection in developing countries, the crucial factor perhaps being relative difference in vulnerability to crime in the formal and informal sectors.<sup>31</sup>

## **Credit Access**

Credit access in Sub-Saharan Africa is generally limited to all except large firms, thus limiting the importance of credit-access as a determinant of formality.<sup>32</sup> Mozambican enterprise data suggest that credit access is very much related to firm size, suggesting that access to credit is tight for firms whether or not they are registered.<sup>33</sup> Further, micro-credit is generally available for very small informal operators, suggesting, if anything, that credit access may be greater for small businesses.

Nonetheless, bank credit has been increasing in recent years. One estimate cited in interviews suggests that loans to the private sector increased by 39.4% in 2008 reaching USD1.7 billion.<sup>34</sup> Within this, credit to tourism grew by 41 percent, trade by percent and industry by 24 percent. Further, there are a number of large donor programs targeting SME development, either recently or imminently to be launched (World Bank, IFC, Danida, USAID, AFD, GTZ/KFW, etc). Nonetheless, credit to domestic firms of 14 percent of GDP is only slightly higher than half the sub-Saharan Africa average (26 percent) and significantly lower than the average for low-income countries (18 percent). Further, the geographic distribution of banking facilities remains concentrated with almost half of all bank branches in 2009 located within the greater Maputo-Matola area.<sup>35</sup>

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<sup>31</sup> In fact, analyzing detailed manufacturing firm data from six African countries, Bigsten et al. (2000) find that flexible, relational contracts rather than formal legal contracts are the norm between firms. They also find that recourse to lawyers and courts is only used by very large firms while other firms prefer negotiation. In such cases, the distinction between formal and informal firm levels of legal protection will be minor, thus reducing the benefit from formality.

<sup>32</sup> See Bigsten et al. (2003), for example.

<sup>33</sup> See Byiers et al., (2008), World Bank, (2009), DNEAP & KU, (2006).

<sup>34</sup> Information provided in interview by Fion de Vletter, from a forthcoming report on the financial sector in Mozambique. Bank of Mozambique figures apparently indicate an even higher increase in lending from June 2008-June2009 of 53%.

<sup>35</sup> Information provided in interview by Fion de Vletter, from a forthcoming report on the financial sector in Mozambique.

## Formal Contracts

One of the potential benefits of formality may be the ability to transact with formal firms, integration into international markets and eligibility to apply for government contracts. This is examined more closely in the present study.<sup>36</sup> Indeed, the tax system is often thought to provide incentives to become formal if a firm wishes to supply other formal firms, particularly through VAT and the ability to collect VAT to offset VAT paid on inputs. While better incentives may be created by the tax system, the relative costs for small businesses may still be very high and actually create greater divisions between informal and formal firms rather than encouraging integration into the formal sector.<sup>37</sup>

This discussion ties in with the important issue of tax morale – the motivation of the population to pay taxes. Individuals and businesses may only be induced to pay taxes when they see some form of direct benefit, and when the government network extends sufficiently to provide them services. As Torgler and Schneider (2007) put it, “If citizens perceive that their interests (preferences) are properly represented in political institutions and they receive an adequate supply of public goods, their identification with the state increases, their willingness to contribute increases”. If the benefits are not clear, a potentially vicious circle exists, with poor compliance reducing the resources available for governments and therefore the motivation to pay taxes. It must therefore also be recognized as a potential factor in determining the scale of the informal sector.

## INFORMAL COSTS

While the evidence on benefits from formality is ambiguous, more empirical evidence exists in relation to the costs of informality. An informal firm incurs costs associated with hiding from the authorities which are likely to create productive distortions by focusing manager attention on state evasion rather than enhancing production and potentially incurring bribes rather than taxes.<sup>38</sup> Further, rather than growing it may be that a firm is forced to remain small because of the desire to operate informally. This implies that informality is not without cost, but simply that these are viewed by the firm manager as being less than the costs of being formally registered.

## REGULATORY ENFORCEMENT

As discussed above, the firm-level decision on whether or how informally to operate also depends on the probability of detection and punishment. Much will depend on the location of the business, whether it is rural or urban, and whether or not it is fixed in a public place or not.

In addition to firm characteristics, government capacity also clearly has an important role in determining the size and performance of informal enterprises. As will be discussed below, regulatory enforcement in Mozambique is improving, in particular with the establishment of the Revenue Authority (*Autoridade Tributária*) and expansion of the tax office network. However, with so many micro informal firms, the administrative burden of capturing revenue from these enterprises is likely to be high.

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<sup>36</sup> In most countries, administrative norms require that a firm be formally registered in order to export goods, so that those firms in the informal sector, even where capable of exporting, are unable to do so. The situation is similar for the case of state contracts which, anecdotally, provide a major source of income to the private sector in developing countries with high levels of aid and state expenditure as a proportion of GDP.

<sup>37</sup> Although tax reforms for small businesses are underway, whether or not they have the desired impact remains to be seen. See Bolnick and Byiers (2009).

<sup>38</sup> This is based on a study of Eastern Europe, Johnson et al. (2000), a result which is also confirmed by de Soto (1989) and broadly supported by Dreher and Schneider (2006) in their cross-country analysis of corruption and the shadow economy.

## **OTHER FACTORS**

Finally, it may be that informal firms exist due to a lack of formal employment opportunities, the involuntary informal enterprises. Even if this does not imply that firms are purely for survival reasons, they may be seen as the only means to providing a reasonable income in the absence of suitable employment. Importantly, this may also depend on educational attainment. Those with poor educational attainment may have difficulty finding salaried jobs, while those with higher levels of education may find that they can earn more by operating informally. This is something which is examined below using the sample data.

## 4. Informal Firm Characteristics

If the majority of informal firms exist for survival reasons, this would imply that they have little prospects of growing and providing employment, even with policy reforms to ease registration costs. Their motivation is perhaps not profit-maximizing but ensuring a small but continuous income stream. However, for voluntarily informal firms, one can assume that these are indeed profit-maximizing, and will respond to policy reforms which alter the cost-benefit trade-off, potentially increasing prospective profits and therefore encouraging firm expansion and employment creation. This highlights the importance of understanding the characteristics and motivations of these firms.

### THE INFOR SURVEY

The data employed for this analysis come from the Mozambican National Informal Sector Survey (INFOR), a household survey carried out from July to September 2005. The focus in this study is on a sub-sample of non-agricultural, self-employed entrepreneurs, thus excluding those serving as employees and those reporting agricultural activities as their principal activity. This leads to a sample of 1136 informal enterprises for this analysis.

INE defines a Mozambican firm as formal if i) it is registered either at the provincial level or the finance department (*repartição de finanças*); and ii) is in possession of an official document, either a license (*alvará*) or a registration record (*Ficha de Registro*) (INE, 2006).<sup>39</sup>

Of the 1136 interviewee-owned informal enterprises, 183 report having a registration document of some form, while 953 do not, although all are classed as informal, as reported in Table 4.1. Those with a registration document are those who are registered with a local authority and are classed as “registered” in the analysis below. These firms provided more detailed data, thereby allowing more in-depth analysis below.<sup>40</sup>

**Table 4.1 Firm Sample**

Category	No. of firms
Informal	1136
Informal Registered	183
Informal Unregistered	953

Three analyses are carried out using this sample of firms. The first is descriptive to discuss the principal characteristics of the informal firms. The second analyses the characteristics associated with holding a registration document, and the third, performance differences between firms with and without a registration document.

<sup>39</sup> According to government legislation, micro firms with initial investment of less than \$25,000 and up to 25 workers do not require licensing or authorization but simply to have the registration record. Although incomes up to Mts2500m are not taxed, enterprises are expected to be registered with the tax authorities (from govnet.mz).

<sup>40</sup> Further details of the survey and sample are found in Appendix I.

## SECTORS AND SIZE

The sample employed here covers activities including primary goods processing, textiles and garments, chemicals, metal goods, utilities, trade, transport and hospitality. Each of these sectors has its own specific production characteristics which may impact on the scale at which they operate and the possibility of operating informally. The vast majority of firms in the sample are from the retail and domestic trade sector (final column of Table 4.2) as is the case for the population of Mozambican enterprises (INE, 2004).<sup>41</sup>

Although firm sizes in the sample vary from 1 to 78 workers, as reported in Table 4.2, 76.2 percent of sampled firms are single proprietorships with no additional employees (i.e. 1 worker), 15.8 percent have 2 workers, 4.8 percent have 3 workers and 3.1 percent have 4 workers or more. In comparison, the revised enterprise census from 2004 estimates that 68.7 percent of firms have up to three workers, the remainder having four or more (INE, 2004).

The highest share of one-man firms is in the textiles and garments sector (87 percent of enterprises), while the only sector where one-worker firms are not in the majority is the construction sector. The sectors with the highest share of large firms with 4 workers or more (excluding the two chemical firms), are the non-retail services sectors (restaurants and hotels, transport and other services). These differences may impact on firms' ability to remain informal and also on their productivity, examined below.<sup>42</sup>

**Table 4.2 Informal Firm Sizes by Sector**

	1 worker	2 workers	3 workers	4 workers+	No response	Total	N
All firms	76.2%	15.8%	4.8%	3.1%	0.2%	100.0%	1,136
Primary Sector	54.5%	21.2%	9.1%	15.2%	0.0%	100.0%	33
Food & Drinks	74.3%	20.3%	4.1%	1.4%	0.0%	100.0%	74
Textiles & Garments	87.0%	4.3%	4.3%	4.3%	0.0%	100.0%	23
Wood & Furniture	65.1%	18.6%	4.7%	11.6%	0.0%	100.0%	43
Chemicals & Other Non	50.0%	0.0%	50.0%	0.0%	0.0%	100.0%	2
Metal Goods & Electr.	47.4%	36.8%	5.3%	10.5%	0.0%	100.0%	19
Water Treat & Dist.	100.0%	0.0%	0.0%	0.0%	0.0%	100.0%	1
Construction	35.3%	38.2%	19.1%	7.4%	0.0%	100.0%	68
Wholesale Trade	77.8%	13.0%	3.7%	5.6%	0.0%	100.0%	54
Retail Trade & Dom. R	83.0%	12.5%	3.3%	0.9%	0.3%	100.0%	737
Rest.s & Hotels	57.1%	28.6%	0.0%	14.3%	0.0%	100.0%	7
Transport & Tr. Servi	65.0%	15.0%	10.0%	10.0%	0.0%	100.0%	20
Other Services	70.9%	20.0%	3.6%	5.5%	0.0%	100.0%	55
N	866	179	54	35	2	1136	

## REASONS TO BE INFORMAL

While the principal reason for operating informally discussed in the cost-benefit framework discussed above was cost, there is considerably more variety in the reasons cited by managers for operating informally.<sup>43</sup> As the first row of Table 4.3 shows, across all firms and sectors, the main reason given for

<sup>41</sup> According to the enterprise census, 56.5 percent of enterprises are in the commerce sector, compared with 20.4 percent in hotels and restaurants and just 9.8 percent in the manufacturing sector (INE, 2004).

<sup>42</sup> Appendix II has data on the distribution of firms by sector and province.

<sup>43</sup> The precise question asked was "why did you decide to undertake/develop this business" (Question MNA\_3\_B from the INFOR questionnaire).

operating an informal business is a lack of salaried employment opportunities (44.1 percent of responses). Further, 13.6 percent cite reasons for starting a business explicitly related to survival, such as “to end hunger”, “to support my family”, or “because of poverty”. This further increases the share of firms who might be classified as involuntarily informal to 57.7 percent of the sample.<sup>44</sup>

**Table 4.3 Reasons for Opening Business vs Registration Status**

		Lack of salaried jobs	Survival	Earn More	Independence	Other Choice Reasons	Family Tradition	Other	No response	Total	N
All firms		44.1%	13.6%	16.2%	14.7%	1.1%	3.9%	6.3%	0.1%	100.0%	1,136
Registered		42.6%	12.4%	18.8%	12.4%	2.0%	5.0%	6.9%	0.0%	100.0%	202
Un-registered		44.4%	13.9%	15.6%	15.2%	1.0%	3.6%	6.1%	0.1%	100.0%	934
Why not registered?	Too Complex	15.9%	3.1%	13.0%	16.9%	22.2%	11.8%	1.8%	0.0%	12.8%	120
	Too Expensive	19.0%	14.6%	13.0%	12.0%	44.4%	5.9%	10.5%	0.0%	15.6%	146
	Anti-State	1.2%	1.5%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.9%	8
	In Process	7.0%	5.4%	9.6%	9.2%	0.0%	11.8%	1.8%	0.0%	7.3%	68
	Not obligatory	20.0%	25.4%	19.9%	14.1%	11.1%	26.5%	28.1%	0.0%	20.4%	191
	Don't know if need	34.0%	46.9%	42.5%	46.5%	22.2%	41.2%	49.1%	100.0%	40.1%	375
	Other	2.9%	3.1%	1.4%	1.4%	0.0%	2.9%	8.8%	0.0%	2.8%	26
Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	934
N		501	155	184	167	13	44	71	1	1136	

Source: Author’s calculations using INFOR 2006, aggregating the two categories of “lack of salaried employment in large firms” and “lack of salaried employment in small firms”, creating a new category called “survival” for all responses originally in “other” referring to “poverty”, “survival”, “hunger”, “to feed my family” etc.; and a new category for “other choice reasons” where the response implied another positive reason for choosing, e.g. “I’m good at it” or “I like the work” etc.

Responses associated with voluntary informality include those who cite “to earn more”, representing 16.2 percent of the sample, “to be independent”, 14.7 percent, or “other choice reasons” such as “I’m good at it”, or “I like the work”, 1.1 percent. As such, 32.0 percent of responses are positive in terms of the informal choice and may respond positively to policies to affect the costs and benefits of formalization.<sup>45</sup>

Firms which are involuntarily informal might be expected to have poorer performance than their formal and voluntarily informal counterparts, while the policies required to assist these types of firms may also be quite different to those required for “voluntarily” informal firms, relating more to social safety nets than reductions in registration costs or business development skills.

## REGISTRATION

The majority, 82.2 percent, (934 firms) of this sample of informal firms have no kind of documentation at all. This means that 17.8 percent (202 firms) have some form of registration document, a municipal license in almost all cases.

Table 4.3 presents the reasons cited for operating informally, with no major differences between those with and without a registration document. The fact that some “involuntary” informal firms have obtained

<sup>44</sup> Survival was not included as a category in the original questionnaire but was created here using the explanations provided for those selecting an “other” reason for operating as they do. This may also imply that some of those who cited a lack of work might otherwise have cited survival reasons had that category been available.

<sup>45</sup> In addition to these categories, 3.9 percent cited family tradition or “other” reasons (6.3 percent cited another reason including “destiny”, “to help out a family member”, “it’s what I was trained to do”).



some form of registration document is interesting but does not tell us whether this was an active choice or one which was forced by detection by the authorities, and what difference it creates if any. A larger share of firms with a document began their activity in order to earn more than those without a document, possibly indicative of registration relating to how the firm is motivated, although 33.2 percent of registered firms citing voluntary reasons for their informal existence is only marginally above the share for unregistered firms.

Of the sample of firms with no license of any form, 36.6 percent cite reasons relating to expense, complexity, being anti-state, or that the registration is in process, thereby implicitly acknowledging their illegality. The remaining 63.4 percent of firms are mostly informal due to a lack of information, with 40.1 percent of unregistered firms unaware of the need to register and a further 20.1 percent believing it is not required.

While the responses given in Table 4.3 may be subject to misreporting and require caution in interpretation, taken at face value they suggest that lack of formal employment opportunities and lack of information regarding small business obligations are key factors in leading firms to operate informal micro-enterprises in addition to the firm-level trade-off discussed above.

## MANAGER EDUCATION

Firm performance, access to information on registration and firm prospects for growth may relate to the characteristics of the manager and education level in particular. Table 4.4 provides information on manager educational attainment. The vast majority (74.3 percent) of managers have only primary education, having completed either only EP1 (49.5 percent) or EP2 (24.8 percent). 12.1 percent of the sample is potentially illiterate as 11.8 percent have never studied at all, while 0.3 percent received only literacy classes.

**Table 4.4 Manager Education**

	Never studied	Literacy classes	Primary		8-10th class	11-12th class	Tecnico Basico	Don't know	Total	N
			EP1	EP2						
Overall	11.7%	0.4%	49.5%	24.8%	10.8%	2.0%	0.7%	0.1%	100.0%	1136
Lack of formal employ	36.8%	25.0%	43.8%	48.9%	45.5%	26.1%	50.0%	100.0%	44.1%	501
Survival Reasons	15.8%	0.0%	16.0%	8.9%	12.2%	8.7%	25.0%	0.0%	13.6%	155
To Earn More	24.8%	25.0%	14.6%	15.6%	14.6%	21.7%	12.5%	0.0%	16.2%	184
To be Independent	8.3%	0.0%	14.6%	16.7%	14.6%	39.1%	0.0%	0.0%	14.7%	167
Choice	0.0%	0.0%	0.7%	2.1%	2.4%	0.0%	0.0%	0.0%	1.1%	13
Family Tradition	6.8%	25.0%	3.7%	2.5%	4.1%	4.3%	0.0%	0.0%	3.9%	44
Other	7.5%	25.0%	6.4%	5.3%	6.5%	0.0%	12.5%	0.0%	6.3%	71
No Response	0.0%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	1
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	1136
N	133	4	562	282	123	23	8	1	1136	

Only 10.8 percent of the sample managers have completed the first stage of secondary school (8-10<sup>th</sup> class) while 2.0 percent completed the second stage. 0.7 percent of respondents have gone on to complete a technical course at the basic level, although none have completed either the “técnico médio” or university level. The low level of educational attainment is also well-below the managerial levels cited in

the World Bank (2003) survey of formal firms, where over 75 percent of managers had secondary or higher education levels. This also contrasts with the findings of Gelb et al. (2009) for Tanzania and Kenya where education levels were similar to formal firms. It may also be that the level of education limits the potential for growth, thus lowering the potential benefits from formality. Lower education may also limit access to information regarding registration and licensing obligations.

Although a lack of salaried employment is the most common motivation for starting a firm across all education categories, for those who completed the last years of secondary school, 36.0 percent cited independence as their motivation and 24.0 percent to earn more. This implies that 60 percent of those educated to the 11 and 12<sup>th</sup> classes are voluntarily informal. Although the majority of those with no formal education cite a lack of salaried employment, almost a quarter still cite earning more as their reason for operating informally, implying that the informal wage for some uneducated individuals may be higher in the informal than formal sector.

## OTHER MANAGER CHARACTERISTICS

Further manager characteristics are presented in Firms are also dominated by household heads, with the reasons given for running their firm broadly the same as for male-led firms. However, the higher proportion of household head than male managers suggests that a number of women household heads are firm managers in this sample.

Table 4.5. 53.1 percent of firms are led by men and 46.9 percent by women. Of female-led firms, the largest motivation response relates to a lack of salaried employment opportunities. However, 20.1 percent cite survival reasons, considerably higher than the 8.0 percent for males. Nonetheless, female-led firms also have a substantial share of voluntary informal participants, with 18.6 percent wishing to earn more, and 17.8 percent seeking greater independence. Firms are also dominated by household heads, with the reasons given for running their firm broadly the same as for male-led firms. However, the higher proportion of household head than male managers suggests that a number of women household heads are firm managers in this sample.

**Table 4.5 Additional Manager Characteristics**

	Male		Household Head		Migrant		2nd Activity		Total	N
	No	Yes	No	Yes	No	Yes	No	Yes		
Total=100%	46.9%	53.1%	38.7%	61.3%	67.9%	32.1%	81.5%	18.5%	100.0%	1136
Lack of formal employ	32.5%	54.4%	38.0%	48.0%	44.4%	43.6%	44.9%	40.5%	44.1%	501
Survival Reasons	20.1%	8.0%	15.2%	12.6%	12.5%	16.2%	13.8%	12.9%	13.6%	155
To Earn More	18.6%	14.1%	16.6%	15.9%	15.7%	17.3%	14.1%	25.2%	16.2%	184
To be Independent	17.8%	11.9%	20.0%	11.4%	15.8%	12.3%	16.0%	9.0%	14.7%	167
Choice	0.0%	2.2%	0.2%	1.7%	1.3%	0.8%	1.0%	1.9%	1.1%	13
Family Tradition	2.8%	4.8%	3.6%	4.0%	4.2%	3.3%	4.0%	3.3%	3.9%	44
Other	8.1%	4.6%	6.1%	6.3%	6.1%	6.6%	6.2%	6.7%	6.3%	71
No Response	0.2%	0.0%	0.2%	0.0%	0.1%	0.0%	0.0%	0.5%	0.1%	1
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	1136
N	533	603	440	696	771	365	926	210	1136	

Table 4.6 reports summary figures for manager age, total work experience and the age of the firm. Based on the assumption of learning-by-doing, these might also be associated with firm performance and

potentially the decision on whether or not to register. Overall, the mean manager age is of 36.5, with a median of 35, although the years of experience in the sector are considerably lower, with a mean of 8 and median of 5. Enterprises are even younger, implying that most people were previously employed elsewhere, not only in other enterprises but also other sectors. Table 4.6 also provides a breakdown of this information by whether or not the firm has a registration document or not. This suggests no major differences between the two groups although those with no document have less years of experience and younger enterprises, on average and at the median.

**Table 4.6 Manager Age, Experience and Firm Age by Registration Status & Reason for No Registration**

		N	Mean	SD	Median	Min.	Max.
Overall	Manager Age	1130	36.51	0.37	35	12	89
	Years' Experience	1115	8.15	0.28	5	0	50
	Enterprise Age	1130	5.62	0.22	3	0	41
Reg Doc.	Manager Age	201	37.04	0.78	35	17	73
	Years' Experience	200	9.67	0.68	7	0	49
	Enterprise Age	201	7.32	0.57	5	0	38
No Reg Doc.	Manager Age	929	36.39	0.42	35	12	89
	Years' Experience	915	7.81	0.31	5	0	50
	Enterprise Age	929	5.25	0.23	3	0	41

The INFOR questionnaire also questions whether the interviewee was born in the province in which they currently work, with those no longer in their original province classed as migrants. This may be important in determining enterprise firm performance as migration can be considered an investment in human capital and is empirically associated with higher levels of ability (e.g. Lanzona, 1998). The majority of managers (67.4 percent) are not migrants, and according to the responses there is little difference in reasons for operating as they do between the two groups although registered enterprises have a higher share of migrants (41 percent) than unregistered firms (25 percent).

For 81.7 percent of the sample, the surveyed firm is their only business, with 18.3 percent having diversified into an additional secondary activity, potentially as a way to reduce income risk. 26.0 percent of managers with a second activity cite earning more as their motivation for carrying out the principal activity, while for other characteristics this is around ten percent less. This may signal an underlying ambition to earn more money with potential effects on how the firm performs when the owner has additional activities.

Table 4.7 breaks down firms by their intention to expand employment in the next year, a further potential indicator of the underlying purpose and performance of the firm.

**Table 4.7 Enterprise Expansion Plans and Reason for Non-expansion**

	No Registration Document	Registration Document
Plan to expand	13.1%	18.8%
No planned expansion (breakdown below):	86.9%	81.2%
lack of raw materials	3.6%	2.5%
lack of clients	30.0%	24.3%
excess competition	7.3%	5.0%
illiquidity	36.3%	39.1%
Unqualified workers	0.0%	0.5%
problems with installations	0.5%	1.5%

problems with equipment	2.2%	1.0%
production problems	0.6%	0.0%
management problems	2.2%	2.5%
laws, bureaucracy and taxes	1.3%	2.5%
other	0.1%	0.5%
no problem	2.7%	2.0%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>

Although a larger share of firms with a registration document plan to expand (18.8 percent) than those without (13.1 percent), the difference is small enough to suggest that absence of a registration document does not signal a lack of growth ambitions. The reasons given for not expanding are also similar between the two groups of enterprises. The principal differences are in the share complaining of lack of clients and excess competition, both larger for enterprises with no registration document. This may uphold evidence for developing economies that demand conditions can be more important to firm profits than productivity levels.<sup>46</sup>

## FIRM LOCATION

Being urban or rural and the fixity of the operating location are also likely to be important in determining the probability of detection and the level of information about regulatory obligations, thus affecting the informality cost-benefit trade-off. Firms in an urban setting are also likely to have different demand conditions to those in rural settings which may affect the formality decision. Location data are summarized in Table 4.8.

**Table 4.8 Location and Registration Status**

	Hold Reg. Doc.	Reason for no registration document.							Total	N
		Complexity	Expense	Anti-State	In process	Not Obligated	Don't know need	Other		
Rural	13.4%	11.0%	14.5%	0.0%	6.4%	19.2%	33.7%	1.7%	100.0%	172
Urban	18.6%	10.5%	12.6%	0.8%	5.9%	16.4%	32.9%	2.4%	100.0%	964
Ambulatory	9.2%	16.0%	19.3%	0.8%	3.4%	11.8%	37.0%	2.5%	100.0%	119
Vehicle	15.7%	8.3%	19.8%	0.0%	5.0%	14.0%	35.5%	1.7%	100.0%	121
Temporary in market	15.0%	1.7%	13.3%	1.7%	8.3%	25.0%	31.7%	3.3%	100.0%	60
Temporary in public	4.5%	10.6%	10.6%	1.6%	3.5%	26.7%	39.2%	3.2%	100.0%	311
Permanent in public	21.5%	8.7%	12.8%	0.0%	10.1%	13.4%	32.9%	0.7%	100.0%	149
Clientele houses	17.3%	3.8%	9.6%	0.0%	9.6%	13.5%	46.2%	0.0%	100.0%	52
Own house, no modif.s	23.1%	23.1%	15.4%	0.0%	0.0%	15.4%	23.1%	0.0%	100.0%	13
Own house with modif.s	5.0%	12.5%	22.5%	0.0%	3.8%	16.3%	35.0%	5.0%	100.0%	80
Permanent building	17.5%	20.0%	7.5%	0.0%	5.0%	7.5%	40.0%	2.5%	100.0%	40
Workshop, shop, rest.	50.3%	10.3%	5.7%	0.6%	9.1%	8.6%	13.7%	1.7%	100.0%	175
Other	41.7%	25.0%	8.3%	0.0%	8.3%	8.3%	8.3%	0.0%	100.0%	12
No Response	25.0%	0.0%	0.0%	0.0%	0.0%	25.0%	50.0%	0.0%	100.0%	4
<b>Total</b>	<b>17.8%</b>	<b>10.6%</b>	<b>12.9%</b>	<b>0.7%</b>	<b>6.0%</b>	<b>16.8%</b>	<b>33.0%</b>	<b>2.3%</b>	<b>100.0%</b>	<b>1136</b>
<b>N</b>	<b>202</b>	<b>120</b>	<b>146</b>	<b>8</b>	<b>68</b>	<b>191</b>	<b>375</b>	<b>26</b>	<b>1136</b>	

Within this sample 84.9 percent of firms (964) are urban. Urban firms are slightly more likely to hold a registration document (18.6 percent) than rural firms (13.4 percent). The reasons for not being registered are also notably similar for both urban and rural firms, reported in Table 4.8, suggesting that there is no

<sup>46</sup> See Eslava et al. (2004)

large difference in the environment in terms of contact with bureaucracy or inspectors etc. 32.0 percent of rural and 29.8 percent of urban firms implicitly acknowledge their illegality, citing the complexity or the expense of acquiring documents or that the process is underway. The majority of both rural and urban firms therefore claim to be unaware of the need for a registration document although here the share of ill-informed firms is higher in rural areas, 54.7 percent, than urban areas, at 51.7 percent.

The final column of Table 4.8 shows that 53.8 percent of this sample operate in some kind of temporary location in public, including vehicles, markets or stalls in public (611 firms), 13.1 percent have a permanent location in public (149 enterprises), 12.8 percent operate from either their or their clients' homes (145 firms), and 18.9 percent have some kind of permanent building or workshop specifically for their business (215 firms). The majority of these enterprises are therefore in public view, implying that these are in view of the authorities but also of prospective clients, something which might affect their formality decision.

The highest share of firms with a registration document is those operating from a workshop, shop or restaurant, at 50.3 percent. Nonetheless, only 17.5 percent of those in a permanent building have a registration document, indicating fixity in public need not imply registration.

At the other end of the scale, a full 65.9 percent of those with enterprises with temporary locations in public are ignorant of their registration obligations, followed by 59.6 percent of those who operate from clientele houses, and 56.7 percent operating in temporary surroundings in markets.

## CAPITAL PER WORKER

Given the differences between firms operating from apparently similar locations, Table 4.9 presents summary statistics on the reported capital stock per employee across rural and urban firms, their different locations, and their motivation for operating informally.

**Table 4.9 Capital Stock per Employee (millions Mts)**

	Mean	S.D. on mean	Median	Min.	Max.	N	
Total	3.3	0.8	0.0	0.0	333.3	853	
Rural	1.3	0.5	0.1	0.0	40.0	83	
Urban	3.5	0.8	0.0	0.0	333.3	770	
Lack of formal employ	1.7	0.6	0.0	0.0	180.0	387	
Survival Reasons	0.6	0.3	0.0	0.0	22.5	110	
To Earn More	4.9	2.5	0.0	0.0	266.7	137	
To be Independent	4.5	1.8	0.1	0.0	175.0	143	
Choice	39.2	36.8	0.7	0.0	333.3	9	
Family Tradition	4.0	2.9	0.1	0.0	70.0	24	
Other	6.8	6.3	0.0	0.0	270.7	43	
Registered	10.5	-	0.1	0.0	333.3	162	
Un-registered	1.6	0.5	0.0	0.0	180.0	691	
Why not registered?	Too Complex	4.3	2.5	0.0	0.0	180.0	99
	Too Expensive	0.9	0.4	0.1	0.0	37.7	116
	Anti-State	0.0	0.0	0.0	0.0	0.2	5
	In Process	4.3	3.1	0.0	0.0	150.0	51
	Not obligatory	1.1	0.6	0.1	0.0	70.0	134
	Don't know if need	0.6	0.2	0.0	0.0	62.0	271

Other	1.3	1.1	0.0	0.0	16.4	15
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Note: Values in millions of "old Mts", equivalent to thousands of new Meticais MTN. Note that the sample size is reduced compared with the analyses above due to missing data for calculation of capital stock per employee and/or labor productivity.

The mean capital stock per employee is a mere Mts3.2 million, little more than US\$130. This suggests low average entrance costs to operating the kinds of firm included in this sample. Further, the median capital stock per worker is zero implying zero entrance costs other than inputs, suggesting that access to start-up capital is not an important factor for these types of firms.<sup>47</sup>

There is an interesting divide in capital per employee between urban and rural firms with rural firms reporting a mean of Mts1.3m while urban firms have a mean of Mts3.5m. The maxima also differ considerably, from Mts40m in rural firms to Mts333m for urban firms. As such there is a clear difference in average capital intensity, even if registration status varies little between urban and rural informal firms. Still, the median and minimum capital per employee is almost zero for both groups, indicating that capital per employee is highly skewed as a measure.

“Survival firms” are associated with the lowest mean level of capital per employee, followed by those citing a lack of formal employment. In contrast, those citing positive reasons for operating informally, have higher levels of capital per employee. In the case of “survival reasons” this might be expected given their assumed poverty, while the greater capital per employee firms may capture some underlying issues relating to potential for expansion and good performance. These may be firms which the government would wish to attempt to convince to formalize.

This view is further supported by examining the fact that registered firms are almost seven times more capital intensive than unregistered, with means of Mts1.6m (US\$67) and Mts10.5m of capital per worker (US\$474) for unregistered and registered firms, respectively. These averages include the 40.3 percent of unregistered firms and 35.6 percent of registered firms that reported using no capital at all. However, the maximum reported capital per worker for unregistered firms remains relatively high at Mts180m (US\$7,826) and Mts333m (US\$14,492) for registered firms levels, illustrating a high degree of variation of capital intensity of production within the sample with potential implications for firm performance

Here there is clearly a question mark over whether a firm registers because it has invested in capital and wants to protect it to some degree, or whether by having a registration document a firm manages to invest in capital. It is clearly important to control for capital intensity in analyzing registration determinants and productivity levels.

## CREDIT

Given the frequency with which credit is cited as a benefit of formality, it is informative to examine finance sources. Despite a low level of responses (60.5 percent), the principal source of finance for starting the majority of informal firms was internal funds (51.3 percent, or 84.7 percent of responding firms), similar to the 90 percent found in World Bank (2003). In addition, 10 firms cited access to family savings funds, while 16 firms cited having access to producer credit. 8.3 percent of firms had requested a loan in the previous year (90 of 1078 firms). Nonetheless, this does not necessarily imply that greater credit availability would encourage these firms to operate formally.

<sup>47</sup> Note that this is distinct from no response which are excluded from the analysis..

## INFORMAL COMPETITION/INTEGRATION

Firms were also asked whether they had any new clients in the past year that were previously supplied by a large firm. This is taken as a proxy variable for competitiveness and therefore integration with the formal sector. This variable may also be important in revealing unfair competition to formal firms, but might also be viewed more positively as a sign that small informal firms can and do integrate with the formal economy. Under this definition, the median firm is not integrated, regardless of registration status, although 21 percent of registered firms are integrated compared with only 14 percent of unregistered firms. Of those firms which are unregistered, a higher share of firms citing the expense of registration or that registration is in process also serve a firm previously supplied by a large firm, perhaps again suggesting subtle differences in these firms from other unregistered firms.

**Table 4.10 New Client Previously Supplied by a Large Firm**

	Unlinked	Linked
Total	84.7%	15.2%
Registered	77.7%	21.8%
Unregistered	86.2%	13.8%
Too Complex	86.7%	13.3%
Too Expensive	76.0%	24.0%
In Process	76.5%	23.5%
Not obligatory	94.8%	5.2%
Don't know if need	87.5%	12.5%
Anti-State	87.5%	12.5%
Other	84.6%	15.4%
N	962	173

Along similar lines, firms provided a classification of their principal client. The vast majority (92 percent) of sample enterprises cater for final demand from families, 0.5 percent sell to government despite being informal, while 3.1 sell to other enterprises.

The variable on whether or not profits grew in the previous year indicates that 18.7 percent of firms had increasing profits in the previous year, where this was the case for 20.6 percent for registered firms against 18.3 percent of unregistered firms.

# 5. Registration & Enterprise Performance

## WHICH INFORMAL FIRMS REGISTER?

This section uses regression analysis to examine the characteristics associated with holding a firm registration document.<sup>48</sup> This employs the detailed enterprise data discussed in the previous chapter to examine their importance in determining the probability of being i) informal with a registration document, or ii) informal with no documents at all.<sup>49</sup>

Four specifications are used with increasing numbers of enterprise characteristics included to provide additional insights and check robustness.<sup>50</sup> The principal results are summarized here, while Table 5.1 in Appendix VII presents the estimated marginal effects for all firms according to available data:

*Specification (1)* includes owner age and education variables as well as location and sector variables. The greatest determinant of being registered is educational attainment, with those with a primary education increasing the probability of registration by 8.2 percentage points over those with no schooling or incomplete basic primary education, while secondary education increases the probability by a considerable 25.1 percentage points, *ceteris paribus*, well above that found in the previous analysis, both statistically significant at the one percent level.

The age of the manager/owner is positively and statistically significantly associated with being registered, implying overall that older more educated individuals are more likely to be registered. Given that these covariates may capture a number of additional factors such as firm size, however, it is difficult to draw any real conclusions from this first set of estimates.

*Specification (2)* includes further owner attributes including manager experience in the area of work, which is also positively related to the probability of being registered and significant at the five percent significance level.

Of the additional individual characteristic variables, only being urban and a migrant have a statistically significant, positive impact at the five percent and ten percent levels, respectively. This implies that these are important in determining registration status, potentially because urban firms are more likely to be better informed regarding their registration obligations and more visible to the enforcement authorities while migrant status is often associated with an explicit strategy to raise household income, therefore proxying for unobservable entrepreneurial drive.<sup>51</sup> This specification considerably improves the share of

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<sup>48</sup> Summary statistics of the principal variables employed in this analysis classified according to registration status are provided in Appendix III. The sample for this analysis is further reduced to include only firms which provided financial and employment data to allow consistency with the performance analysis provided in the following section.

<sup>49</sup> This analysis draws partially on analysis submitted in the chapter “Formal Benefits for Informal Firms” from Byiers (2009), “Enterprise Development and Informality: Case Studies from Mozambique”, DPhil Thesis, University of Sussex, Brighton UK.

<sup>50</sup> See Appendix IV for more details.

<sup>51</sup> Note that the effect of being urban and migrant disappears when considering only those firms with financial data, implying that this is not a completely robust result.



correctly predicted outcomes, from 0.038 in specification (1) to 0.71, while the estimated effects of education on registration reduce only marginally.<sup>52</sup>

*Specification (3)* includes the enterprise size (the log of the number of workers), the age of the enterprise, and capital stock per worker. All three variables are statistically significant and positive, implying an increasing probability of being registered with size and age and capital intensity, as would be expected from the discussion above.<sup>53</sup> Again the education variables broadly maintain the size of their effect, and their statistical significance.

*Specification (4)* further includes the number of products a firm sells, which has an estimated coefficient which is positive and significant at the five percent level, implying that product diversification is associated with being registered, potentially due to greater exposure to administrative authorities, or through economies of scope and allowing greater visibility to clients. Whether or not this also translates to increased value-added and higher productivity is the subject of the next section.

Formal sector integration, as proxied by having a client previously supplied by a large firm, appears not to be important in predicting registration for the restricted sample although it has a P-value of 10.01, suggesting some relevance nonetheless. Also related to how firms relate to value-chains is the final demand variable, although again this is not statistically significant in determining whether or not a firm registers.

The location of each firm is summarized as being i) ambulatory, ii) operating from home or iii) from a specific firm location such as a shop or workshop outside the home. The estimated coefficients for these latter two variables come out highly significant, implying that operating from home is significantly negatively associated with the probability of being registered, implying that these firms may hide, while operating from firm-specific premises is associated with a higher probability of being registered.

All specifications include sector and location dummy variables, many of which appear statistically significant in comparison with the control group which is the arbitrarily chosen primary sector firms in the northern province of Niassa. This suggests that propensity to register also varies by sector and province, something which may be important in terms of how uniform national policies are implemented at the more local level.<sup>54</sup>

That education appears to be an important factor in determining firm registration is not surprising in itself, but may also imply that in the presence of a relatively low-education population, regulatory simplification would be effective in lowering barriers to formality. The importance of enterprise size and location also suggest that visibility to the authorities may be important.

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<sup>52</sup> As is common for this type of analysis, predicted probabilities of >05 are assumed to be “hits” and all others “misses”.

<sup>53</sup> Although their inclusion may help to mitigate self-selection bias in the matching process, the variables themselves may be affected by the decision to register, thus raising the prospect of simultaneity bias in the estimated coefficients. This is one reason why four specifications are included, with increasing possibilities of simultaneity bias in each one. This is further discussed in Appendix VII.

<sup>54</sup> A selection of additional variables were also included in an attempt to capture underlying differences in the nature of these firms which might also be related to a propensity to register, for example in terms of whether or not it existed primarily with growth in mind or simply as an income source. These include whether or not the owner has an additional secondary activity, whether the reason given for operating this kind of enterprise is related to survival, or (separately) to positive reasons relating in income, independence or love of the profession, the share of firm workers who are uneducated and whether or not the firm plans to expand in the coming year. Whether or not the enterprise was a member of an association or had access to credit were also introduced. While these were intended to proxy for underlying factors relating to the nature of the firm, none had a statistically significant impact on a firm’s registration status in the reduced or full sample.

## REGISTRATION & PERFORMANCE

An overriding of government policy is to increase private sector productivity. If formalization and productivity are related, this is an insight which may help in formulating policy.

If there is little performance difference between similar formal and informal firms, this would place Mozambique alongside other East African countries, where Gelb et al. (2009) find that the majority of the informal sector are found to be there by choice. This is in contrast to Southern African countries where they productivity differences and education levels suggest that informality is dominated by survival type firms.

There is a potential difficulty for estimation because more productive firms may self-select into registering. This effect is isolated to the degree possible by controlling for the ability and motivation of the entrepreneur as well as the range of manager and firm characteristics summarized above in the specifications used in the previous analysis. The technique used, propensity score matching, uses the predicted probabilities of firms being registered, and basically compares the productivity of two firms with similar probabilities, one of which is registered and the other not.<sup>55</sup>

### Labor Productivity

Firm performance is captured in this study using labor productivity, calculated as value-added per worker. Value-added is the total sales for the previous month minus reported total intermediate input costs over the same period, excluding salaries.<sup>56</sup>

Table 5.1 compares labor productivity across rural and urban firms, and the categories of motivation for operating informal. Note that the sample size declines for this analysis due to a lack of reported financial data.<sup>57</sup> There is little difference in mean or median labor productivity across urban and rural firms. The highest mean and median labor productivity by category of motivation is found in the category of “Family Tradition” (Mts3.3m per worker per month), followed by “Choice” (Mts2.8m) i.e. those who gave an explicit answer referring to why they chose to work as they do. The next categories with highest mean labor productivity are those citing lack of employment opportunities.

Those categories with the highest median labor productivity also had the highest capital per employee, indicating that this is likely to be related. Despite large differences in mean capital per employee between rural and urban firms, the mean value-added per employee is almost the same across urban and rural firms with a similar median and maximum.<sup>58</sup>

The data suggest that on average, firms with a registration document are more productive at the mean and median (Mts3.1m and Mts1.5m versus Mts2.0m and Mts0.8m, respectively). This will be verified by examining similar firms to measure if this is the case.

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<sup>55</sup> This is contingent on a set of assumptions, discussed Appendix VII.

<sup>56</sup> This is used given the availability of only basic financial data with little information on input and output quantities and prices.

<sup>57</sup> Due to time constraints, no analysis was carried out of whether or not financial data was missing in any systematic way. The assumption is that this is not case.

<sup>58</sup> Notably, there are a number of firms with negative reported labor productivity due to this being calculated using value-added in the month prior to the survey, divided by the number of workers. If a firm happened have large out-goings in the month in question due to replenishing stocks or a periodic input purchase, this would show up as negative value-added. 59 firms have negative value-added. Of these, 44 are in the retail sector with at least one in each other sector of activity. 43 are one-worker firms, with no other particular pattern of distribution across other variables analysed here.

**Table 5.1 Labor Productivity (Value-added per Employee)**

	S.D. on		Median	Min.	Max.	N
	Mean	mean				
Total	2.2	2.9	0.9	-6.6	35.6	847
Rural	2.4	3.8	0.8	-4.8	35.4	82
Urban	2.2	2.8	0.9	-6.6	35.6	765
Lack of formal employ	2.3	3.1	0.9	-6.6	35.6	383
Survival Reasons	2.0	2.9	0.8	-0.5	32.5	109
To Earn More	2.0	2.6	0.8	-2.5	31.3	137
To be Independent	2.2	2.7	1.0	-6.6	27.4	142
Choice	2.8	1.9	1.4	0.1	8.5	9
Family Tradition	3.3	2.3	1.5	-0.3	13.7	24
Other	1.9	3.0	0.8	-1.0	26.4	43
Registered	3.1	2.7	1.5	-2.5	32.5	161
Un-registered	2.0	2.9	0.8	-6.6	35.6	686
Why not registered?						
Too Complex	2.6	3.2	1.0	-5.4	31.3	96
Too Expensive	2.5	3.6	0.9	-5.5	35.6	115
Anti-State	1.9	3.2	0.4	-1.6	9.8	5
In Process	2.9	2.2	1.6	-2.9	14.3	51
Not obligatory	1.9	3.1	0.8	-6.6	32.9	133
Don't know if need	1.5	2.3	0.6	-6.6	24.2	271
Other	1.7	1.6	1.1	0.0	8.4	15

Note: Values in millions of "old Mts", equivalent to thousands of new Meticaís MTN.

Unregistered firms who acknowledge their illegality (citing complexity or expense for not being registered) have higher average productivity than those who believe registration is not obligatory or do not know they need be registered. This suggests that reducing the complexity and expense of registering would help formalize more productive firms. Nonetheless, this does not control for other firm characteristics, the object of the analysis presented below.

It is possible to draw comparisons between this data and firm-level labor productivity data from the World Bank's Investment Climate Assessment (World Bank, 2003). Although in that survey most firms were considered formal, the median value added per worker for micro firms (with 1 to 10 workers) from that survey is of Mts0.9m, the same as the overall median found here, as shown in USD terms in Table 5.2. Although not conclusive, this simple comparison would suggest that there is little difference in productivity between formal firms and informal firms of a similar size and is helpful in validating the financial data collected in the INFOR survey.

Table 5.2 also presents comparable data from other countries in the region and according to sector. The median level of labor productivity in Mozambique is considerably lower than all countries, although micro firms from the WB sample and INFOR are more productive than in Cote d'Ivoire, as are firms in the textile sector.

**Table 5.2 Labor Productivity for SSA Formal firms and Mozambican Informal Firms (US\$)**

	Cameroon	Cote d'Ivoire	Ghana	Kenya	Tanzania	Zambia	Zimbabwe	Mozambique	INFOR
Median	804.7	93.5	108.7	278.1	155.2	246.8	333.3	81.4	36.8
Micro (1-10)	403.1	22.6	63.9	132.9	121.7	148.3	181.3	36.6	37.3
Small (11-30)	588.2	89.7	99.9	278.1	117.6	259.2	257.3	81.4	2.3
Medium (31-75)	1599.7	117.0	94.3	281.1	189.3	251.0	323.3	124.6	-
Large (76-250)	1618.2	173.9	206.4	387.9	173.3	343.6	333.3	167.7	-
Very Large (>250)	1435.5	168.8	288.6	235.8	312.8	389.0	409.9	72.5	-
Food	1174.0	137.6	219.0	445.8	286.7	284.6	598.5	134.3	19.2
Metal	743.5	113.4	119.9	160.7	161.7	367.0	317.9	61.9	29.3
Textile	530.3	31.3	84.0	152.7	85.8	164.4	259.9	55.4	71.0
Wood	642.1	83.1	76.4	223.0	74.2	131.8	213.3	95.3	40.1

Note: This data is taken from World Bank (2003), converted from annual to monthly equivalent. The INFOR data is converted to USD using the 2002 average USD exchange rate of Mts23,666 to 1 USD. Source: World Bank (2003) and author's own calculations.

## The Performance Impact of Registration

Table 5.3 gives the estimated effect of registration on enterprise labor productivity for the four specifications used in the analysis above (reported in Appendix VI). The technique used implies that all the variables in each specification play a role in the comparison of productivity in this sector. For example, under specification (4), the estimated productivity difference between a registered and unregistered firm is based on firms with the same predicted probability of being registered according to manager age, experience, education, gender, urban status, migrant status, firm size, firm age, capital stock, number of products sold, integration, principal demand source, and location, as well as sector and province.

The estimated effect of registration on labor productivity is positive under all four specifications although the magnitude declines, the more control variables are included in the specification. The positive relation suggests that on average, profit-maximizing enterprises would choose to register rather than having registration imposed through regulatory enforcement, the latter being more likely to bring additional costs and thus lower value-added in relation to similar unregistered firms.

**Table 5.3 Average Effect of Registration on Labor Productivity for Registered Firms**

Spec.	Average Registration Effect	No. of Obs.
(1)	1.00	853
(2)	0.98	853
(3)	1.08	853
(4)	1.04	852

Note: Average taken of outcomes of three matching approaches. Full results in Appendix VII.

Under specification (1), the average estimated value-added premium of holding a registration document is Mts1.00m, approximately US\$43.5 for the month in question. This means that if value-added were determined only by owner age and education, and the enterprise sector and location, the act of being registered despite remaining informal in the strictly legal sense confers a mean value-added premium equivalent to 32.1 percent of the mean value-added of registered firms, as shown in Table 5.4.

**Table 5.4 Benefit of Registration as a Share of Registered Enterprise Productivity**

Spec.	Average Registration Effect	No. of Obs.
(1)	32.1%	853
(2)	31.6%	853
(3)	34.5%	853
(4)	33.2%	852

See full results in Appendix VIII.

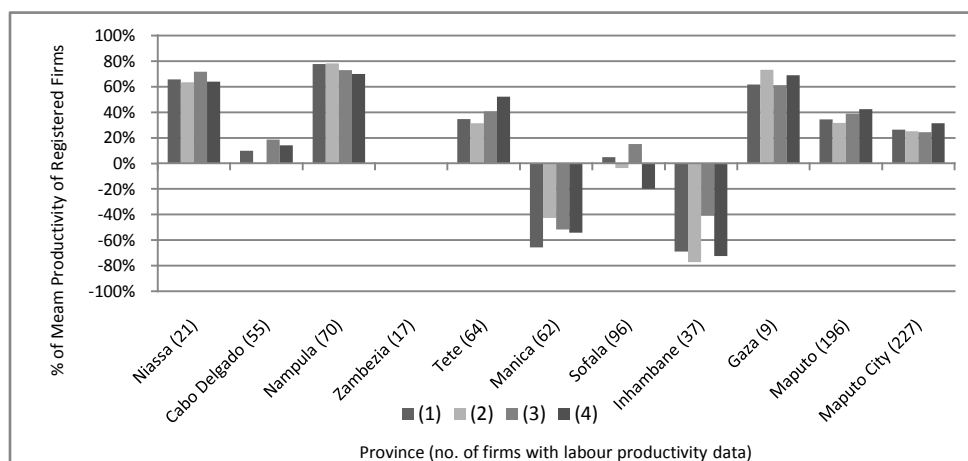
Under specification (2), the estimated effects are similar at Mts0.98m (approximately US\$42.8). Specifications (3) and (4) suggest slightly higher benefits to labor productivity, representing an estimated premium of between 33.2 and 34.5 percent of average labor productivity for registered firms.<sup>59</sup> Recalling the different variables included in specifications (1) to (4), and the potential risk of endogeneity bias, the consistency of the estimates is encouraging.

Assuming the data represent a typical month, the implied average annual value-added premium to a registered, informal micro-enterprise, is between US\$513 and US\$560. Although this is low by any measure, the fact that much of the income from value-added will typically be spent on salary, this additional income represents an important benefit to small-scale enterprises from registration.

## Heterogeneous Impacts

The estimated impacts above are averages from all firms. However, heterogeneity across firms may imply different effects of registration on firm performance according to different firm types. Figure 5.1 presents the impact of registration on labor productivity as a percentage of mean productivity by province for the four specifications employed.

**Figure 5.1 Impact of Registration on Labor Productivity by Province**



This shows considerable variation in the mean impact across provinces. The results suggest registration has the largest positive impact for enterprises in Niassa, Nampula, and Gaza, all around 60 percent,

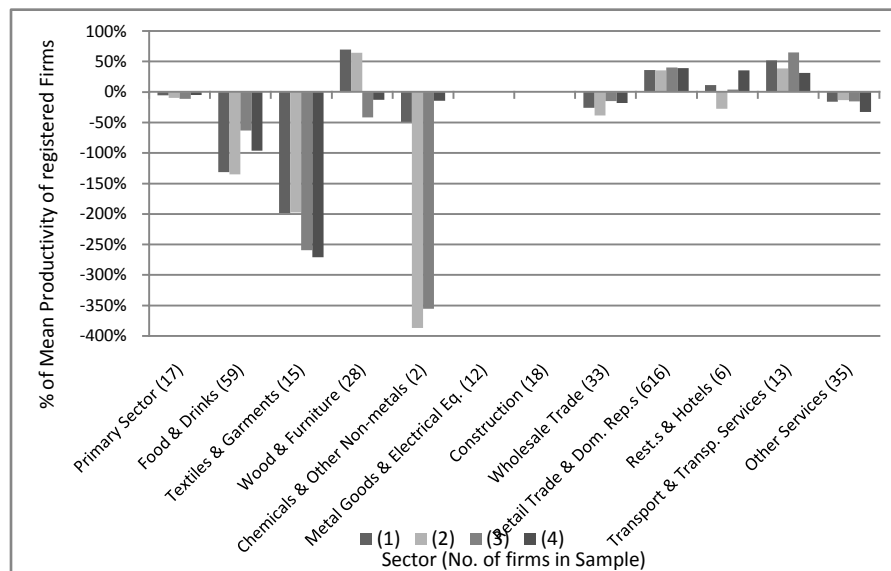
<sup>59</sup> The estimated effect under specifications (1) and (2) can be interpreted as upper bounds to the treatment effect given that these contain only those variables which can credibly be considered exogenous but exclude potentially important unobservable factors, while those introduced in specifications (3) and (4) are likely to be endogenous to firm performance and thus provide a lower bound estimate

closely followed by Tete (30 to 40 percent), with smaller positive impacts in Maputo province and Maputo city.

In contrast, the impact is small if there at all for Cabo Delgado and Sofala, suggesting little productivity difference between registered and unregistered firms, while in Manica and Inhambane labor productivity is lower in registered than unregistered firms, suggesting that the costs of having that document are higher than of operating completely informally.<sup>60</sup> Although this might plausibly reflect sample characteristics, it is likely to also capture differing conditions across provinces. According to the original hypothesis, where the productivity impact is negative, this suggests involuntary registration, while positive impacts would reflect voluntary registration. Note again that these firms are all informal.

In sectoral terms, there is also considerable variation, with some large negative impacts from registration. Figure 5.2 shows that the largest negative impact is in chemicals and other non-metals (although this has only two firms, perhaps explaining the inconsistency in estimates). Textiles and garments enterprises also appear to have a large negative registration impact, implying labor productivity which is 200 percent lower than unregistered firms. The food and drinks sector also displays a negative average effect from registration, while this is the case to a lower degree for the primary sector, wholesale trade and other services. In construction and metal goods there appears to be no productivity difference between registered and unregistered firms, while in wood and furniture the impact is ambiguous depending on the specification used i.e. the characteristics of the firm which are included. The impact is positive in retail trade and in transport and transport services, where a driving license is presumably an important registration document.

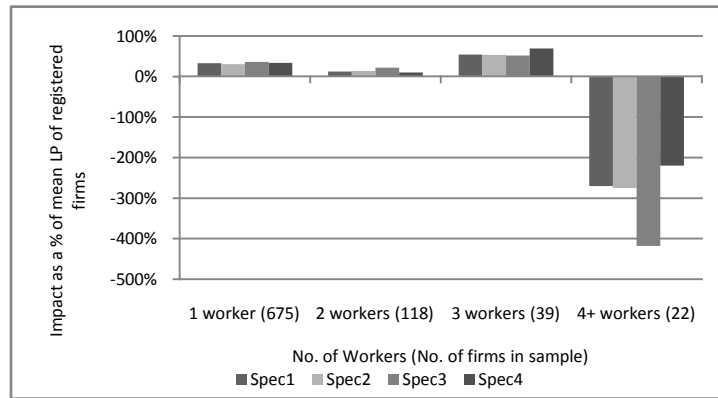
**Figure 5.2 Impact of Registration on Labor Productivity by Sector**



Again, these are average effects within sectors. Some of the ambiguity of the impacts above may relate to differences within sectors. While differences across provinces are one factor, firms of different sizes are also likely to experience different impacts. Figure 5.3 presents the impact of registration on labor productivity broken down by firm size.

<sup>60</sup> The lack of sample data on productivity for registered firms in Zambezia means that this analysis cannot be carried out for that province.

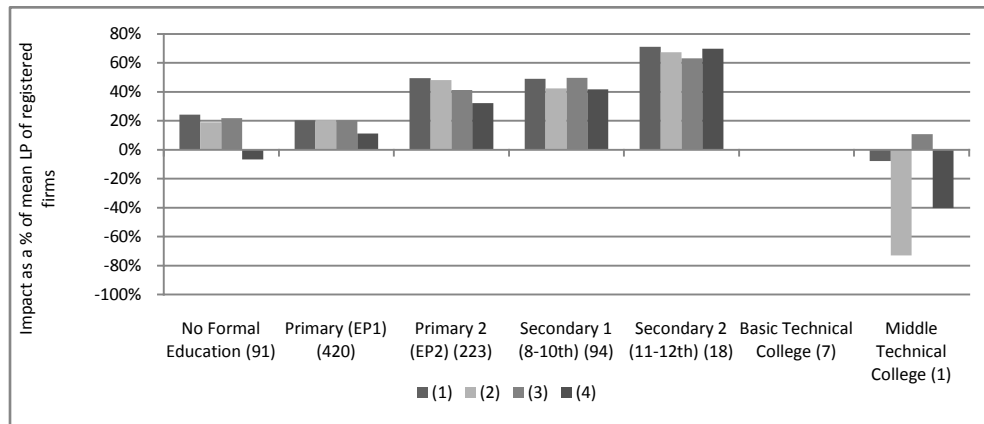
**Figure 5.3 Impact of Registration on Labor Productivity by Firm Size<sup>61</sup>**



The impact for firms up to three workers is positive, while the three-worker firm has the highest premium to labor productivity from having a registration document of around 60 percent, while for four workers the implication is that being registered has a negative impact on labor productivity.<sup>62</sup> This again implies that those firms with four workers or more are perhaps subject to more scrutiny and more bureaucratic pressure than firms with three workers or less, or that larger firms have generally managed to avoid enforcement in any form, implying that for larger firms the enforcement aspect of registration overshadows the potential benefit and that these firms are likely to be involuntarily registered.

The impact can also be graphed across the level of education of the manager. Here the results suggest that the benefits to firms with no formal education or only EP1 primary education are considerably less than for those with an EP2 education, and especially those with a Secondary 2 education. This is the clearest indicator yet of the impact of registration and the channel through which this operates.

**Figure 5.4 Impact of Registration on Labor Productivity by Manager Education**

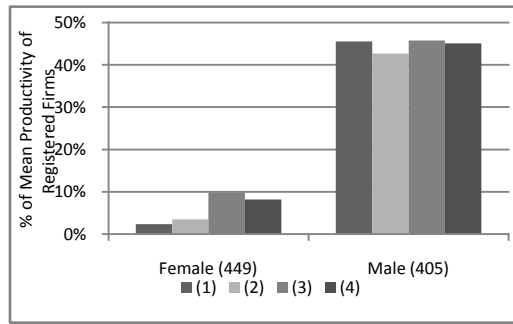


In gender terms, Figure 5.5 illustrates the considerably larger benefit to men from managing a company with a registration document than women, although notably the impact is non-negative for both. This implies that the negative impact relates to other characteristics.

<sup>61</sup> Specifications (1) to (4) correspond to the average estimated effects using Radius Matching and Kernel Matching.

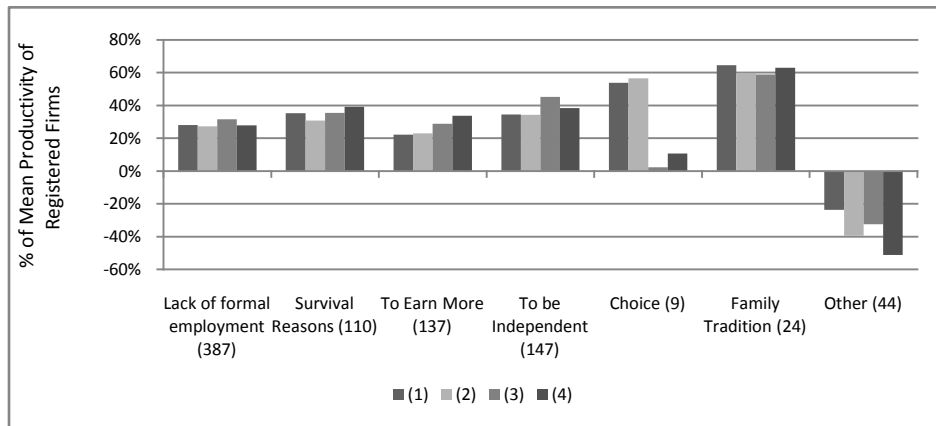
<sup>62</sup> Note that the sample of firms with 4 workers or more which provided labor productivity data is small at 22, with only 4 registered firms. This results should therefore be treated with some caution although anecdotal evidence and other studies referred to above on tax burdens suggest that the interpretation given here is entirely plausible.

**Figure 5.5 Impact of Registration on Labor Productivity by Gender**



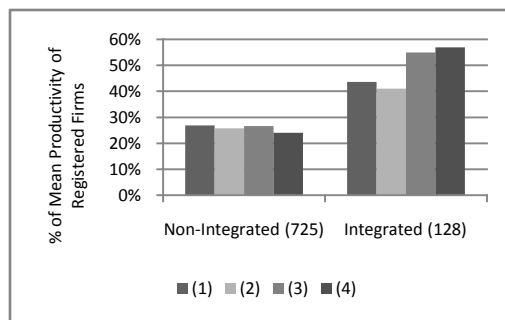
In terms of reason for operating informally, again almost all reasons given are associated with positive benefits to registration although the largest benefits are to those who do what they do for family tradition reasons. Those citing survival reasons also have a relatively high potential benefit from being registered, implying that this is not a determinant of whether or not registration can be beneficial.

**Figure 5.6 Impact of Registration on Labor Productivity by Reason for Choice**



Finally, Figure 5.7 illustrates the registration impact on labor productivity for “integrated” and non-integrated firms, according to the definition above. This suggests that the largest productivity impact of between 40 and 55 percent is for integrated firms, while un-integrated receive a positive impact but of around 25 percent.<sup>63</sup>

**Figure 5.7 Impact of Registration on Labor Productivity by Market Integration Status**



<sup>63</sup>The impact is also positive across all firm locations other than “Other” and an ambiguous effect for operating from a workshop.



# 6. On-going Policy Reforms

## FISCAL REFORMS – THE ISPC

While the data for the above analysis relate to 2005, the policy environment has altered since then. Recent fiscal reforms were implemented to lower the tax burden for micro and small firms, potentially lowering costs to formality. The impact of these reforms is simulated using the sample data from above.

In 2007 the threshold for VAT exemption was raised from Mts100m to Mts750m and the threshold for the 5% simplified VAT regime from Mts250m to Mts2,500m. Similarly, the threshold for the simplified IRPC regime was raised from Mts1,500m per annum to Mts2,500m, the same as the VAT threshold. Firms falling under the simplified IRPC regime are subject to a tax rate of 20 percent of total sales rather than the 32 percent of profits. However, as of 2009 firms under the VAT and IRPC simplified regimes can opt to register for the ISPC instead. This constitutes a 3 percent tax on total sales, or a fixed value of Mts75m (MTn75,000).

Enterprises with a turnover of up to 36 times the highest minimum wage in force as of the previous year-end are exempt from all tax, therefore allowing very small firms to exist without paying taxes. For 2008, the highest minimum wage was 2,139.50 MTn, giving an exemption threshold of 77,022 MT (Mts77m) in 2009, above which firms are subject to the ISPC or the VAT and IRPC.<sup>64</sup>

The maximum turnover in the present firm sample is Mts1,444.9m, meaning that all firms here fall under either the exempt or simplified regimes of the VAT and IRPC, and would be eligible to register for the ISPC. Table 6.1 shows the numbers of firms under each regime for VAT and IRPC in 2005 and in 2009, based on firm turnover figures adjusted to reflect inflation.<sup>65</sup>

**Table 6.1 Tax Regimes, Sales Value Thresholds and No. of Sample Firms**

	2005		2009	
	Total Sales	No. Firms	Total Sales	No. Firms
Tax Exempt			<Mts77m (36 min. Wages)	778
VAT Exempt	<Mts100m	931	<Mts750m	1105
IRPC Simplified or ISPC (2009)	<Mts1500m	1115	Mts77m<X<Mts2500m	237
VAT Simplified	100Mts<X<Mts250m	119	750Mts<X<Mts2500m	4
VAT Normal	>Mts250m	65	>Mts2500m	0

As this shows, whereas in 2005 962 firms were VAT exempt, 125 were subject to the simplified regime and 57 the normal regime, under the 2009 legislation all except ten firms are VAT exempt. Further, 610 firms are exempt from all taxes as they have a turnover of less than 36 minimum wages, cutting the number of firms subject to the simplified IRPC regime by more than half. Further, as referred to above,

<sup>64</sup> This matches the threshold for entering the IRPS on personal incomes. Hence, the ISPC taxes individuals operating micro and small enterprises who would fall below the tax threshold under the individual income tax. See Bolnick and Byiers (2009) for more details on tax policy reforms under PARPA II.

<sup>65</sup> This approach to updating the turnover figures using average annual inflation is clearly imperfect but is considered useful in order to give a broad view of the implications of the tax reforms and an improvement on simply using 2005 data.

firms under the IRPC simplified regime can instead opt to pay the considerably lower ISPC, implying that the 544 firms which are not exempt would be subject to the 3 percent ISPC only. On this basis alone it would seem that the tax system has become more favorable to micro and small firms.

Table 6.2 presents the estimated tax due as a share of value added (for the sample of firms for which value added data exist). Most importantly, the number of firms exempt from VAT has risen from 931 to 1105, leaving only 9 firms liable to VAT in 2009. Further, the mean effective rate under the simplified regime remains the same at 14.2 percent of value added, while the median effective rate increases only marginally from 10.4 percent to 11.4 percent of value added. Further, the range in estimated VAT as a share of value added declines from a maximum of 110 percent to 31 percent, overall implying that the reforms are beneficial to small firms, even ignoring the introduction of the ISPC, discussed below.

Under the IRPC, under the new regime 491 firms are exempt, compared with no previous exemptions, leaving only 440 firms subject to the simplified regime. The mean effective rate in the simplified regime across all firms increases from 52.4 percent of value added to 58.5 percent under the new regime. The range of effective rates, from -606 percent to 1,579 percent, would be a major concern if it were not for the ability to opt instead for the ISPC.

**Table 6.2 Estimated Revenues as a Share of Value Added**

	Tax	Regime	N	Mean	SD	Median	Min.	Max.
2005		Exempt	931	0.0%	0.0%	0.0%	0.0%	0.0%
	VAT	Simplified	110	14.2%	0.5%	10.4%	-80.7%	110.0%
		Normal	58	17.0%	0.0%	17.0%	17.0%	17.0%
	IRPC	Simplified	850	52.4%	1.6%	39.5%	-666.7%	2140.0%
		Normal	0	0.0%	0.0%	0.0%	0.0%	0.0%
	2009		Exempt	1105	0.0%	0.0%	0.0%	0.0%
VAT		Simplified	9	14.2%	0.2%	11.4%	6.1%	31.0%
		Normal	0	0.0%	0.0%	0.0%	0.0%	0.0%
IRPC		Exempt	591	0.0%	0.0%	0.0%	0.0%	0.0%
		Simplified	440	58.5%	1.4%	40.9%	-606.7%	1579.1%
		Normal	0	0.0%	0.0%	0.0%	0.0%	0.0%
ISPC		Exempt	591	0.0%	0.0%	0.0%	0.0%	0.0%
		Subject	440	8.8%	0.5%	6.1%	-91.0%	236.9%

Note: 2009 estimates based on reported revenue data updated by annual average inflation from MPD (2009) to reflect new thresholds.

The ISPC also includes a high share of exempt firms. For those firms subject to the ISPC, the clear advantage is the effective rate of only 8.8 percent of value added. Further, the standard deviation of 0.5 implies that 68 percent of firms have effective tax rates lying within the range 8.3 and 9.3 percent. However, the range of effective rates is still large, with some firms potentially subject to an effective rate of 236.9 percent, that is, more than two times their total value added. This is a reflection of the problem of calculating tax revenues on the basis of turnover alone and as such represents a major deterrent to tax compliance for firms with relatively small margins which therefore have low levels of value added in relation to their total turnover.

An approximate estimate of the overall revenue effect of the reforms on this sample can be calculated by comparing the inflation adjusted revenue estimated for the 2005 regime with that estimated for the 2009

regime. Although highly approximate, and based on the assumption that all firms would comply under both regimes, this suggests a decline in revenue from this group of firms of 12.7 percent.

In sum, the increase in the number of firms with tax exemption represents a potentially important step in encouraging formality by reducing the cost of tax compliance for small firms. Further, the ISPC represents a decline in effective tax rate in comparison with the IRPC and VAT simplified regimes. Nonetheless, given the potential information constraints without clear benefits, it is not clear that firms would opt to comply. Further, the reality raises practical issues of compliance, such as the ability to prove the level of sales, keep books, and even register for the tax, something discussed in more detail by Bolnick and Byiers (2009).

## **SME STRATEGY**

In addition to the fiscal reforms undertaken to simplify the system and reduce the burden on small taxpayers, the government has adopted an SME Strategy, approved by the Council of Ministers in 2007.

This highlights the following constraints to small and medium enterprises:

1. Excessive regulatory barriers
2. High finance costs and limited access to finance
3. Poorly qualified workforce
4. High tax burden and costs of tax compliance
5. Poor access to markets
6. Weak horizontal and vertical linkages between firms
7. Lack of entrepreneurial spirit.

The SME strategy is intended to help address these issues and thereby help promote employment creation, product diversification and increased competition. The strategy notes that the source of competitiveness for MSMEs should be their flexibility, their agility within the marketplace and capacity to establish networks of contacts. Much of the strategy is due to be carried out through the newly established IPEME (Instituto para Pequenas e Médias Empresas – SME Institute) which is still in the early stages of defining its organizational structure and defining its activities.

In order to attain the objective of strengthening the MSME sector, the two main pillars established are: i) establish a link with foreign capital; ii) stimulate new enterprises and strengthening of existing firms. In turn, this is to be achieved by improving the business environment, strengthening of capacity for technology adoption and management, and direct strategic support to SMEs.

The SME strategy envisages “negative licensing”, that is, that all firms are exempt except those operating in listed sectors; and simplified and educational inspections for SMEs. It also proposes several measures for improving credit access including credit guarantee institutions to intermediate between SMEs and banks; the use of leasing through financial institutions for SMEs to purchase equipment; the creation of investment funds; and actions to further stimulate SME credit through the banking system. It also highlights the need to analyze the impact of the new labor law on competitiveness and to encourage sourcing from SMEs in government procurement practices. They also propose actions to encourage SMEs to agglomerate according to sector, in designated industrial parks or the equivalent for other sectors.

It is difficult to predict the impact of these reforms on the current sample of firms. Clearly the focus on providing benefits to formal firms through leasing and access to investment funds may have a positive impact, particularly those with a relatively low ISPC burden. Nonetheless, the process to access these mechanisms would also require to be maintained simple. At the same time, it must again be recognized that even formal firms manage to operate informally.

In addition to this work, the World Bank has commissioned a study into the licensing and registration requirements for firms, with a view to reducing these considerably. This is in addition to recent simplifications referred to above, and is likely to further lower the costs of formality, relative to the benefits, with potential increases in formal compliance.

# 7. Conclusion

Despite the predominance of the informal micro-enterprise sector in developing economies, much remains to be understood regarding its role, its potential for growth and employment creation, and in particular the benefits, if any, of being formal in a developing country economy.

This paper uses data from informal Mozambican non-agricultural microenterprises to analyze issues relating to informality. The key finding of this analysis is that, controlling for as many characteristics as possible, on average there is a productivity premium from holding a registration document, even though all sample firms are informal in the strictest sense. Based on interview and discussion, this is interpreted to reflect a degree of legitimacy which is conferred on registration document holders, allowing them to concentrate on their business rather than on evasion techniques.

While the mean effect is positive, this hides considerable variation across the enterprises. It appears that the benefits of holding a registration document depend on the sector, firm size and education level of the manager, implying that tipping the cost-benefit balance further in favor of benefits to registration might encourage further formalization for firms for which the benefits in 2005 were not sufficiently high.

At a more basic level, the analysis suggests that manager education level is an important determinant of whether or not a firm holds a registration document. This may be due to a greater understanding of the rules and regulations or a higher implicit level of productivity which is magnified by holding the registration document, allowing higher productivity for already more productive enterprises. Importantly, in this regards, 60 percent of the sample enterprises are unaware of their illegal status. Nonetheless, 40 percent implicitly acknowledge their illegality and would therefore be potentially susceptible to changes in policy affecting the cost-benefit tradeoff of formality. Further, given that the vast majority of managers have limited education, this implies only a small pool of these firms which are potentially gaining “unfair advantage” through their informality.

The simulation of the impact of the new small taxpayers tax (ISPC) suggests that although a large share of sample firms would be exempt, the range in effective tax burdens for those not exempt is large, with some firms liable for as much as 230 percent of their value added income. Again this implies the need to recognize differences within the informal economy, and the potential impact this might have on firms in terms of their willingness to declare sales above the lower threshold level if indeed they reach the point of being formal and registered for taxes. Nonetheless, the ISPC appears to be a step in the right direction

Despite these findings, capital and productivity levels are exceptionally low. This implies that there may not be much potential for firm growth from these firms, and further that there may not be a lot of revenue to be gained through taxation of these firms, even if they were willing to comply.

In more broad terms, the analysis highlights the heterogeneous nature of informal economic activity in a country such as Mozambique. Although questions remain regarding the channels through which registration improves firm performance and the external validity of the results may be questionable, the implications for private sector development and employment creation are important. If indeed even basic registration conveys benefits even to informal firms, greater employment growth in countries with a large microenterprise sector may rely on simplifying registration procedures and eliminating the disincentives

to growth once an enterprise has displayed success in surviving. Further effort to develop more explicit benefits to operating formally, or perhaps the ability to operate free of unofficial costs once registered might also increase formality. This implies the need not only for simplification, as is already taking place, but also greater clarity and awareness regarding the obligations of enterprises and benefits such as free access to training in business practices such as book-keeping and banking.

Efforts to minimize the costs to being informal could be include centralizing government records for tax, and labor and registration and actively seeking enterprise registration in a non-punitive way. With minimal tax obligations for very small firms, and further incentives to register, explicit or implicit, efforts to formalize micro-enterprises should be considered within the broader view of encouraging investment rather than sanctioning firms. In the sample here, firms with four workers or more suffer from having a registration document, suggesting that this is forced upon them rather than an active choice. This may suggest that policy reforms need to focus on improving operating conditions as firms grow so that smaller firms are motivated to expand within the formal economy. This would be assisted with a change in mentality from control and sanction of the informal sector, to a collaborative approach to raising opportunities for small enterprises and encouraging formalization in a clear a simple way.

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# Appendix

## I. THE INFOR SURVEY

The INFOR survey inquired about the informal employment characteristics of all household members aged seven or over with a view to better understanding the "non-observed economy". The focus in this study is on the sub-sample of non-agricultural, self-employed entrepreneurs, thus excluding those serving as employees and those reporting agricultural activities as their principal activity.

The full INFOR sample was taken from the 1997 population census, consisting of 1040 primary sampling units with equal probability, and the same number of enumeration areas sampled with probability proportional to the number of households in the area. Households were randomly sampled within the enumeration areas. This led to a target sample of 6900 households, 3600 of which were urban and 3300 of which were rural, producing data from 6402 households once refusals, and validation were taken into account (INE, 2005). The full sampling formula etc. can be found on p66/67 of the INE (2005) report.

The decision to focus here on non-agricultural enterprises was based on their very different nature from the agricultural sector, but also the desire to provide insights into the context of promoting modern employment, meaning for the most part, industry and services enterprises, where most value-added is to be found. In order to address the issue whether or not the informal sector might be unfairly undermining the modern production sector also requires that the sub-sample reflect enterprises rather than household farmers.

The approach adopted also allows connections to be established between owner characteristics and enterprise performance, important for the more in-depth performance analysis carried out below. Limiting the sample to employers is therefore intended to ensure accurate and detailed data on informal enterprises, in particular on enterprise characteristics and finances. It is recognized that additional interesting studies might be carried out using those survey responses excluded here.

## II. INFORMAL ENTERPRISES BY SECTOR AND PROVINCE <sup>66</sup>

	Niassa	Cabo Delgado	Nampula	Zambezia	Tete	Manica	Sofala	Inhambane	Gaza	Maputo	Maputo C.	Total	N
Total	3%	6%	7%	2%	7%	8%	11%	6%	8%	20%	23%	100%	1136
Primary Sector	3%	18%	6%	9%	6%	15%	12%	12%	6%	3%	9%	100%	33
Food & Drinks	1%	12%	20%	1%	20%	4%	8%	7%	5%	1%	19%	100%	74
Textiles & Garments	0%	9%	17%	0%	0%	9%	4%	4%	17%	22%	17%	100%	23
Wood & Furniture	0%	12%	16%	2%	9%	9%	9%	9%	12%	14%	7%	100%	43
Chemicals & Other Non	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	100%	2
Metal Goods & Electr.	0%	0%	5%	0%	5%	11%	11%	11%	11%	26%	21%	100%	19
Water Treat & Dist.	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	1
Construction	1%	9%	6%	0%	12%	10%	6%	7%	12%	13%	24%	100%	68
Wholesale Trade	2%	2%	2%	0%	2%	7%	7%	0%	24%	30%	24%	100%	54
Retail Trade & Dom. R	3%	5%	7%	1%	6%	8%	12%	6%	7%	22%	24%	100%	737
Rest.s & Hotels	0%	0%	14%	14%	0%	0%	0%	14%	0%	29%	29%	100%	7
Transport & Tr. Servi	0%	5%	0%	5%	5%	5%	10%	0%	5%	30%	35%	100%	20
Other Services	2%	7%	2%	2%	5%	11%	11%	2%	5%	20%	33%	100%	55
N	29	68	85	19	84	92	121	64	92	222	260	1136	

<sup>66</sup> Enterprise census data show that the largest concentration of firms is in Maputo City (28.3 percent of total firms), representing 36.7 percent of all firms when Maputo province and city are combined. Sofala province, containing the second largest city Beira, has the next largest share, representing 18.3 percent of census firms. Gaza and Nampula follow with 9.6 and 7.8 percent, respectively, then Manica (6.7 percent), Inhambane (6.2 percent), Tête (5.0 percent), Cabo Delgado (4.6 percent), Zambézia (2.8 percent) and Niassa (2.4 percent). The low share of enterprises in Zambézia is unexpected given its high population density, although this may be due to a high level of small-scale agricultural production.

### III. SUMMARY STATISTICS FOR PRINCIPAL VARIABLES IN PROBIT

	No Registration Document						Registration Document					
	N	mean	S.D.	Median	Min.	Max.	N	mean	S.D.	Median	Min.	Max.
Value-added ( <i>millionMts</i> )	705	2.558	0.21	0.9	-6.6	40.8	148	4.558	0.61	1.781	-3	41
V.A. p/worker ( <i>millionMts</i> )	705	1.983	0.16	0.795	-6.6	35.58	148	3.211	0.40	1.458	2.46	32.5
Age (Years)	705	35.52	0.45	34	13	89	148	37.34	0.88	36	17	66
Basic Primary Educ.(d)	705	0.762	0.02	1	0	1	148	0.709	0.04	1	0	1
Secondary Education + (d)	705	0.123	0.01	0	0	1	148	0.216	0.03	0	0	1
Experience Years	696	6.943	0.32	4	0	47	147	9.231	0.75	7	0	49
Male (d)	705	0.461	0.02	0	0	1	148	0.541	0.04	1	0	1
Household Head (d)	705	0.565	0.02	1	0	1	148	0.649	0.04	1	0	1
Married (d)	705	0.638	0.02	1	0	1	148	0.703	0.04	1	0	1
Urban (d)	705	0.902	0.01	1	0	1	148	0.905	0.02	1	0	1
Migrant (d)	705	0.348	0.02	0	0	1	148	0.392	0.04	0	0	1
Employees	705	1.36	0.05	1	1	23	148	1.635	0.20	1	1	28
Enterprise Age (Years)	705	4.65	0.23	2	0	40	148	7.412	0.65	5	0	38
Capital p/worker ( <i>millionMts</i> )	705	1.575	0.45	0.026	0	180	148	11.35	3.72	0.104	0	333.33
No. of Goods/Services	705	2.321	0.04	2	1	6	148	2.723	0.09	3	1	6
Value-chain Integration (d)	705	0.138	0.01	0	0	1	147	0.204	0.03	0	0	1
Final Demand (d)	705	0.922	0.01	1	0	1	148	0.912	0.02	1	0	1
Operate from Home (d)	705	0.367	0.02	0	0	1	148	0.108	0.03	0	0	1
Firm-Specific Premises (d)	705	0.126	0.01	0	0	1	148	0.48	0.04	0	0	1
Growing Profits (d)	705	0.153	0.01	0	0	1	148	0.169	0.03	0	0	1
Initial Own Investment (d)	705	0.504	0.02	1	0	1	148	0.534	0.04	1	0	1
Hold Formal Loan (d)	705	0.023	0.01	0	0	1	148	0.054	0.02	0	0	1
Business Assoc. Member (d)	666	0.026	0.01	0	0	1	137	0.022	0.01	0	0	1
Share of Empl with no Educ.	705	0.093	0.01	0	0	1	148	0.044	0.02	0	0	1
Have a Second Activity (d)	705	0.133	0.01	0	0	1	148	0.142	0.03	0	0	1

Note: (d) symbolises a binary (1/0) dummy variable

### IV. PROBIT MODEL OF HAVING A REGISTRATION DOCUMENT - SPECIFICATION

Specifications are chosen with three objectives in mind: i) to provide propensity scores for matching; ii) to provide a basis on which to model participation as part of the switching model; and iii) to investigate the determinants of firm registration within this sample as an exercise in itself. While covariates might be chosen on the basis of their statistical significance for the second and third purposes, the matching process requires a more parsimonious specification given the need for variables that are good enough to obtain conditional independence between the outcome and participation equations without perfectly predicting participation.

Heckman and Navarro-Lozano (2004) state that “there is no support for the rule of selecting matching variables by choosing the set of variables that maximizes the probability of successful prediction into treatment or by including variables in conditioning sets that are statistically significant in choice equations”, although they do not suggest any alternative guidelines except that they find that matching

estimators perform best when, where available, variables regarding performance and behavior from prior to the program are included in the prediction of participation.

As in Fajnzylber et al. (2006), specifications (1) and (2) include variables considered exogenous to the treatment regime, while specifications (3) and (4) introduce firm attributes which improve the predictive power of the participation equation while accounting for unobservable attributes which are, however, potentially endogenously determined. This implies that specifications (3) and (4) are effectively measuring “the effects on the efficiency with which existing factors of production are used by similar treated and non-treated microfirms” (Fajnzylber et al., 2007) rather than the total effect of treatments on outcomes.

As only seven individuals completed more than secondary education and the years of education is not available, the two education categories used refer to having completed EP1 and/or EP2, the two primary school grades, and having completed secondary education or above. The comparison category is therefore no formal education or incomplete primary education.

## VI. PROBIT RESULTS FOR BEING REGISTERED: MARGINAL EFFECTS

	(1)	(2)	(3)	(4)
Age	0.017 [0.004]***	0.012 [0.004]***	0.008 [0.004]**	0.007 [0.004]*
(Age) <sup>2</sup>	0.000 [0.000]***	0 [0.000]***	0 [0.000]**	0.000 [0.000]
Primary Educ. (d)	0.082 [0.028]***	0.069 [0.030]**	0.072 [0.028]***	0.049 [0.027]*
Secondary Educ.+ (d)	0.251 [0.071]***	0.233 [0.072]***	0.217 [0.071]***	0.161 [0.068]**
Years of Experience		0.005 [0.001]***	0.002 [0.002]	0.002 [0.002]
Male (d)		0.011 [0.027]	-0.003 [0.026]	-0.012 [0.025]
Household Head (d)		0.011 [0.024]	0.004 [0.023]	-0.010 [0.023]
Married (d)		0.017 [0.022]	0.011 [0.022]	0.005 [0.021]
Urban (d)		0.051 [0.025]**	0.051 [0.024]**	0.042 [0.020]**
Migrant (d)		0.034 [0.026]	0.04 [0.026]	0.031 [0.024]
ln(Employees)			0.073 [0.020]***	0.057 [0.018]***
Enterprise Age			0.01 [0.004]**	0.005 [0.004]
(Enterprise Age) <sup>2</sup>			0 [0.000]	0.000 [0.000]
Capital Stock per Worker			0.002 [0.000]***	0.001 [0.000]***
Number of Products				0.023 [0.008]***
Value-chain Integration (d)				0.032 [0.027]
Final Demand (d)				-0.020 [0.041]
Fixed Firm Location (d)				0.226 [0.041]***
Operating From Home (d)				-0.071 [0.020]***
Food Sector (d)	-0.124 [0.025]***	-0.111 [0.030]***	-0.106 [0.029]***	-0.084 [0.025]***
Textiles and Garments (d)	-0.033 [0.077]	-0.067 [0.056]	-0.028 [0.073]	-0.040 [0.056]
Wood and Furniture (d)	-0.125 [0.023]***	-0.131 [0.017]***	-0.129 [0.013]***	-0.105 [0.012]***
Chem.s and other non-metals (d)	0.181 [0.342]	0.132 [0.321]	0.187 [0.301]	0.064 [0.179]
Metals & Electronics (d)	-0.095 [0.044]**	-0.104 [0.033]***	-0.095 [0.033]***	-0.062 [0.041]
Construction (d)	-0.14 [0.019]***	-0.14 [0.016]***	-0.131 [0.016]***	-0.102 [0.015]***
Wholesale Trade (d)	-0.07 [0.048]	-0.069 [0.048]	-0.042 [0.056]	-0.068 [0.030]**
Retail Trade (d)	-0.025	-0.002	0.021	-0.015

	[0.060]	[0.062]	[0.056]	[0.052]
Restaurants, Hotels etc. (d)	-0.045 [0.098]	0.011 [0.138]	0.021 [0.147]	-0.052 [0.060]
Transport (d)	0.06 [0.107]	0.08 [0.117]	-0.009 [0.087]	0.003 [0.076]
Other Services (d)	0.003 [0.072]	0.005 [0.075]	0.033 [0.081]	0.038 [0.073]
Cabo Delgado (d)	-0.047 [0.052]	-0.044 [0.051]	-0.025 [0.055]	-0.039 [0.037]
Nampula (d)	-0.109 [0.031]***	-0.11 [0.028]***	-0.098 [0.029]***	-0.096 [0.016]***
Zambezia (d)	-0.131 [0.017]***	-0.125 [0.017]***	-0.113 [0.020]***	-0.100 [0.011]***
Tete (d)	-0.032 [0.056]	-0.027 [0.056]	-0.006 [0.060]	-0.011 [0.045]
Chimoio (d)	-0.053 [0.049]	-0.05 [0.049]	-0.026 [0.054]	-0.048 [0.032]
Sofala (d)	-0.045 [0.050]	-0.043 [0.049]	-0.03 [0.050]	-0.056 [0.030]*
Inhambane (d)	-0.044 [0.053]	-0.033 [0.056]	-0.021 [0.057]	-0.049 [0.033]
Gaza (d)	-0.05 [0.050]	-0.034 [0.053]	-0.022 [0.054]	-0.043 [0.034]
Maputo Prov. (d)	-0.102 [0.039]***	-0.099 [0.039]**	-0.088 [0.038]**	-0.104 [0.023]***
Maputo City (d)	-0.099 [0.041]**	-0.099 [0.042]**	-0.085 [0.042]**	-0.084 [0.029]***
Constant	0	0	0	0.000
Observations	1136	1121	1119	1118
No. of Reg'd Firms	183	183	183	183
Prop'n of Correct Predictions	0.038	0.71	0.814	1.131
Pseudo-RSq	0.084	0.107	0.143	0.252
Chi2	81.891	105.359	137.509	227.593
P>Chi2	0.000	0	0	0.000

Note: (d) marks a dummy (1/0) variable; \* 10% significance, \*\* 5% significance, \*\*\* 1% significance. Sector and location dummies included but not reported. Observations from Construction and Metal & Electrics sectors and Zambezia dropped as perfectly predict non-registration.

## VII. PROPENSITY SCORE MATCHING

Matching methods attempt to identify the effect of some program variable by comparing the outcomes of similar individuals from each regime. While ideally firms from the participating and non-participating regimes might be matched across a wide array of explanatory variables in order to assure comparability, this results in an overly complex matching process of high dimension. Instead, Rosenbaum and Rubin (1983) show that matching can also be carried out using propensity scores, the probabilities of participation by an individual. This is subject to some assumptions.

### Underlying Assumptions

Unconfoundedness: given a set of observable covariates  $X_i$  which are not affected by regime choice, potential outcomes must be independent of regime choice. Dehejia and Wahba (2002) suggest an

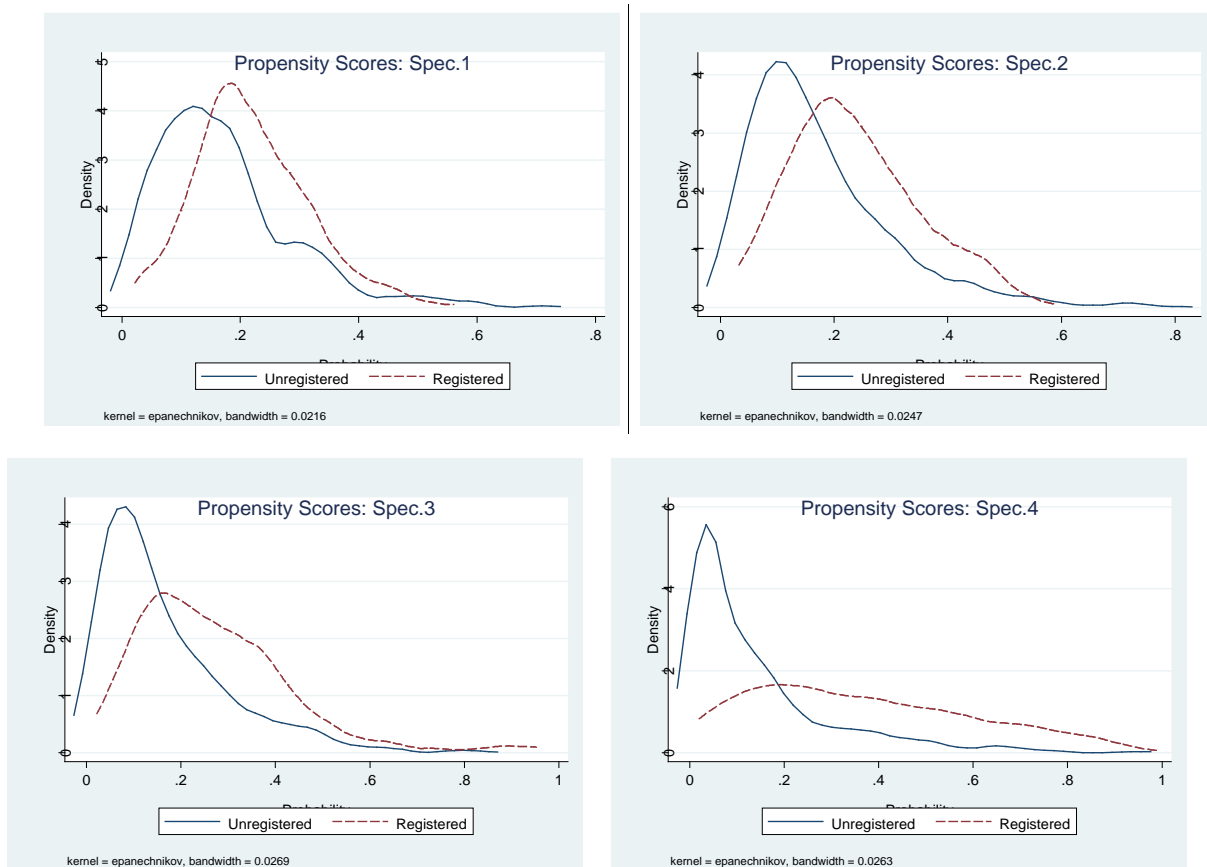
incremental inclusion of variables to gauge the sensitivity of the estimates to potential violation of the unconfoundedness assumption as it is not directly testable. For this reason, the current analysis includes four specifications with increasing numbers of variables which potentially violate this assumption. Further, if endogenous regressors are positively affected by treatment, the impact of the treatment itself will be under-estimated, thus constituting a *lower bound* to the treatment effect.

Common Support: the second assumption is that there are no firms with a probability of one or zero of being registered, and that the probability distributions overlap one another.

## Common Support

Figures 5.1 a) to d) give the kernel density distributions of the propensity scores of firms, as estimated according to the four specifications presented in chapter 5. As these show, although there is a fairly wide region of common support under the first specification, this decreases with the introduction of more variables in the probit specification, potentially introducing bias in the estimated outcome effects which is in addition to potential selection bias effects (Heckman, Ichimura and Todd, 1997).

**Figure 0.1 a-d) Propensity Scores for Registered and Unregistered Firms**



The problem of weak support can be reduced by allowing matching with replacement (i.e. firms can be used for matching more than once) and by eliminating individuals from the control group from outside the common support region.<sup>67</sup>

Following matching, tests are run for covariate imbalance prior to and after matching, the results of which are not reported but show that the means of all covariates are balanced between the treated and matched groups under radius and kernel matching. Differences emerge for a very small number of covariates under nearest neighbor matching, implying that these matching methods introduce more bias than the radius and kernel methods.

## Detailed Registration Effects

These results are based on estimations using the four specifications mentioned with matching based on the four techniques of: nearest neighbor, the nearest 3 neighbors, radius matching with a caliper of 0.01, and kernel matching using the Epanechnikov kernel with a bandwidth of 0.06, the Stata default bandwidth for kernel matching using Stata's `-psmatch2`. Statistical inference is all based on bootstrapped errors with 300 replications. The figures reported in the text are the means of the estimated effects using radius and kernel matching given their higher degree of statistical significance under all four specifications.

### Average Effect of Registration on Labor Productivity for Registered Firms

Spec.	Nearest Neighbor	Nearest 3 Neighbors	Radius (0.01)	Kernel	No. of Obs.
(1)	0.88 [0.75]	0.87 [0.58]	1.00 [0.43]**	1.00 [0.48]**	853
(2)	1.05 [0.69]	0.89 [0.59]	0.90 [0.53]*	1.00 [0.49]**	853
(3)	1.14 [0.71]	1.07 [0.63]*	1.06 [0.58]*	1.09 [0.49]**	853
(4)	1.27 [0.64]**	1.17 [0.65]*	1.05 [0.59]*	1.02 [0.47]**	852

Note: Bootstrapped standard errors (300 replications) in parenthesis. \*\*\* statistically significant at 1%, \*\* significant at 5%, \* significant at 10%.

### Percentage Benefit of Registration

Spec.	Nearest Neighbor	Nearest 3 Neighbors	Radius (0.01)	Kernel	No. of Obs.
(1)	0.28	0.28	<b>0.32</b>	<b>0.32</b>	853
(2)	<b>0.34</b>	0.29	<b>0.29</b>	<b>0.32</b>	853
(3)	0.34	0.29	<b>0.29</b>	<b>0.32</b>	853
(4)	0.37	0.34	<b>0.34</b>	<b>0.35</b>	852

Note: Entries in bold are statistically significant at at least 10 percent.

<sup>67</sup> This is can be carried out automatically using the `-psmatch2-` command in Stata. An alternative approach would be to drop a certain percentage of firms at either end of the propensity score distribution although this may result in the unnecessary dropping of some observations. In effect the approach adopted does not suffer from major lack of overlap, as evidenced by the graphs presented here.



## **VIII. LIST OF INTERVIEWEES**

- António Sousa Cruz, Director, DNEAP, MPD.
- Francisco Fernandes, Consultant, Metier.
- Juan Estrada, Consultant.
- Fion de Vletter, Independent Consultant.
- Domingas Muchine, Director, GASP (Office for Private Sector Support), MIC.
- Odete Tsamba, Director, IPEME (Institute for Small and Medium Enterprises)
- Ashok Menon, TIPMOZ project director, MIC.
- Joint Donor and Government Private Sector Working Group participants.
- Natividade Bule, President, Association of Entrepreneurs
- Sudecar Novela, President, Association of Informal Importers and Traders