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Business constraints and growth potential of micro and small manufacturing enterprises in Uganda

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Business Constraints and Growth Potential of Micro and Small Manufacturing Enterprises in Uganda

Esther K. Ishengoma and Robert Kappel

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Business Constraints and Growth Potential of Micro and Small Manufacturing Enterprises in Uganda

Abstract

Ugandan micro- and small enterprises (MSEs) still perform poorly. The paper utilizes data collected in Uganda in March and April 2003 to analyze the business constraints faced by these MSEs. Using a stratified random sampling, a sample of 265 MSEs were interviewed. The study focuses on the 105 manufacturing firms that responded to all questions. It examines the extent to which the growth of MSEs is associated with business constraints, while also controlling for owners' attributes and firms' characteristics. The results reveal that MSEs' growth potential is negatively affected by limited access to productive resources (finance and business services), by high taxes, and by lack of market access.

Keywords: small enterprises, informal sector, growth, manufacturing, Uganda, productivity, business services

JEL Codes: D21, E26, G38, H25, L25, L26, L6, O12, O14

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Zusammenfassung

Unternehmenshindernisse und das Wachstum von Kleinst- und Kleinunternehmen des verarbeitenden Sektors in Uganda

Ugandische Kleinst- und Kleinunternehmen (KKU) des verarbeitenden Sektors entwickeln sich nur sehr schwach. Ihr Beitrag zum industriellen Wachstum ist gering. Basierend auf einer Datenerhebung von 265 KKU im März und April 2003 untersucht diese Studie die Wachstumshindernisse von KKU in Uganda. Sie analysiert, in welchem Umfang das Wachstum durch spezifische Faktoren beeinträchtigt wird. Die Ergebnisse werden in verschiedenen Regressionen u. a. mit Firmeneigenschaften kontrolliert und zeigen, dass sich hohe Steuern, ein eingeschränkter Marktzugang sowie der erschwerte Zugang zu produktiven Ressourcen in den Bereichen Finanzen und Dienstleistungen negativ auf das Wachstum von KKU auswirken.

Business Constraints and Growth Potential of Micro and Small Manufacturing Enterprises in Uganda

Esther K. Ishengoma and Robert Kappel

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5 Regression Results: Business Constraints and Other Factors Inhibiting the Growth of MSEs

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1 Introduction: Literature Review

Micro- and small enterprises (MSEs) in Uganda play a significant role as they employ 90 percent of the active nonfarming population (UBOS 2003). Approximately one-third of the Ugandan population is engaged in entrepreneurial activities, particularly MSEs, and there are only a few medium and large enterprises. Many Ugandan enterprises have less than 50 employees, and the majority have less than 20 employees. MSEs are not growing. The industrial sector, which is dominated by MSEs, still contributes less than 20 percent to the GDP and has not been performing impressively. From 1997/98 to 2005/2006 the manufacturing sector's annual growth rate was only 1.3 percent. The sector's efficiency has been decreasing, and its technical efficiency[1] is much lower (that is, 0.19) than that of manufacturers in Cameroon, Ghana, Kenya, and Zimbabwe (Gauthier 2001).

[1] Technical efficiency (using stochastic production frontier models) is the ratio between actual and potential output (see Söderbom and Teal 2004b; Gauthier 2001).

The modern African manufacturing sector is small and stagnant; there is little investment, and the sector has not managed to break into export markets. African entrepreneurs face significant uncertainty with regard to demand, reliability of infrastructure, corruption, trust, prices, and so on. Most investment is held back due to risks. Some firms grow and others do not. Even many of the larger firms do not grow (Bigsten and Söderbom 2005, Tybout 2000). This can (also) be illustrated for Uganda. A comparative analysis of Ugandan firms in different size categories conducted by Gauthier (2001) indicates that the average low performance of the manufacturing and other sectors is worsened by the poor performance of MSEs. MSEs and large enterprises in the manufacturing industry grow differently: the larger enterprises have higher growth rates than the smaller ones. Reinikka and Svensson (2002) state that even the larger Ugandan enterprises face severe constraints. In their study of medium and large enterprises, they have shown that investment in productive assets is constrained by a low capacity for private investment in public complimentary assets (for example., generators), which is needed because of the poor quality of public infrastructure in Uganda and MSEs' limited access to this infrastructure.

Compared to large enterprises, MSEs are less efficient and incur high costs per unit of revenue. They use labor-intensive technologies to compensate for the lack of technical capacity in order to perform well. The larger firms are more capital-intensive than the smaller ones. Factors contributing to the unimpressive performance of Ugandan MSEs, as mentioned in different studies, are limited capital and limited access to finance (Okurut and Bategeka 2006; Kappel, Lay, and Steiner 2004; Uganda Microfinance Outreach Plan 2001; UCAP 2001; Mugume and Obwona 2001). Given MSEs' lack of access to external finance, their decisions to upgrade their equipment and machinery by making new investments are further constrained by limited internal sources of financing. Several papers indicate additional constraining factors such as inadequate provision of public infrastructure and services that affect private investment (Svensson and Reinikka 2001), unfavorable taxation systems, and a heavy regulatory burden and administrative bureaucracy (Keefer 2000). Other authors mention limited access to differentiated markets, which might be related to a lack of forward linkages (Kappel, Lay, and Steiner 2004), the concentration of MSEs in low-quality production (Sengendo et al. 2001), high transport and transaction costs (Rudaheranwa 2000, 2006; Wood and Jordan 2000), corruption (Svensson 2002), low trust and minimalist entrepreneurial strategies (Kappel 2004; Sørensen 2001), education and poor managerial and skills competence (Nalumansi et al. 2002; Nel and Shapiro 2003), weak support institutions (Krasemann 1996; Kyomugisha 2001), a lack of sectoral competitiveness, and an overall neglect of MSEs in Uganda (Cotton et al. 2003).[2]

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[2] For development of African micro- and small enterprises see McCormick 1999, Kappel 2004; for medium and large manufacturing firms, Söderbom and Teal 2004a, Bigsten and Söderbom 2005; and in general, Liedholm and Mead 1999.

The observations of most of the reviewed studies are based on descriptive results, which are unable to show how the stated business constraints affect the performance of MSEs while controlling for other factors (viz., owner-managers' attributes and firms' characteristics and resource endowment). Similarly, the majority of studies conducted in other developing countries on factors (particularly the business environment) explaining the growth potential and performance of MSEs are more descriptive/exploratory in nature.[3] Those studies that utilize multiple regression analysis (e.g., Ishengoma 2004a; House 1984; Söderbom and Teal 2004a; Beck, Demirgüç-Kunt and Levine 2005) often overlook business constraints. Some of the cross-country analyses focus on larger enterprises while leaving out micro- and small enterprises (for instance, Bigsten and Söderbom 2005).

Controlling for other factors when associating MSEs' growth potential to business constraints is very important because MSEs are heterogeneous (see Ishengoma and Kappel 2007; Söderbom and Teal 2004a) and hence differently affected by business constraints. Some business constraints might be serious problems to micro firms in some subsectors but not to others. For example, limited access to long-term financial resources and operation space are the major obstacles to the growth potential of Ugandan manufacturing MSEs in wood/furniture and metal but not to those in textiles (Sengondo et al. 2001). These obstacles are also identified by House (1984) as serious constraints to manufacturers but not to traders and service providers. These examples emphasize the need to control for the subsectors' or firms' characteristics when analyzing the extent to which business constraints affect the performance of MSEs.

Given the role played by MSEs in Uganda, a study that specifically address how the business environment affects their growth potential is very important. In line with Reinikka and Svensson's (2001) postulate that the rate of economic growth is positively associated with the rate of investment, factors in the business environment which constrain investment could in turn be the root cause of the poor economic growth of the manufacturing sector in Uganda. The removal of the impediments to entrepreneurship could be a powerful mechanism for growth.

To fill the identified gaps, this paper tries to examine the extent to which the growth potential and performance of MSEs are associated with business constraints (viz., investment in productive assets, high tax, and limited access to market and productive resources such as loans and business services (BSs)), while controlling for owners' attributes and firms' characteristics. The paper adds to the existing body of knowledge on the issue as it utilizes advanced analytical approaches, viz., a linear regression model and a logit model, which provide for the control of other variables.

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[3] See, for example, House (1984) on business constraints (viz., inability to establish market, limited liquid capital, limited possibilities to expand investment) faced by Kenyan informal manufacturers; Morrisson (1995) on complicated tax system and lack of access to medium- and long-term loans as major problems faced by micro enterprises in Algeria, Tunisia, and Jamaica. See Liedholm and Mead (1999) for an excellent survey of all aspects of small-enterprise growth.

The rest of the paper is organized as follows. Section 2 gives an economic overview of MSEs and the business environment in Uganda. Section 3 conceptualizes the relationships between business constraints and MSEs' growth and performance. Based on the literature reviewed, this section states the hypotheses to be tested. Section 4 describes the research methodology followed by this paper, while Section 5 presents and discusses the empirical findings. Section 6 concludes and offers recommendations.

2 The Manufacturing Sector and the Business Environment in Uganda

2.1 An Overview of the Manufacturing Sector

During the last ten years Uganda has achieved an average GDP growth rate of 6.7 percent, which has mainly been accounted for by the industrial and service sectors.[4] Between 1997/98 and 2005/06 the Ugandan manufacturing sector contributed an average of 9 percent to total GDP annually, while the service and agricultural sector accounted for 40 percent. The industrial sector's annual growth rate was approximately 1.3 percent. This rate is low and likely to hinder Uganda's expectation of poverty reduction and meeting its millennium development goals (MDGs) (see Kappel, Lay and Steiner 2005; Lawson, McKay and Okidi 2006; Bussolo, Godart, Lay and Thiele 2006).

Uganda's manufacturing sector is small and not really growing. The main indicators reveal its low productivity. For example, in 2002, the capacity utilization of the Ugandan manufacturing sector when compared to that of other African countries was around the mean (58 percent) but lower than that of the manufacturing sectors in Kenya (63 percent) and Côte d'Ivoire (71 percent), as illustrated in Figure 1.[5] Uganda's labor productivity is also lower than that of other African countries, whereas its monthly wages for unskilled labor are higher than those of India and China (Steel 2003). These are indications of the low competitiveness of the Ugandan manufacturing sector at the international and regional levels. Steel (2003) also makes it clear that the labor productivity of micro-, small and medium enterprises (MSMEs) in Uganda is lower than that of MSMEs in Kenya and Tanzania, while the labor productivity of large firms in Uganda is higher than that of the latter two countries.

Most manufacturing enterprises in Uganda are MSEs (UBOS 2003), of which microenterprises (that is, those with less than 5 employees) are the most important. There are approximately

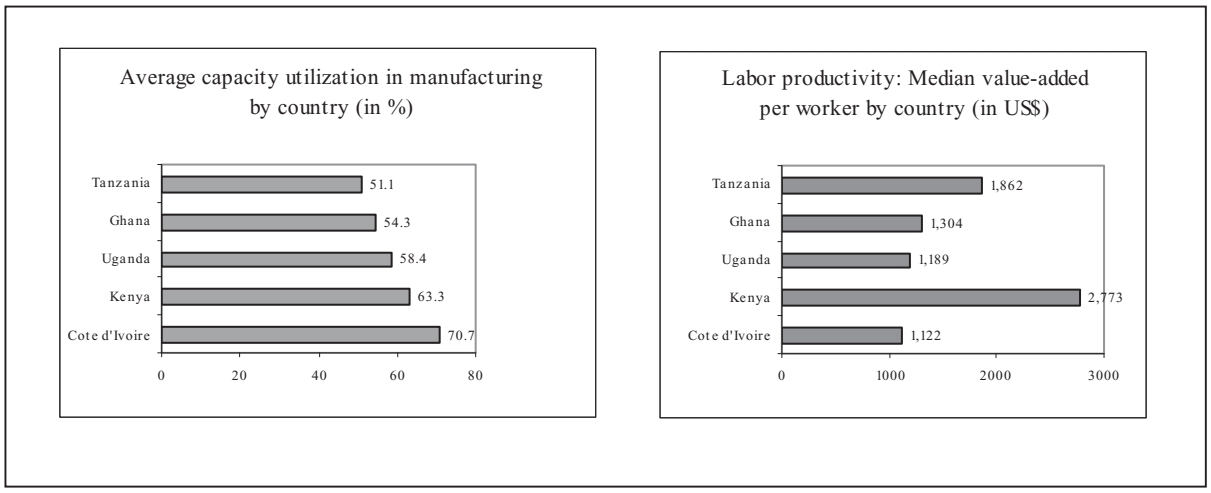
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[4] The agricultural sector accounted for 38 percent of GDP in 2002/03, down from approximately 48 percent in 1992/93, and employed about 67 percent of the workforce in 2002/03. Growth in agriculture was the basis of Uganda's poverty reduction achievement in the 1990s. It was accompanied by important structural change within agriculture towards better market integration of farmers. The coffee boom of the mid-1990s also played an important role in reducing poverty (see Kappel, Lay, Steiner 2005; Deininger, Okidi 2001; Bussolo, Godart, Lay and Thiele 2006).

[5] Note that the data for Uganda are from 2002, while those for other African countries (for example, Tanzania, Zambia, Ghana, Cameroon) are from the mid-1990s. Since some of these countries experienced an increase in capacity utilization after economic liberalization and privatization, it is possible that their capacity utilization in 2002 was higher than that of the Ugandan manufacturing sector.

800,000 MSEs that employ about 90 percent of the active nonfarming population. In spite of the contribution of these firms to employment, their performance and growth have been poor, a situation that worsens the overall performance of the Ugandan manufacturing sector and the economy at large. According to Reinikka and Svensson's (2001) statistics, these firms seem not to upgrade their investment, are inefficient, and incur high costs per unit of revenue.

Figure 1: Ugandan Manufacturing Productivity as Compared to Other African Countries



Source: Steel, W. (2003): Investment Climate Assessment Uganda 2002/2003: Some Initial Results and Comparisons, Paper Presented to the Private Sector Competitiveness Workshop, Kampala, September 4, 2003.

2.2 The Business Environment in Uganda

The findings of Reinikka and Svensson (2001) and the World Bank (1994) on the *perceptions* of manufacturing enterprises regarding factors constraining their investment, future operations, and growth during 1994 and 1998 reveal a deteriorating business environment in Uganda. These studies, however, do not specifically indicate the perception of MSEs regarding factors constraining their performance, although compared to large firms, MSEs perceive business constraints differently and might be differently affected by them (see Klapper, Amit, Guillén, Quesada 2007; Burgess, Venables 2004).

As mentioned in the previous section, among the factors hindering the growth potential and performance of the manufacturing sector, particularly MSMEs, in Uganda is the poor business environment (that is, the presence of major constraints to investment, competitiveness, and growth). In 1998, Ugandan enterprises ranked high utility prices, high taxes, poor utility services (electricity, water, telephones), high interest rates, and corruption as major to severe obstacles (see Table 1). None of these obstacles were ranked as major or severe constraints in 1994.

In 1998, factors rated as moderate or major obstacles included access to finance, crime and security, uncertainty about government policies, lack of skilled labor, and exchange rate. In

1994, most of these obstacles were rated as minor or moderate constraints, but access to finance was rated the same, indicating a lack of improvement. The way enterprises ranked constraints to investment, future operations, and growth in 1994 and 1998 implies that the business environment in Uganda deteriorated during the intervening years.

Table 1: Ranking of Constraints to Investment, Future Operations and Growth in 1994 and 1998*

Factors	Ranking in 1998	Ranking in 1994
High utility prices	between 4 and 5	between 3 and 4
High taxes	between 4 and 5	–
Poor utility services (electricity, water, telephones)	between 4 and 5	between 3 and 4
High interest rates	between 4 and 5	between 3 and 4
Corruption	between 4 and 5	–
Access to finance	between 3 and 4	between 3 and 4
Crime and security	between 3 and 4	–
Uncertainty about government policies	between 3 and 4	between 2 and 3
Lack of skilled labor	between 3 and 4	between 2 and 3
Exchange rate	between 3 and 4	between 1 and 2

* Kind of obstacles: 5: severe; 4: major; 3: moderate; 2: minor; 1: no.

Sources: Reinikka and Svensson (2001) for 1998 ranking; World Bank (1994) for 1994 ranking.

Compared to other countries, in 2002/03 the percentage of firms in Uganda which indicated electricity, transport, cost of financing, tax rates, and access to financing as major or very severe constraints was higher than the percentage for firms in China and Turkey, but lower than that for firms in Kenya (Steel 2003). Though the reported number (frequency) of power outages in Uganda is slightly higher (37) than that of Kenya (33), the percentage of Ugandan firms (35 percent) which own generators is lower than that of Kenyan firms (70 percent). The difference might be explained by the domination of MSEs in the Ugandan economy, as these firms have a very low level of investment in complimentary public assets (Reinikka and Svensson 2002). In 2002/03, the percentage of large firms (69 percent) that owned a generator was more than two times higher than that of MSMEs (31 percent) (Steel 2003). The literature reviewed above does not specifically indicate either the perceptions of MSEs regarding the constraints or the effects of these constraints on MSEs' growth.

3 Business Constraints and the Growth of MSEs

The paper addresses four types of business constraints. These are limited market access, high tax rates, access to productive resources, and investment obstacles.

The theoretical consideration on the link between business constraints and the growth potential or performance of MSEs can be viewed from different angles. Business constraints may, on the one hand, limit physical capital accumulation. On the other hand, they may constrain a firm's ability to undertake its daily operations since they may reduce its internal

financing and its capacity to make proper business decisions. Moreover, they may interrupt a firm's business operations and therefore retard its performance.

The role of investment in economic growth has been acknowledged in different economic and or strategic management literature. At the macro level, the traditional approach to growth associates national or regional economic growth with capital accumulation (level of investment in physical assets). In the global value chain literature, it is argued that technical upgrading (that is, investment in modern technology) is among the ways to increase firms' competitiveness in the global market (Schmitz 2004; Morrison, Pietrobelli and Rabellotti 2006). Following the argument by Reinikka and Svensson (2001), factors that constrain firms' investment consequently limit their growth.

The business constraints under examination are expected to limit investment upgrading and therefore limit firms' growth potential and performance in several ways, as indicated in Figure 2. When MSEs have limited access to relatively differentiated markets, they are forced to operate in low-income market segments. This limits their levels of sales and profits since most of them compete for the same customers (Sengendo et al. 2001). Low sales and profit may discourage firms' future investments and therefore their growth. Moreover, the majority of MSEs, particularly those involved in manufacturing, have limited access to external financing. As a result, they depend mainly on their internal resources to finance investment (Ishengoma 2005; Reinikka and Svensson 2001; Arimah 2001; Muguma and Obwona 2001). Thus, low profit may imply limited internal resources, which may in turn limit firms' capacities to upgrade their investments.

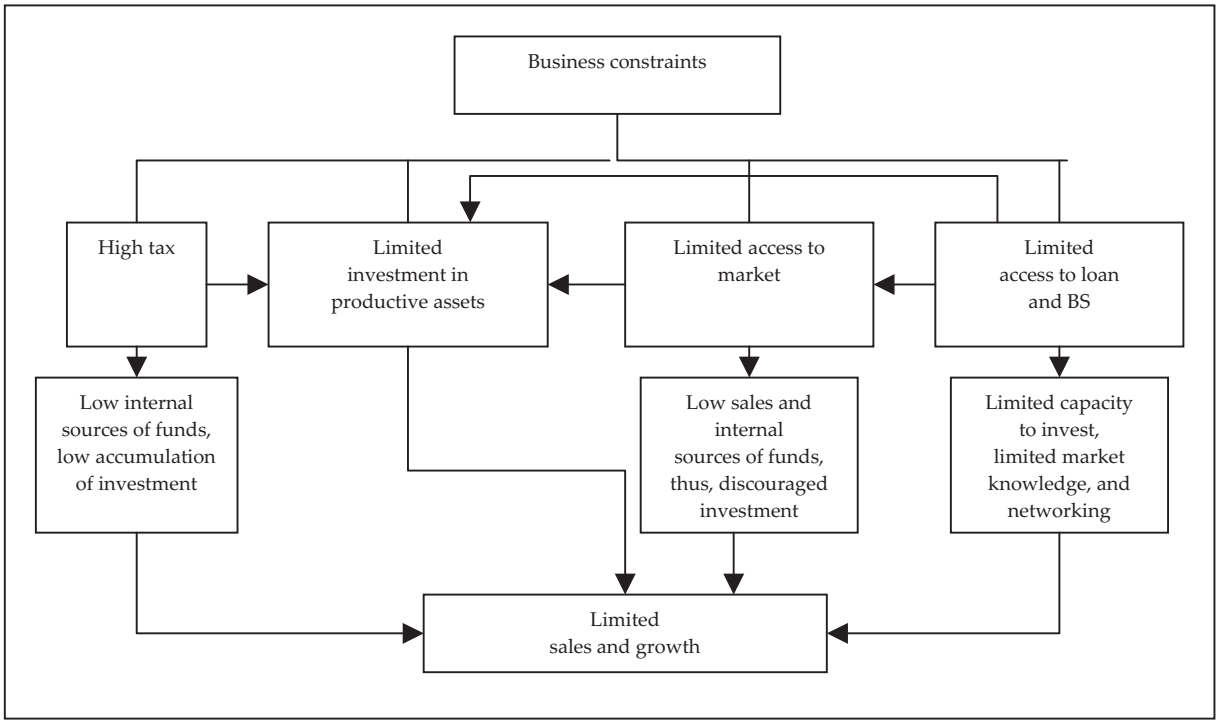
High tax rates reduce firms' internal sources of finance. In some developing countries, including Uganda, they also discourage MSEs from expanding their operations and becoming visible to governmental officials, since being visible or operating formally is likely to increase the cost of operating (Ishengoma and Kappel 2007). Based on the above arguments, the paper hypothesizes the following:

H1: Limited access to market (that is, limited customers coupled with high competition) is expected to limit the growth potential and performance of MSEs.

H2: High tax rates are expected to constrain the growth potential and performance of MSEs.

MSEs may overcome the problem of low returns if they have access to external finance (for example, loans). This may supplement their limited internal resources and therefore enable them to upgrade their investment (physical assets). Through investment upgrading, they are likely to increase their productivity (Ishengoma 2004b; Kimuyu 2004) and improve the quality of their products. Consequently, their market access can be enhanced, since they may be able to target customers with relatively higher incomes. They may also utilize loans to expand their level of operation by increasing output. This may increase their capacity utilization and therefore reduce overhead costs per unit, hence increasing the productivity and competitiveness of their products.

Figure 2: Conceptual Relationship between Business Constraints and Performance



Source: Authors' compilation.

Among the factors expected to hinder the growth potential of MSEs is their limited access to business services (BSs) (viz., marketing information, networking, short-term training, counseling and consultancy services) (Ishengoma and Kappel 2007). Access to marketing information is expected to increase MSEs' market knowledge about the behavior of their customers, price, and the best sources of inputs. Through counseling and consultancy services, MSEs can solve some of the technical problems they face. Their participation in networking activities may enable them to obtain more technical and marketing information about the behavior of their customers, in terms of honoring their debts; new customers; and business partners. All of the above are expected to decrease MSEs' transaction costs, increase their internal sources of finance for upgrading their assets, and raise their sales levels and productivity – hence leading to growth. Thus, the paper hypothesizes the following:

H3: Access to productive resources (BSs and finance) is expected to positively affect the growth potential and performance of MSEs.

Besides the above-stated obstacles, another factor which may cause MSEs to fail to upgrade their investments is the high cost of capital goods and related technical services. Rudaheranwa (2000, 2006) reports that poor transport systems and high domestic and regional transport costs in Uganda increase the price of capital goods, which in turn discourages investment in capital goods that have to be transported for long distances. This argument might apply to land locked countries which depend heavily on imported capital goods and spare parts.

The cost of capital goods and spare parts may also be inflated by complicated and bureaucratic import procedures as well as high taxes and corruption. Given limited funds and the indivisibility aspect of investment in physical assets, MSEs are likely to be highly discouraged from upgrading their investments in productive assets. Since the manufacturing sector in Uganda seems to be in its infancy, as it is dominated by MSEs, there might be a limited supply of technical services to facilitate investment upgrading and maintenance.[6] A limited supply of these services may result in high costs to obtain them, which might be unaffordable by MSEs. Therefore, the study hypothesizes the following:

H4: Investment obstacles are expected to constrain the growth potential and performance of MSEs.

4 Methodology and Data

4.1 Linking Performance and Growth Potential to Business Constraints

Based on the conceptual relationships described above, this paper models growth potential (*incositu*) and performance (*lnsalepm*) as functions of business constraints (*bconst*) while controlling for firm level and owner-manager variables (*contrv*). It is important to note that the majority of MSEs do not keep books of accounts that would facilitate the estimation of growth rates over a period of time. Thus, an interval question on the average level of monthly sales was used to solicit data on the value of sales attained by sample MSEs.[7] To reduce the diversity of the monthly sales values, the variable was transformed into the natural logarithm (*lnsalepm*). Sample MSEs were also asked to assess their income situation (that is, whether it increased, remained the same, or declined). To measure the perception of growth of their income, the paper constructs a dummy variable (*incositu*) as dummy one if a firm experienced growth in income and as zero if otherwise.

To associate performance (*lnsalepm*) with business constraints (*bconst*), the paper employs a linear regression model as presented below.

$$\ln Salepm_i = a + \beta_1 bconst_i + \beta_2 contrv_i + e_i \qquad 1$$

Whereby β_1 and β_2 are parameters to be estimated, while a and e are the constant and the error term, respectively. The terms *bconst* and *contrv* are business constraints and control variables. The approaches used to measure *bconst* and *contrv* are addressed in the following sections. The term *i* stands for a firm (i = 1, 2, 3, … 103).

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[6] See Ishengoma (2006) on the case of the limited supply of technical services faced by small bread manufacturers in Tanzania. The manufacturers were forced to consult technicians from Kenya, a situation that increased their maintenance costs.

[7] Sales intervals in Ugandan shillings (in "000") were 0-30; 30-50; 50-100; 100-200; 200-500; 500-1,000; and above 1,000. These intervals were transformed into mean values of 15; 40; 75; 150; 350; 750; and 1,000 to form a continuous variable.

In relating the growth potential of income (*incositu*) to business constraints (*bconst*), the paper utilizes a logit model. This model indicates the probability that firms will experience growth in income, given business constraints. The conditional expectation of the growth potential of income (*incositu*) given explanatory variables, business constraints (*bconst*), and control variables (*contrv*) is

$$E\left[in\cos itu_i \middle| bconst_i, contrv_i\right] = P\left[e_i \succ -V(bconst_i, contrv_i)\right]$$
$$= F\left[(bconst_i, contrv_i)\right] \qquad 2$$

where e_i is a disturbance term with mean zero, and variance equals one. P is the probability distribution function, and F is the cumulative normal distribution function with unity variance. The term V represents the explanatory variables (business constraints) and controllable variables. The term i stands for a firm (i = 1, 2, 3, … 105). The variables *bconst* and *contrv* are defined as earlier.

4.1.1 Business Constraints

This paper focuses on four categories of business constraints (*bconst*): limited market access, high tax rates, access to productive resources, and investment obstacles. The MSEs survey which the paper utilizes contains answers to the questions regarding the extent to which the success (income growth and sales performance) of businesses was constrained by limited market access, high taxes, and investment obstacles.

Sample firms were asked to rank different business constraints, including lack of customers and severe competition, as their first, second, third, or fourth problem according to the extent to which they constrain their business success. Using the responses to these questions, the paper captures limited access to market as dummy limited market access (*mktpr12*). This dummy equals one for firms that indicated lack of customers and/or severe competition as a first and/or second problem, and zero for those that indicated otherwise.

Responses to the questions regarding high taxes and investment obstacles were structured into unbalanced (negatively skewed) six-point scales: a very severe constraint, a constraint, an average constraint, a moderate constraint, a minor constraint, not a constraint at all. By using the responses to these questions, the paper captures high taxes (*formtaxd*) as dummy one for firms that indicated high taxes as a severe constraint, and zero for those that indicated otherwise.

Investment obstacles are indicated by two variables, viz., investment obstacles (*investob*) and investment trends (*invmac2a*). The paper utilizes responses to two questions (high cost of equipment and spare parts and high cost of maintenance services) to construct an average index value indicating *investob*.[8] Investment obstacles may be reflected by trends in invest-

[8] The two questions are weighted equally and, hence, allocated the maximum value of 1. The distribution of the values according to responses to a question is 0 for not a constraint at all (not a problem at all), 0.2 for a minor constraint, 0.4 for a moderate constraint, 0.6 for an average constraint, 0.8 for a constraint (a problem),

ment, in that those businesses facing more obstacles may fail to upgrade their physical assets, while those facing relatively less obstacles may upgrade their equipment, hence experiencing growth in investment. Thus, responses to a positively skewed four-point scale question on the trends in investment over the previous five years were utilized to construct an index value measuring *invmac2a*.[9] Since *investob* and *invmac2a* indicate investment obstacles, they are included in the models one at a time.

The paper utilizes responses to the questions regarding limited access to business development services and finance, which were categorized into an unbalanced (negatively skewed) six-point –scale as described above, to construct an index variable indicating limited access to productive resources (*bdsfin1*). A pairwise correlation test (see Annex Table A1) shows that investment obstacles and limited access to productive resources are significantly and positively correlated. A further test of the equality of the parameters of these variables indicates that their effects on monthly sales are equal (see Annex Table A2). In this respect, these variables are included in the models one at a time. Market access (*mktpr12*) and *bdsfin1* are weakly and significantly associated. Thus, the paper incorporates an interactive variable, *inbdsmkt*, to capture the shared effect of *mktpr12* and *bdsfin1* on the growth potential and performance.

4.1.2 Control Variables

The empirical models include two categories of control variables (*contrv*): owner-managers' attributes (gender, owner's level of education and his/her motivation to start a business) and a firm's characteristics (location, employees' education in business and the manufacturing subsector). These variables are expected to have an effect in one way or another on the growth potential and sales performance of manufacturing MSEs and may also interact with some business constraints. With respect to gender, it has been argued in several studies that women-owned firms are concentrated in under-performing industries; are less likely to expand their business (for example, upgrade their investments), since they are risk averse and afraid of being taken over by their male counterparts; have relatively more limited access to external finance; and have limited space of operation since the majority of women-owned businesses are home based (see detailed discussions in Ishengoma 2004a).

It has also been argued in the entrepreneurial literature that business performance or growth is related to the owners' motivation to establish the business. If the owner's motivation to establish the business is to be self-employed, then the business is likely to prosper; if the owner's motivation to start the business is to meet his/her household's subsistence needs,

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and 1 for a very severe constraint. An average index value is treated in the model as a continuous variable. This approach has been adopted by various scholars (see, for example, Rabellotti 1999).

[9] The question on investment trends was structured into a four-point scale which was transformed into the following index values: 0 = no investment; 0.33 =limited investment; 0.66 = medium investment; 1= high investment attained during the past five years.

then the business is not likely to grow and perform well. The latter enterprises follow minimalist strategies (Murphy 2002).

The link between owner-managers' education and firms' performance as well as growth is addressed in the economic literature. One among the categories of human capital effects on firms' competitiveness is allocative effect. This effect is related to owner-managers' education, in that those with a relatively higher level of education have a greater ability to efficiently allocate resources to more productive lines of business and to select profit maximzsing inputs/combinations (see Corvers 1997; Welch 1970). Walter et al. (2003) and Bagachwa and Mbelle (1995) emphasize the role of entrepreneurial/business education in the growth/performance of the firm. They argue that a firm whose management has business/entrepreneurial education is likely to perform better than those without managers with these types of education. Loan providers use owner-managers' education levels as an indication of the latter's ability to utilize resources to generate profit and be able to meet their obligations. Thus, firms with relatively more educated owners are likely to have more access to external finance.

The study captures owner-managers' attributes using three indicators: gender, measured as dummy one if a firm is owned by a male and zero if otherwise; dummy education of the owner (*eduow2*), indicated as one if it is at least advanced secondary school education and zero if otherwise; and dummy motivation to start the business (*selfemp2*), measured as one if it is to be self-employed and zero if otherwise.

Since economic infrastructure and social services are not equally distributed in developing countries, favored areas may tend to attract capital (for example foreign investment) and skilled labor (Ishengoma 2005), which together with the presence of a supply of nontradeable inputs may increase market linkages in these areas. Thus, firms located in these areas are likely to perform better or experience growth.

The sector/line of business which a firm is in is likely to be related to investment decisions and competitiveness. The link between the sector and investment decisions or competitiveness is explained by different empirical studies such as those of Söderbom (2001), Teal (1999), and Ishengoma (2004b), which reveal that firms operating in different sectors differ in terms of their investment decisions and productivity. To capture firm-level characteristics, the paper utilizes three variables: dummy location, indicated as one for firms operating in Kampala and zero for those operating elsewhere; dummy education in business (*edubusin*), measured as one for firms with some employees who have business education; and dummy sector (*typebu1*), indicated as one for firms in metal, electrical, and furniture and zero for those in leather and textiles.

4.2 Data

The paper utilizes data collected in March and April 2003 to analyze the business constraints faced by MSEs in Uganda.[10] The data was collected by means of a structured questionnaire, which was personally administered by a team of researchers from the Centre for Basic Research, Kampala. A number of issues covered in the questionnaire focused on the firms' history, development, employees' education, investment behavior, and sales as well as the obstacles they faced. Using a stratified random sampling, a sample of 265 MSEs were interviewed, of which approximately 42 percent were in manufacturing and the others were in trade and services. The majority were located in urban centers such as Kampala, Jinja, Masaka, Mbarara and Katwe, and only 10 percent were in rural areas. The sample MSEs employed less than 20 workers.

This paper focuses on the 105 manufacturing firms that responded to all questions utilized. Based on the firms' characteristics, as shown in Table 2, 74 percent of the sample firms were in metal, electrical and furniture; 26 percent were in textiles/clothes and leather. Of the sample firms, 45 percent were operating in Kampala and the rest outside Kampala. One-third of the sample reported having some employees with education in the field of business.

Table 2: Summary Statistics

Variable	Obs.*	Mean	Std. Dev.**	Min.	Max.
Average monthly sales (*salepm*)	105	320.95	285.87	15	1,000
Natural log of the average monthly sales (*lnsalepm*)	105	5.31	1.05	2.71	6.91
Dummy income growth (*incositu*)	105	0.29	0.46	0	1
Index value of limited access to productive resources (*bdsfin1*)	105	0.65	0.26	0	1
Access to loan for the past 5 years (loanuse)	102	0.24	0.43	0	1
Dummy high taxes (*formtaxd*)	105	0.32	0.47	0	1
Index value of investment trends (*invmac2a*)	105	0.41	0.35	0	1
Index value of investment obstacles (*investob*)	105	0.66	0.25	0	1
Dummy limited access to market (*mktpr12*)	105	0.36	0.48	0	1
Dummy gender (gender)	105	0.78	0.42	0	1
Dummy motivation to start the business (*selfemp2*)	105	0.56	0.50	0	1
Dummy education of the owner (*eduow2*)	105	0.49	0.50	0	1
Dummy education in business (*edubusin*)	105	0.33	0.47	0	1
Dummy sector (*typebu1*)	105	0.74	0.44	0	1
Dummy location (location)	105	0.45	0.50	0	1

* Obstacles.

** Standard deviation.

Source: Authors' calculations.

Regarding the owner-managers' attributes, only 22 percent of the sample firms were owned and managed by women and the rest were run by men. Fifty-six of the owner-managers started their businesses because they wanted to be self-employed. Approximately half of the owner-managers had at least advanced secondary school education. The summary statistics

[10] The survey is based on Kappel, Lay, Steiner 2003.

also indicate that the average amount of monthly sales attained by the manufacturing sample MSEs was 320,950 Ugandan shillings (Ushs). Very few attained over one million Ushs. Among the 105 sample firms, 29 percent experienced growth in their income.

With respect to the factors that constrain MSEs from attaining higher performance and growing, approximately one-third of the sample reported that high tax is a severe obstacle. The majority of sample MSEs indicated that limited access to productive resources and the high cost of maintenance, spares and machinery are above-average obstacles. Lack of access to finance has been a major problem faced by MSEs as only 24 percent of the sample firms reported receiving loans in the previous five years. On average, sample MSEs made limited upgrades to their investment in productive assets. Market access has an average index value of 0.36, indicating a merely moderate constraint.

5 Regression Results: Business Constraints and Other Factors Inhibiting the Growth of MSEs

Table 3 offers regression results for Equation 1, which associates MSEs' performance (monthly sales) with business constraints. Since access to productive resources (*bdsfin1*) and investment constraints (*investob*) are included in the equation one at a time, Model A and B depict results for the equation incorporating the former variable and the latter, respectively. As shown in Table 3, Model A and B explain approximately 34 and 29 percent of monthly sales, respectively.

Table 4 Panel A provides the logit estimates for Equation 2, which tries to associate the growth potential of income (*incositu*) with business constraints, while the results in Panel B show the marginal effects of business constraints on the predicted probability that a firm will experience income growth. The discussion is based on the results in Panel B since they show not only the direction of the relationship between income growth and business constraints but also the effects of the marginal change in business constraints on the probability of growth.

The results in Model A (Table 4) indicate that monthly turnover is positively associated with investment trends and negatively associated with limited access to market and high tax rates. The relationship between monthly turnover and limited access to productive resources is not significant. With respect to the results in Table 4 Panel B, the growth potential of income is negatively associated with limited access to productive resources, limited access to market, and high tax rates. The relationship between the growth potential of income and investment trends is not significant.

Regarding access to the market, the results in Table 4 reveal that MSEs which faced limited access to market attained on average a 189 percent lower monthly turnover than their counterparts.[11] The results in Table 4 indicate that when the situation regarding limited market access

[11] Note that the reported percentages are the expressed antlog of the estimated coefficients minus one and then expressed in percentages.

Table 3: Business Constraints and Performance of MSEs[1]

	Model A			Model B		
	Coef. (Std. Error)		t	Coef. (Std. Error)		t
Limited access to productive resources (*bdsfin1*)	-0.336	(0.432)	-0.78	–		–
Investment obstacles (*investob*)	–		–	0.023	(0.399)	0.06
Investment trends *invmac2a*	0.638***	(0.272)	2.34	–		–
Limited access to market (*mktpr12*)	-1.062*	(0.644)	-1.65	-0.243	(0.20)	-1.21
Sector (*typebu1*)	0.561***	(0.249)	2.26	0.609***	(0.251)	2.43
Location	-0.159	(0.182)	-0.87	-0.186	(0.189)	-0.99
Gender	-0.656***	(0.249)	-2.63	-0.71***	(0.254)	-2.79
Education in business (*edubusin*)	0.459***	(0.208)	2.21	0.479***	(0.219)	2.18
High taxes (*formtaxd*)	-0.326*	(0.207)	-1.57	-0.363*	(0.201)	-1.80
Education of the owner (*eduow2*)	0.540***	(0.190)	2.84	0.53***	(0.194)	2.72
Motivation to start the business (*selfemp2*)	0.317*	(0.199)	1.59	0.397**	(0.201)	1.97
Interaction *bdsfin1*mktpr12* (*inbdsmkt*)	1.321	(0.865)	1.53	–		–
_cons	4.972	(0.369)	13.47	5.037***	(0.374)	13.47
Number of obstacles	103			103		
F (9, … 93)	4.35			4.28		
Prob > F	0.000			0.0001		
R^2	0.3447			0.2931		
Adj R^2	0.2655			0.2247		

[1] Dependent variable: Natural log of the average monthly sales (*lnsalepm*).

* ≤ 1%: very significant.

** > 1% and ≤ 5%: significant.

*** > 5% and ≤ 10%: weakly significant.

Source: Authors' calculations.

Table 4: Logit Estimates

	Panel A: Logit estimates			Panel B: Marginal effects after logit		
				y = Pr (*incositu*) (predict); thus, y = 0.23		
Variable	**Coef.**	**Std. Error**	**z**	**dy/dx**	**Std. Error**	**z**
Limited access to productive resources (*bdsfin1*)	-4.411***	1.421	-3.1	-0.780***	0.243	-3.21
Investment trends (*invmac2a*)	0.985	0.720	1.37	0.174	0.127	1.38
Limited access to market (*mktpr12*)	-2.436*	1.619	-1.5	-0.364*	0.204	-1.78
Sector (*typebu1*)	0.691	0.681	1.01	-0.364	0.098	1.13
Location	-1.224**	0.561	-2.18	-0.212**	0.090	-2.35
Gender	-1.297**	0.648	-2	-0.265**	0.141	-1.88
Education in business (*edubusin*)	1.008*	0.563	1.79	0.191*	0.110	1.74
High taxes (*formtaxd*)	-1.062*	0.627	-1.69	-0.170**	0.088	-1.93
Education of the owner (*eduow2*)	0.194	0.526	0.37	0.034	0.093	0.37
Motivation to start the business (*selfemp2*)	-0.646	0.549	-1.18	-0.117	0.100	-1.16
Interaction *bdsfin1*mktpr12* (*inbdsmkt*)	3.566*	2.345	1.52	0.631*	0.412	1.53
_cons	2.631**	1.198	2.2			
Number of obs.	105			(*) dy/dx is for discrete change of dummy variable from 0 to 1		
LR chi^2 (11)	28.96					
Prob > chi^2	0.0023					
Pseudo R^2	0.2273					
Log likelihood	-49.232424					

* ≤ 1%: very significant.

** > 1% and ≤ 5%: significant.

*** > 5% and ≤ 10%: weakly significant.

Source: Authors' calculations.

changes from being not a major problem to a major problem, the probability that MSEs will experience growth in income decreases by approximately 36 percent. These results verify the alternative hypothesis that limited access to market (that is, limited customers coupled with high competition) is expected to limit the growth potential and the performance of MSEs.

Therefore, to perform better and to grow, MSEs need to have access to differentiated market segments which operate without stiff competition. This may enable them to attain higher levels of sales at lower transaction costs and, hence, higher profits (see Sengendo et al. 2001). As a result, MSEs with access to differentiated markets will be encouraged to upgrade their production assets as they expect to sell more and, hence, to grow (see Reinikka and Svensson 2001). The results here confirm the importance of different alternatives (viz., subcontracting arrangements, involvement of MSEs in the public procurement market, and the strengthening of MSEs horizontal joint actions in the area of marketing) undertaken by stakeholders to enhance MSEs' access to market.

Concerning the problem of high taxes, the results in Table 3 reveal that MSEs which reported that high taxes are a severe problem attained between 39 (Model A) and 44 (Model B) percent lower monthly turnover than those which reported otherwise. The results in Table 4 indicate that when MSEs are relieved of severely high taxes, the probability of their income growing increases by 17 percent. These results confirm that high taxes constrain the growth potential and performance of MSEs. These findings corroborate observations in other studies (e.g., Sengendo et al. 2001; Kappel, Lay, Steiner 2004) that high tax is an obstacle to business development in Uganda. Tokman (2001) also reports that high taxes subtract a substantial amount from the income generated by Latin American microenterprises. This decreases their internal sources of funding for the expansion of their production operations and the growth of their business.

Among the reasons why tax limits the growth and performance of MSEs is the fact that some MSEs may prefer to remain informal and much smaller to avoid being visible and paying tax, a situation that may limit their enjoyment of economies of scale. However, remaining informal and smaller (micro) limits their potential to participate in subcontracting arrangements, particularly those involving large firms and public projects (Ishengoma and Lokina 2007; Mlinga and Wells 2002; and Arimah 2001), and their access to productive resources (Loayza 1997; Weder 2003).[12]

With respect to the effect of investment trends, the results reveal that growth in productive assets (that is, machinery) increases MSEs' monthly turnover by approximately 64 percent. The results confirm the alternative hypothesis that MSEs that face severe investment obstacles which limit their ability to upgrade their productive assets perform poorly. This finding complies with Ishengoma's (2004b) results regarding the relationship between Tanzanian

[12] As addressed by Levenson and Maloney (1998), among the requirements for financial institutions to extend funds to business entities is the latter's registration with government authorities. On the other hand, government asks financial institutions to report the identity of their business partners for tax purposes.

manufacturing productivity and investment in production equipment, as well as with studies linking manufacturers' technical efficiency and investment in productive assets (see Teal 1999; Piesse and Thirtle 2000).

As also argued by Reinikka and Svensson (2001), investment in productive assets has a positive effect on a firm's growth, which can be achieved as a result of its increased turnover. Note that the sample utilized by the previous studies cited here excluded micro manufacturing firms. Thus, irrespective of size categories, the performance of manufacturing firms is associated with investment in productive assets. This is simply because microenterprises with relatively more investment in productive assets have a greater capacity to take on more orders and stand a higher chance of being subcontracted by relatively large firms (Ranis and Stewart 1999). These enterprises are also likely to obtain access to the market for public procurement orders, since high investment in productive assets demonstrates their ability to meet the orders as specified in a contract.

Limited access to productive resources seems to be the major factor that limits the growth potential of MSEs in Uganda and other developing countries. The results in Table 4 reveal that a marginal increase in MSEs' perception that they have only limited access to productive resources is associated with a 78 percent reduction in their probability of growth. This finding confirms the importance of MSEs' access to productive resources as argued in other studies (see Ishengoma 2004b; Kimuyu 2004).

The predicted probability that a micro- or small enterprise will grow is 29 percent. However, further analysis shows that MSEs which reported that limited access to productive resources is not a major constraint have a higher probability of growth (43 percent) than those which reported otherwise (see Annex Table A3).[13] MSEs which indicated that limited market access and high taxes are major obstacles to their business operations are not likely to grow since their probability of growth is only 3 percent (see Annex Table A4). On the other hand, those which indicated that limited market access and high taxes are not major obstacles have a relatively high probability of growth (51 percent).

6 Conclusion and Policy Recommendations

The aim of this paper was to examine the extent to which the growth potential and performance of MSEs are associated with business constraints (viz., investment in productive assets, high tax, and access to markets and productive resources). The paper utilized regression models and tried to control for owners' attributes and firms' characteristics.

The empirical findings reveal that business constraints (investment obstacles, limited access to market and productive resources, and high tax) hinder the growth potential and perform-

[13] MSEs which reported that limited access to productive resources is not a major constraint are those whose index values on this variable are below an average index value. The reverse is true for those which reported otherwise.

ance of MSEs. MSEs which reported that limited access to market is their major problem attained lower turnover. Furthermore, when MSEs experience limited access to market, their growth potential is likely to decrease. Thus, access to market is an important factor for MSEs to perform better and to grow. Managers in MSEs may need to position their firms by producing relatively high quality products and undertaking joint marketing strategies in order to penetrate differentiated market segments. From the policy perspective, stakeholders trying to address the problems faced by MSEs in Uganda need to undertake different measures (for example, subcontracting arrangements, subsidizing MSE participation in trade fairs, joint marketing) to increase their access to differentiated markets.

When MSEs face severe investment obstacles that limit their ability to upgrade their productive assets, they perform poorly. Policy makers and other stakeholders need to encourage MSEs to upgrade their productive assets. This can be done by enhancing the availability of production equipment and spares in the local market and through the provision of technical services at favorable rates. On the other hand, MSEs may need to try to become integrated in global value chains in order to obtain better access to technology, knowledge, managerial skills, and also export markets (Ishengoma and Kappel 2007; Keller 2004; Morrison, Pietrobelli and Rabellotti 2006; Antràs and Helpman 2004). MSEs may also have to be trained regarding the need to upgrade their productive assets.

The results show that access to productive resources is very important for a business to grow. MSEs' growth is positively associated with access to business services and finance, as these resources may enable a firm to produce the right product. MSEs need access to market at low transaction costs—hence increasing efficiency and sales—and to technical information and knowledge through networking. High taxes limit the performance and growth potential of MSEs in several ways. They reduce their internal sources of financing and discourage them from expanding, formalizing and, hence, participating in subcontracting arrangements.

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Annex

Table A1.a: Pairwise Correlation of Continuous Variables

	invmac2a	*bdsfin1*	*investob*
invmac2a	1		
bdsfin1	0.0126	1	
investob	0.2483***	0.4174***	1

Notes: Number of observations = 105.
Correlation between the respective variables: * weakly significant; ** significant; *** very significant.

Source: Authors' calculations.

Table A1.b: Regression Results

Independent variables	Coef.	N = 121
invmac2a	0.006	$R^2 = 0.02$
mktpr12	0.0774*	*bdsfin1* is a dependent variable
constant	0.630	

Notes: Correlation between the respective variables: * weakly significant; ** significant; *** very significant.

Source: Authors' calculations.

When regressing *bdsfin1* on *mktpr12* and *invmac2a,* the relationship between *bdsfin1* and *mktpr12* is weakly significant.

Table A2: Test of Equality between *bdsfin1* and *investob* (regress *lnsalepm* on *bdsfin1*, *investob*, *mktpr12*, *typebu1*, location, gender, *edubusin*, *formtaxd*, *eduow2*, *selfemp2*, *bdfinsto*)

Variables	Coef. (Std. Error)		t	P > t
bdsfin1	1.987893	(0.9745774)	2.04	0.044
investob	1.709085	(0.8361456)	2.04	0.044
mktpr12	-0.2369115	(0.1987349)	-1.19	0.236
typebu1	0.5325256	(0.2492823)	2.14	0.035
location	-0.1794398	(0.1857852)	-0.97	0.337
gender	-0.5923918	(0.2561913)	-2.31	0.023
edubusin	0.4224287	(0.2173293)	1.94	0.055
formtaxd	-0.3379669	(0.205587)	-1.64	0.104
eduow2	0.6479042	(0.1997192)	3.24	0.002
selfemp2	0.4692304	(0.2008203)	2.34	0.022
bdfinsto	-3.279614	(1.41562)	-2.32	0.023
_cons	4.005727	(0.592613)	6.76	0
Number of obs.	103			
F (11, … 91)	4.12			
Prob > F	0.0001			
Adj R^2	0.2519			

test *investob* = *bdsfin1*
(1) - *bdsfin1* + *investob* = 0
F (1, ... 91) = 0.15
Prob > F = 0.7025

Source: Authors' calculations.

Based on the above results, the probability of accepting H0 (i.e., - *bdsfin1* + *investob* = 0) is 0.7 (70%). This indicates that the effects of the two variables on the performance (*lnsalepm*) of MSEs are equal.

Table A3: Summary Statistics of Predicted Probability of Income to Grow (*proincs2b*) When Limited Access to Productive Resources is Greater or Equal to Average or Less than Average Value

	Obs.	*proincs2b*			
Condition		**Mean**	**Std. Dev.***	**Min.**	**Max.**
if *bdsfin1* ≥ 0.65	58	0.1857558	0.1596835	0.0092642	0.6379203
if *bdsfin1* < 0.65	47	0.4303439	0.2405566	0.0226296	0.9570618

* Standard deviation.

Source: Authors' calculations.

Table A4.a: Predicted Probabilities When Limited Access to Market and High Taxes Are Not Major Problems

prvalue, x (*mktpr12* = 0, *formtaxd* = 0), rest (mean)				
Pr (y = 1x):	0.5122	95%	ci:	(0.2144; 0.8016)
Pr (y = 0x):	0.4878	95%	ci:	(0.1984; 0.7856)

	bdsfin1	*invmac2a*	*mktpr12*	*typebu1*	**location**	**gender**	*edubusin*	*formtaxd*	*eduow2*	*selfemp2*	*inbdsmkt*
x =	0.66857143	0.4037143	0	0.75238095	0.47619048	0.76190476	0.35238095	0	0.5047619	0.56190476	0.26095238

Source: Authors' calculations.

Table A4.b: Predicted Probabilities When Limited Access to Market and High Taxes Are Major Problems

prvalue, x (*mktpr12* = 1, *formtaxd* = 1), rest (mean)				
Pr (y = 1x):	0.0308	95%	ci:	(0.0026; 0.2807)
Pr (y = 0x):	0.9692	95%	ci:	(0.7193; 0.9974)

	bdsfin1	*invmac2a*	*mktpr12*	*typebu1*	**location**	**gender**	*edubusin*	*formtaxd*	*eduow2*	*selfemp2*	*inbdsmkt*
x =	0.66857143	0.4037143	1	0.75238095	0.47619048	0.761905	0.352380	1	0.5047619	0.56190476	0.26095238

Source: Authors' calculations.

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