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

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Abstract: Since the 1990s, studies utilizing descriptive statistics have documented factors in the business environment, which hinder the performance of Ugandan micro and small enterprises (MSEs). Based on secondary data, this paper assesses the trend of critical factors since 1994 to 2010. The paper also utilizes the primary data from MSEs to examine the effects of these factors on the growth potential of MSEs, while controlling for the owner's and the firm's attributes. Results from the trend analysis reveal that the business environment has been deteriorating over time. Results from the regression analyses reveal that MSEs' growth potential is negatively associated with limited access to productive resources, high taxes and lack of market access.

1. Introduction

MSEs are enterprises employing a maximum of 50 people (Government of Uganda (GoU)/Ministry of Finance, Planning and Economic Development (MFPED), 2008). Most of the enterprises in Uganda (92 percent) employ up to 19 people and offer jobs to 90 percent of the non-farming active population (Ugandan Bureau of Statistics (UBOS), 2003, 2007). Medium and large enterprises account for 2 percent of total number of enterprises (GoU/MFPED, 2008).

Most MSEs are informal and aged between 1 and 5 years (GoU/MFPED, 2008). Up to 30 percent of the start-ups fail in the first year of their operations (Hatega, 2006) and some of the formal MSEs shift to the informal sector as registered businesses decreased from 800,000 in 2001 to 25,000 in 2007 (GoU, 2010; Kasekende and Opondo, 2003). These indicate limited growth among MSEs. The annual growth rate of the manufacturing sector has decreased from 7.3 percent in 2005/2006 to 5.9 percent in 2009/2010 (GoU/MFPED, 2011). The sector's efficiency has also decreased over time (Gauthier, 2001). Poor performance of MSEs worsens the performance of the manufacturing sector (Niringiye and Tuyiragize, 2010, Table 1).

MSEs' limited performance has been associated with limited access to finance (Johnson and Nino-Zarazua, 2011; Okurut and Bategeka, 2006; Mugume and Obwona, 2001), inadequate provision of public services (Svensson and Reinikka, 2001), unfavourable system of taxation, high regulatory burden (Keefer, 2000) and corruption (Svensson, 2002). Other factors are limited access to differentiated markets (Sengendo *et al*., 2001), low education and managerial skills (Nalumansi *et al*., 2002; Nel and Shapiro, 2003). Although factors noted here are important in explaining MSEs' limited growth/performance, they are based on descriptive analysis. One cannot delineate the extent to which the mentioned factors affect MSEs' growth potential/performance. Although the government has taken different initiatives to improve the business environment, none of the reviewed studies have tried to track the development of critical factors over time, which is important for policy enhancement.

Studies which utilized multiple regression analysis (e.g. Ishengoma, 2004a; House, 1984; Söderbom and Teal, 2004; Beck *et al*., 2003) overlook factors: limited market access, investment obstacles and high tax. Since MSEs are heterogeneous (Ishengoma and Kappel, 2007; Söderbom and Teal, 2004), their growth is differently affected by the business environment within which they operate.[1] Thus, MSEs' subsectors need to be controlled, which is impossible when applying descriptive analysis. Since the rate of economic growth is positively associated with the rate of investment (Reinikka and Svensson, 2001), factors constraining investment (viz., limited sources of funds, high overhead costs, high tax, limited supply of spare parts/equipments and technical services) (Ishengoma, 2005; Reinikka and Svensson, 2001, Rudaheranwa, 2000, 2006) could in turn limit MSEs' growth.

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Table 1: The performance of Ugandan MSEs in manufacturing sector compared to selected countries

Firm size class (employees)	Tanzania	Uganda	Kenya	Zambia	India	China
Panel A: Median Annual Value Added *(USD)* per Worker by Firm Size						
Micro (<10)	989	578	–	–	3,147	1,920
Small (10–49)	1,526	897	2,439	2,668	2,931	4,595
All firm size classes	2,061	1,085	3,457	2,680	3,432	4,397
Panel B: Median Ratio of Annual Value Added to Capital						
Micro (<10)	1.33	0.8	–	–	0.8	0.13
Small (10–49)	0.37	0.67	0.3	0.16	1.11	0.59
All firm size classes	0.43	0.70	0.35	0.23	1.1	0.51
Panel C: Median Ratio of Capital *(USD)* to Labour						
Micro (<10)	1,040	845	–	–	1,859	–
Small (10–49)	7,433	1,408	7,436	15,578	2,000	5,434
All firm size classes	7,757	1,464	11,496	12,161	2,380	7,654
Panel D: Unit Labour Costs *(median wages/value added)*						
Micro (<10)	0.45	0.33	–	–	0.29	–
Small (10–49)	0.56	0.41	0.38	0.41	0.3	0.38
All firm size classes	0.39	0.39	0.36	0.41	0.27	0.32

— Not available.
Source: World Bank/International Finance Corporation (2004). Statistics for Uganda are of 2002/03, Kenya, 2003, Tanzania, 2003, Zambia, 2003, China 2000 and India 1999.

To add to the body of knowledge, this paper assesses the trend of critical factors in the business environment (FinBE), which hinder the performance of the manufacturing sector and MSEs since 1994 to 2010. It also examines the extent to which MSEs' growth potential/performance is affected by FinBE, while controlling for the owner's and the firm's attributes.

The rest of the paper is organized as follows: Section 2 gives an economic overview and the performance of manufacturing MSEs as compared to selected developing countries and presents the results on the trend of critical business environmental factors since 1994 to 2010. Section 3 conceptualizes the relationships between selected FinBE and MSEs' growth and performance. Section 4 describes the research methodology, while Section 5 presents and discusses the empirical findings. Section 6 concludes and offers recommendations.

2. The Ugandan Manufacturing Sector and Business Environment

This section offers a broad overview of the manufacturing sector. Based on documentary research, it further assesses the trend of critical factors which hinder the growth of the economy, particularly MSEs in the manufacturing sector. Although the sources of data which this analysis is based on, presented the critical factors in different formats, they still offer a broad picture on the ranking of factors that are most critical over time.

2.1 The Manufacturing Sector at Glance

Since the mid-2000s, the economic performance of Uganda has deteriorated. In 2005/2006 the annual real GDP growth rate was 10.8 percent, which decreased to 5.8 percent in 2009/2010 (GoU/MFPED, 2011). Similarly, the manufacturing sector grew by 7.3 percent in 2005/2006 compared to 5.9 percent in 2009/2010 (GoU/MFPED, 2011).

In 2001, the share of manufacturing MSEs to estimated number of medium and MSEs in Uganda (i.e. 1,069,848) was only 10 percent (GoU/MFPED, 2008). Manufacturing MSEs are involved in light value addition activities: garments and footwear production, grain milling, wood and metal works (GoU/MFPED, 2008). Most of them (65 percent) are less than 10 years old (GoU/MFPED, 2008). Their performance has been unimpressive. The value added per worker, and labour unit cost of manufacturing MSEs were lower than the average performance of all manufacturing firms (Table 1). Compared to other developing countries, labour productivity in Ugandan MSEs was lower while their unit labour costs were higher than that of Kenya, India and China.

Ugandan MSEs were not upgrading their investment/capital stock. Their investment per worker was lower than that of Tanzania, Kenya, Zambia, India and China (Table 1). Among the reasons for poor performance and low investment in Uganda is the unfavourable business environment.

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Table 2: Trends in Uganda's performance in the global competitiveness surveys: 2003–2010

Competitiveness-ranking-index	2003/04	2004/05	2005/06	2006/07	2008/09	2009/10	2010/11
Uganda/overall-ranking	80/102	79/104	103/117	113/125	128/134	108/133	118/139
Macroeconomic environment	71	75	88	66	92	73	114
Public institutions	84	86	95	100	113	106	104
Infrastructure	–	–	–	118	115	119	127

Source: World Economic Forum, Global Competitiveness Reports 2003–2010.

Table 3: Ranking of constraints to investment, future operations and growth during 1994–2010/11

	Between the numbers below		(%)	(%)	Average score (number in bracket are ranking out of 15)		
Factors	Ranking in 1994[a]	Ranking in 1998[b]	2002/03[c]	2007[d]	2008/09[e]	2009/10[e]	2010/11[e]
Corruption	-	4 and 5	38.2 (6)		17.0 (2)	17.8 (1)	21.9 (1)
Access to finance	3 and 4	3 and 4	45 (4)	78 (3)	22.9 (1)	19.3 (2)	15.3 (2)
Poor utility services/ inadequate supply of infrastructure	3 and 4	4 and 5	44.5 (5)	80 (1)	11.4 (3)	13.0 (3)	13.0 (3)
High utility prices	3 and 4	4 and 5					
High taxes	-	4 and 5	48.3 (2)		9.9 (4)	8.6 (4)	8.9 (4)
Poor work ethic in national labour force					9.6 (5)	7.2 (6)	7.1 (5)
Inefficient government bureaucracy					8.6 (6)	7.1 (7)	6.7 (6)
Inflation					4.6 (7)	7.3 (5)	6.3 (7)
High interest rate	3 and 4	4 and 5	60.3 (1)	75 (4)			
Uncertainty about government policies	2 and 3	3 and 4	27.6 (10)		4.0 (9)	2.5 (12)	2.4 (12)
Lack of skilled labour	2 and 3	3 and 4	30.8 (9)	78 (2)	3.4 (10)	3.7 (10)	5.0 (8)

Note: 5, 4, 3, 2, and 1 stand for severe, major, moderate, minor, and no obstacles respectively. In 2002/03 and 2007, figures are percentage of firms, which stated the factors as their major obstacles, while figures in bracket are ranks of each factors out of 17 (in 2002/03), 10 (in 2007) and 15 (in 2008/09–2010/11).
Sources: [a] World Bank (1994); [b] Reinikka and Svensson (2001); [c] WB/IFC (2004), [d] GoU/MFPED (2008); [e] World Economic Forum (2008, 2009, 2010).

2.2 The Business Environment in Uganda

Based on the Global Competitive Surveys conducted by the World Economic Forum which rank participating countries according to their performance in business climate, in overall statistics, Uganda was ranked 118 out of 139 countries in 2010–2011, compared to 80 out of 102 countries in 2003–2004 (Table 2). During the past seven years, the Ugandan position in relation to the macroeconomic environment, public institutions and infrastructure has worsened over time.

The deteriorating position of the Ugandan business climate is related to limited improvement of factors constraining enterprises' performance (Table 3). Corruption, limited sources of finance, poor utility services and high taxes are the critical FinBE. In 1994 and 1998 limited access to finance was rated a major/moderate obstacle. During 2002/03 to 2010/11 its ranking shifted from the fourth to the highest (first/second) obstacle. During 2002/03 to 2010/2011 the ranking of corruption shifted from the sixth position to the worst (first) obstacle. The utility services were rated as a moderate/major in 1994, which deteriorated to a major/severe obstacle in 1998. During 2008 to 2010 they were ranked the third critical problem.

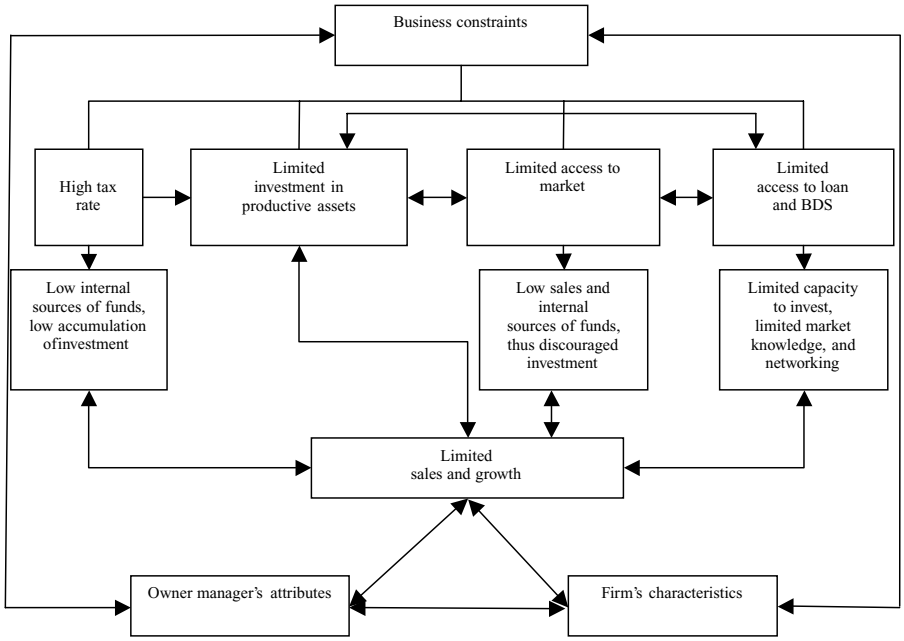
High taxes were ranked the highest obstacle in 2002/03, which improved to fourth in 2008–2010. Lack of skilled labour and other FinBE were ranked slightly the same during 2002/03–2010/11. The ranking of FinBE reveals that the business environment in Uganda has been deteriorating over time, which could be a reason for the poor performance of the Ugandan manufacturing sector/MSEs.

3. On Conceptualizing the Link between FinBE and MSEs' Growth or Performance

The role of investment in economic growth has been acknowledged in different economic literature. At the macro level the traditional approach to growth associates national/regional economic growth with capital accumulation (i.e. investment in physical

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Figure 1: Conceptual relationship between business constraints and performance



Source: Authors.

assets). At micro level, it is argued that modern technology increases firms' competitiveness in the global market (see Gereffi, 1999). Thus, factors constraining firms' investments consequently limit their growth (Reinikka and Svensson, 2001). The factors which the paper addresses are limited market access, high tax rates, access to productive resources and investment obstacles. Figure 1 shows how these factors can hinder investment upgrading, hence limited growth potential/performance. Controllable variables (owner managers' and firms' attributes) are not the focus of this paper. Section 4.1.2 presents their relationships with selected FinBE and SMEs' growth potential/performance.

Limited access to differentiated markets forces MSEs to operate in low-income market segments, which limits their sales/profits as they compete for the same customers (Sengendo *et al*., 2001). This may discourage firms' future investments and, therefore, constrain their growth potential/performance. Moreover, MSEs' limited access to external financing forces them to depend on their internal sources (i.e. profits which as noted above are limited by lack of market) to finance investment (Ishengoma, 2005; Reinikka and Svensson, 2001; Arimah, 2001; Morrisson, 1995).

High taxes reduce firms' internal sources of finance. They also discourage MSEs' expansion to avoid visibility as this may increase their costs related to business formality (Ishengoma and Kappel, 2007). Therefore, we hypothesize that:

H1: limited access to market (i.e. limited customers coupled with high competition) is expected to limit the growth potential and performance of MSEs, and
H2: high tax rates are expected to constrain the growth potential and performance of MSEs.

MSEs' limited internal finance can be resolved by having access to external finance. This may enable them to upgrade their investments, which may increase their productivity (Ishengoma, 2004b; Kimuyu, 2004) and product quality. These may enhance their access to differentiated markets. MSEs can also utilize loans to expand operations and thus increase their capacity utilization, and therefore, reduce overhead costs per unit.

Business development services (BDS) include marketing information, networking, short-term training and counselling/consultancy services. Access to marketing information may increase MSEs' market knowledge on their customers' behaviour, prices and the best sources of inputs. Through counselling/consultancy services, MSEs can solve their technical problems. Their participation in networking activities may increase their access to technical and marketing information related to customers' trustworthiness and new business partners. BDS are expected to decrease MSEs' transaction costs, raise their sales/profit and therefore increase their internal sources of finance, growth and competitiveness. Thus, we hypothesize that:

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

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Poor transport systems and high transport costs in Uganda increase the price of capital goods. This discourages investment in capital goods (Rudaheranwa, 2000, 2006). Complicated or bureaucratic import procedures, high taxes and corruption also inflate the costs of imported capital goods. Given limited funds and the indivisibility aspect of investment in physical assets, MSEs are likely to be highly discouraged to upgrade their investments in productive assets. As the Ugandan manufacturing sector is dominated by MSEs, thus at its infant stage, the supply of technical services facilitating investment upgrading and maintenance is likely to be limited.[2] This may consequently raise the price of services and make them unaffordable to MSEs. We therefore assume that:

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

4. Methodology

4.1 Linking Performance and Growth Potential to Business Constraints

This paper models the growth potential (*incositu*) and performance (ln*salepm*) of MSEs as functions of selected FinBE (*bconst*), while controlling for firms' and owner-manager' attributes (*contrv*). Most MSEs do not keep books of accounts to facilitate the estimation of growth rates. Thus, an interval question on the average monthly sales was used to solicit data on MSEs' sales.[3] The intervals were transformed into the mean values to form a continuous variable, which was converted into natural logarithm (i.e. ln*salepm*) to reduced variation.[4] MSEs were also asked to assess their income situation (i.e. whether it increased, remained the same, or declined). To measure the perception of growth of their income, we constructed a dummy variable (*incositu*) as one if a firm experienced growth in income and zero otherwise.

To associate performance (ln*salepm*) to business constraints (*bconst*) we employ the following linear regression model.

$$\ln Salepm_i = a + \beta_1 bconst_i + \beta_2 contrv_i + e_i \tag{1}$$

whereby β_1 and β_2 are parameters to be estimated, while a and e are constant and the error term, respectively. The terms, *bconst* and *contrv* are business constraints and control variables. The estimation of *bconst* and *contrv* is provided in the following sections. The term i stands for a firm ($i = 1, 2, 3, \ldots 103$).

We apply a logit model to associate MSEs' growth potential (*incositu*) to business constraints (*bconst*). This model indicates the probability for firms to experience income growth, given *bconst*. The conditional expectation MSEs' growth potential (*incositu*) given explanatory variables: *bconst* and control variables (*contrv*) are:

$$\begin{aligned} E\left[incositu_i \mid bconst_i, contrv_i\right] &= P\left[e_i\phi - V(bconst_i, contrv_i)\right] \\ &= F\left[(bconst_i, contrv_i)\right] \end{aligned} \tag{2}$$

where e_i is a disturbance term with a mean of 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, *bconst* and *contrv*. The term i stands for a firm ($i = 1, 2, 3, \ldots 105$). The variables *bconst* and *contrv* are as defined earlier.

4.1.1 Business Constraints

The paper focuses on factors in the business environment: limited market access, high tax rates, access to productive resources and investment obstacles. It utilizes MSEs data containing information on these factors, mentioned controllable variables, MSEs' income growth and sales. MSEs were asked to rank lack of customers and severe competition as first, second, third or fourth problems based on the extent they constrain their performance. Responses on these questions were used to capture limited access to market as a dummy variable, *mktpr12*, which equals one for firms that indicated either lack of customers or/and severe competition as a first or/and second problem and zero otherwise.

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

Two variables: investment obstacles (*investob*) and investment trend (*invmac2a*) indicate investment obstacles. Responses on two questions (i.e. high cost of equipment and spare parts, and high cost of maintenance services) were utilized to construct an average index value indicating *investob*. The questions are weighted equally, hence allocated the maximum value of 1. The distribution of the values according to responses on a question is 0 for not a constraint, 0.2 for a minor constraint, 0.4 for a moderate constraint, 0.6 for an average constraint, 0.8 a constraint (a problem) and 1 for a very severe constraint. An average

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index value is treated in the model as a continuous variable. This approach has been adopted by different scholars (e.g. Rabellotti, 1999). Investment obstacles may be reflected by trends in investment, in that those facing more obstacles may fail to upgrade their physical assets, while those not facing obstacles may upgrade their equipment. Thus, responses on a positive skewed four-point scale question on the trend in investment for the past five years were utilized to construct an index value measuring *invmac2a*.[5] As *investob* and *invmac2a* indicate investment obstacles, they are entered in the models one at a time.

MSEs were asked to indicate whether limited access to BDSs and finance are not a constraint, a minor, moderate or average constraint, a constraint and a very severe constraint. As described above, responses on these questions were used to construct an index variable indicating limited access to productive resources (*bdsfin1*). Pairwise correlation tests show that investment obstacles and limited access to productive resources are significantly and positively correlated.[6] Further tests on the equality of the parameters of these variables indicate that their effects on monthly sales are equal.[7] These variables are therefore entered in the models one at a time. Market access (*mktpr12*) and *bdsfin1* are weakly associated because BDSs may enable a firm to know the behaviour of its customers and build strong customer loyalty. Networking activities may assist firms to form joint actions in marketing and production, which can increase their access to differentiated markets characterized with low competition. Thus, we incorporate an interactive variable *inbdsmkt* to capture the shared effect of *mktpr12* and *bdsfin1* on MSEs' growth potential/performance.

4.1.2 Control Variables

The models include control variables: owner managers' attributes (gender, owner's level of education and his/her motivation to start a business) and firms' characteristics (location, employees' education in business and the manufacturing subsector). These variables are expected to affect MSEs' growth potential/performance and may interact with *bconst*. Women-owned firms are concentrated in less performing industries; may remain small to avoid risk and being taken over by their male counterparts; have no access to external finance; and have limited space of operation (Ishengoma, 2004a).

The owner's motivation to establish a business influences the business performance/growth. If an owner establishes a business to be self-employed, then the business may prosper but if they start the business to meet their households' subsistence, the business is likely to remain small and to follow minimalistic strategies (Murphy, 2002). The effect of managers'/owners' education on firms' performance/growth is linked to the human capital allocative effect, in that better educated ones have more ability to efficiently allocate resources to more productive lines of business and to select profit maximizing inputs-combinations (Welch, 1970). Loan providers use owner-manager's education levels as an indication of their ability to utilize resources to generate profit and repay loans. Thus, firms with better educated owners are likely to attract more loans than others.

Owner-manager's attributes were captured by three indicators: gender measured as dummy one if a firm is owned by a male and zero otherwise; and dummy education of the owner (*eduow2*) indicated as one if it is at least advanced secondary education and zero otherwise. The last one is dummy motivation to start the business (*selfemp2*) measured as one if it is to be self-employed and zero otherwise.

A firm whose management has business/entrepreneurial education is likely to perform better than those without these types of education (Walter *et al*., 2003; Bagachwa and Mbelle, 1995). Unequal distribution of economic and social infrastructure/services between capital city and other urban areas in most developing countries like Uganda makes the capital cities attract more capital and skilled labour (Krugman, 1998), which may enhance the performance firms located there. The subsector/line of business that firms are in may be related to investment decisions and competitiveness (see Söderbom, 2001; Teal, 1999; Ishengoma, 2004b). Thus, firm-level characteristics were captured by dummy location indicated as one for firms operating in Kampala and zero otherwise; dummy education in business (*edubusi*) measured as one for firms with employees having business education; and dummy subsector (*typebu1*) indicated as one for firms in metal, electrical and furniture and zero if in leather and textiles.

4.2 Data

The paper utilizes data collected early 2003 to analyse factors constraining MSEs' performance in Uganda.[8] Issues covered in this survey include the variables mentioned above. Using a stratified random sampling method, a sample of 265 MSEs employing up to 20 workers were interviewed, of which 42 per cent were in manufacturing. Most of them were located in urban centres (Kampala, Jinja, Masaka, Mbarara and Katwe). Only 10 per cent were in rural areas.

A sample of 105 manufacturers, of which 74 per cent were in metal, electrical and furniture and 26 per cent in textiles/clothes and leather, was utilized (Table 4). Forty five per cent of them were in Kampala and the rest outside Kampala. One-third of them reported to have some employees with business education.

Only 22 per cent of the sample firms were owned and managed by women. Fifty-six per cent of the owner-managers started their businesses because they wanted to be self-employed. Half of them had at least advanced secondary education. MSEs attained

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Table 4: Summary statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Average monthly sales in Ugandan shillings 000s (*Salepm*)	105	320.95	285.87	15	1000
Natural log of the average monthly sales (Ln*salepm*)	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
Have 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 trend (*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

Source: Authors' computation.

the average monthly sales of Ugandan shillings (Ushs) 320,950. Only 29 per cent of the sample SMEs experienced growth in their income.

One-third of the sample reported that high tax is a severe obstacle. Most MSEs indicated that limited access to productive resources (*bdsfin1*) and high costs of maintenance, spares and machinery (*investob*) are above average obstacles. Only 24 per cent of the sample reported having received loans for the past five years. On average, sample MSEs made a small upgrading of their productive assets. Limited market access has an average index value of 0.36 indicating merely a moderate constraint.[9]

5. Empirical Results and Discussion of the Findings

Table 5 offers regression results relating MSEs' performance (monthly sales) with business constraints. Model A and B depict results for the equation incorporating access to productive resources (*bdsfin1*) and investment constraints (*investob*), respectively, as they enter in Equation 1 separately. Model A and B explain around 34 per cent and 29 per cent of monthly sales, respectively.

Table 6 Panel A provides the logit estimates for Equation 2, which tries to associate MSEs' growth potential (*incositu*) to business constraints, while the results in Panel B show the marginal effects of business constraints on the predicted probability for a firm to 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 probabilities to grow.

The results (Model A, Table 5) indicate that MSEs' turnover is positively associated with investment trend and negatively associated with limited access to market and high tax rates. Its relationship with limited access to productive resources is insignificant. The results (Table 6, Panel B) reveal that MSEs' growth potential is negatively associated with limited access to productive resources, limited access to market and high tax rates. Its relationship with investment trend is insignificant.

MSEs facing limited access to market attained 189 per cent lower average sales than their counterpart (Table 5).[10] When the response on limited market access changes from not a major problem to a major problem, the probability for MSEs to experience growth in income decreases by 36 per cent. Thus, limited access to market hinders the MSEs' growth potential and performance. Access to market through targeting differentiated clients can enable MSEs to raise their sales (Sengendo *et al.,* 2001), increase their profit, which may encourage investment in productive assets and enhance their growth (see Reinikka and Svensson, 2001).

MSEs which rated high taxes as severe problem attained between 39 per cent (Model A) and 44 per cent (Model B) lower turnover than those that reported otherwise (Table 5). When MSEs are relieved from severe high taxes, the probability for their income to grow increases by 17 per cent (Table 6). These findings corroborate with the observations by Sengendo *et al.* (2001) and Tokman (2001) that high tax is an obstacle to business development in Uganda and Latin America. The effect of high taxes on MSEs' growth potential is further related to their preferences to remain small to avoid visibility which may attract formalization costs. However, remaining small may limit their enjoyment of economies of scale, their potential to participate in subcontracting arrangements, particularly those involving large firms and public projects (Mlinga and Wells, 2002; and Arimah, 2001), and their access to productive resources (Loayza, 1997; Weder, 2003).[11]

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Table 5: Business constraints and performance of MSEs

	Model A		Model B	
	Coeff. (Std. Err).	*t*-values	Coeff. (Std. Err).	*t*-values
Limited access to productive resources (*bdsfin1*)	−0.336 (0.432)	−0.78	–	–
Investment obstacles (*investob*)	–	–	0.023 (0.399)	0.06
Investment trend *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 obs=	103		103	
F(9, 93)	4.35		4.28	
Prob>*F*	0.000		0.000	
R-squared	0.344		0.293	
Adj *R*-squared	0.265		0.224	

Note: Dependent variable: Natural log of the average monthly sales (ln*salepm*).
***, **, and * imply significant at 1%, 5%, and 10% respectively. The terms in the table are as defined in Table 4.
Source: Authors' computations.

The growth in productive assets increases MSEs' turnover by 64 per cent (Table 5). This finding complies with the results by Ishengoma (2004b) on the relationship between Tanzanian manufacturing productivity and investment in production equipment, Reinikka and Svensson (2001) on the positive effect of investment in productive assets on firms' growth, and studies linking manufacturers' technical efficiency and investment in productive assets (see Teal, 1999; Piesse and Thirtle, 2000). The samples utilized by these studies excluded micro-enterprises. Thus, irrespective of the size categories, the performance of manufacturing firms is associated with investment in productive assets. Micro-enterprises with more investment in productive assets have more capacity to take more orders and stand high chances to be sub-contracted by relatively large firms (Ranis and Stewart, 1999; Morrisson, 1995).

The effect of investment in productive assets on sales/turnover can be experienced in a short period of time. This could be the reason why investment trend has a significant positive effect on sales but not on income growth potential.

A marginal increase in MSEs' inaccessibility to productive resources reduces their probability to grow by 78 per cent (Table 6). This finding confirms the argument by Ishengoma (2004b) and Kimuyu (2004) on the importance of MSEs' access to productive resources.

The predicted probability for a MSE to grow is 29 per cent. However, further analysis shows that MSEs, which reported that limited access to productive resources is not a major constraint, have higher probability to grow (43 per cent) than those, which reported otherwise.[12] 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 to grow is only 3 per cent.[13] On the other hand, those that indicated that limited market access and high taxes are not major obstacles, have a relatively high probability to grow (51 per cent).[14]

6. Conclusion and Policy Recommendations

This paper aimed to assess the trend of critical FinBE which has hindered the performance of the manufacturing sector and MSEs from 1994 to 2010 and to examine the extent to which MSEs' growth potential and performance are associated with investment in productive assets, high tax and limited access to market and productive resources, while controlling for the owner's and firms' attributes. The paper utilized secondary data to meet the first objective and applied linear regression and logit models to meet the second objective.

Results from the trend analysis reveal that during the past seven years, the overall ranking of Uganda based on its state of business climate has deteriorated. Furthermore, the Ugandan position in relation to the macroeconomic environment, public institutions and infrastructure has worsened. Limited access to finance, corruption, poor utility services, high taxes and inefficient

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Table 6: Logit estimates

Panel A: Logit estimates
logit *incositu bdsfin1 invmac2a mktpr12 typebu1 location gender edubusin formtaxd eduow2 selfemp2 inbdsmkt*

Variable	Coeff.	Std. Err.	*z*
Limited access to productive resources (*bdsfin1*)	−4.411***	1.421	−3.1
Investment trend (*invmac2a*)	0.985	0.720	1.37
Limited access to market (*mktpr12*)	−2.436*	1.619	−1.5
Sector (*typebu1*)	0.691	0.681	1.01
Location	−1.224**	0.561	−2.18
Gender	−1.297**	0.648	−2
Education in business (*edubusin*)	1.008*	0.563	1.79
High taxes (*formtaxd*)	−1.062*	0.627	−1.69
Education of the owner (*eduow2*)	0.194	0.526	0.37
Motivation to start the business (*selfemp2*)	−0.646	0.549	−1.18
Interaction *bdsfin1*mktpr12* (*inbdsmkt*)	3.566*	2.345	1.52
_cons	2.631**	1.198	2.2
Number of obs.=		105	
LR $chi^2(11)$=		28.96	
Prob > chi^2=		0.002	
Pseudo R^2=		0.227	
Log likelihood=		−49.232	

Panel B: Marginal effects after logit
y= Pr*(incositu)* (predict). Thus, *y*= 0.23.

variable	d*y*/d*x*	Std. Err.	*z*
bdsfin1	−0.780***	0.243	−3.21
invmac2a	0.174	0.127	1.38
*mktpr12**	−0.364*	0.204	−1.78
*typebu1**	−0.364	0.098	1.13
*location**	−0.212**	0.090	−2.35
*gender**	−0.265**	0.141	−1.88
*edubusin**	0.191*	0.110	1.74
*formtaxd**	−0.170**	0.088	−1.93
*eduow2**	0.034	0.093	0.37
*selfemp2**	−0.117	0.100	−1.16
inbdsmkt	0.631*	0.412	1.53

(*) d*y*/d*x* is for discrete change of dummy variable from 0 to 1

Note: ***, **, and * imply significant at 1%, 5%, and 10% respectively. The terms in the table are as defined in Table 4.
Source: Authors' computations.

government bureaucracy were the critical constraints to business growth since the 1990s and have continued to be critical. Institutions offering BDS are either still weak (Krasemann, 1996; Kyomugisha, 2001), offering non-useful services to MSEs (GoU/MFPED, 2008), or crowding them out (Cotton *et al*., 2003).

The results from the regression analyses reveal that MSEs which rated limited access to market as their major problem attained lower turnover and their growth potential is low. Thus, managers in MSEs may need to position their firms by producing relatively high quality products and undertaking joint marketing strategies in order to penetrate in differentiated market segments. This can be encouraged by facilitating MSEs' participation in sub-contracting arrangements, trade fairs and joint marketing.

When MSEs face obstacles limiting their investment in productive assets, they perform poorly. Investment obstacles can be lessened by encouraging the private sector to supply equipment/machinery and spares used by MSEs in the local market and to offer affordable technical services; and promoting/facilitating the integration of MSEs into local and GVCs to access technology, knowledge, managerial skills and export markets (Ishengoma and Kappel, 2007; Keller, 2004; Morrison, *et al*., 2006; Antràs and Helpman, 2004).

The results show that MSEs' growth is positively associated with access to BDS and finance as these resources may enable a firm to produce quality products and access the market at low transaction costs. High taxes limit the performance and growth potential of MSEs by reducing their internal sources of financing, discourage their expansion, formalization and participation in subcontracting arrangements. The tax system may need to be restructured to encourage MSEs' growth.

Notes

1. Some factors in the business environment (FinBE) might be a serious problem to MSEs in some subsectors but not in others. For example, limited access to capital (equity/debt) and space of operation greatly retard the growth of MSEs in wood/furniture and metal but not in textiles (Sengondo *et al*., 2001). These are serious constraints to manufacturers but not to traders and service providers (House, 1984).

2. See Ishengoma (2005) on the case of limited supply of technical services faced by small bread manufacturers in Tanzania. The manufacturers were forced to consult technicians from Kenya. This increased their maintenance costs.

3. Sample MSEs were asked to indicate one of the sales intervals: Ugandan shillings (in 000s) 0–30, 30–50, 50–100, 100–200, 200–500, 500–1000 and above 1000. Sales intervals were in Ugandan shillings (in 000s).

4. The intervals were transformed into mean values of 15, 40, 75, 150, 350, 750 and 1000.

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5. The question on investment trend structured into a four-point scale was transformed into the index values as 0 = no investment, 0.33 = small investment, 0.66 = medium investment, 1 = high investment attained during the past five years.

6. Pairwise correlation:

	Pairwise correlation of continuous variables			Regression results		
	invmac2a	*bdsfin1*	*Investob*	independent variables	Coefficient.	
invmac2a	1			*invmac2a*	0.006	bdsfin1 is a dependent variable. R-square = 0.021
bdsfin1	0.0126	1		*mktpr12*	0.0774*	
investob	0.2483***	0.4174***	1	Constant	0.630	
Obs		105		121		

Figures with ***, **, * implies very significant, significant and weakly significant, respectively. The regression results show that when regressing *bdsfin1* on *mktpr12* and *invmac2a*, the relationship between *bdsfin1* and *mktpr12* is weakly significant.

7. Test of equality between *bdsfin1* and *investob:*

Variables	*bdsfin1*	*Investob*	*mktpr12*	*typebu1*	*location*	*gender*	*edubusin*	*formtaxd*	*eduow2*	*selfemp2*	*bdfinsto*	*_cons*
Coeff.	1.987	1.709	−0.236	0.532	−0.179	−0.592	0.422	−0.337	0.647	0.469	−3.279	4.005
	(0.974)	(0.836)	(0.198)	(0.249)	(0 0.185)	(0.256)	(0.217)	(0.205)	(0.199)	(0.200)	(1.415)	(0.592)
(Standard error)												
t values	2.04	2.04	−1.19	2.14	−0.97	−2.31	1.94	−1.64	3.24	2.34	−2.32	6.76
Obs	F(11, 91)	Prob > F	Adj R^2									
103	4.12	0.0001	0.2519									

Test *investob* = *bdsfin1*; (1) – *bdsfin1* + *investob*; $F(1, 91) = 0.15$; Prob > $F = 0.7025 = 0$

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 (ln*salepm*) of MSEs are equal.

8. The data was collected by a team at the Centre for Basic Research, Kampala and Professor Dr Robert Kappel, the co-author of this paper.

9. See below for detailed descriptive statistics disaggregated by subsectors. Business constraints, owners' attributes and firms' characteristics by subsector

	Loan use		High tax (*formtaxd*)		Limited market access (*mktpr12*)		Gender		Total
	No	Yes	Otherwise	Severe constraints	Otherwise	1st or 2nd problem	Female	Male	No
Cloth, textiles & leather works (%)	65	36	72	28	63	38	53	47	100
Metal works and furniture (%)	78	22	61	39	62	38	11	89	100
Total (%)	75	25	64	36	62	38	22	78	100
	Self employed (*selfemp2*)		*eduow2*		*edubusin*				Total
	No	Yes	No	Yes	No	Yes			No
Cloth, textiles & leather works (%)	38	63	41	59	50	50			100
Metal works and furniture (%)	50	50	58	42	74	26			100
Total (%)	47	53	53	47	68	32			100

Number of observations = 120.

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Monthly sales, *investob*, *bdsfin1*, *invmac2a* by subsectors

	Monthly sales		*Investob*		*bdsfin1*		*invmac2a*	
Subsectors	Cloth, textiles & leather works	Metal works and furniture	Cloth, textiles & leather works	Metal works and furniture	Cloth, textiles & leather works	Metal works and furniture	Cloth, textiles & leather works	Metal works and furniture
Mean value	312.500	263.333	0.650	0.670	0.625	0.672	0.342	0.390

Number of observations = 107.

10. The reported percentages are expressed in antlogs of the estimated coefficients minus one and then expressed in percentage.

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

12. Predicted probability of income to grow (*proincs2b*) when limited access to productive resources is greater or equal to average or less than average value.

		proincs2b			
Condition	Obs	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

Source: Authors' computation.

12. MSEs which reported limited access to productive resources is not a major constraint are those whose index values on this variable are below an average index value, and the reverse is true for those which reported otherwise.

13. Predicted probabilities when limited access to market and high taxes are not major problems:

prvalue, *x*(*mktpr12* = 0 *formtaxd* = 0) rest(mean)

Pr(*y*=1*x*):	0.5122	95%	ci:	(0.2144,0.8016)				
Pr(*y*=0*x*):	0.4878	95%	ci:	(0.1984,0.7856)				
	bdsfin1	*invmac2a*	*mktpr12*	*typebu1*	*location*	*gender*	*edubusin*	*formtaxd*
x=	0.66857143	0.4037143	0	0.75238095	0.47619048	0.76190476	0.35238095	0
	eduow2	*selfemp2*	*inbdsmkt*					
x=	0.5047619	0.56190476	0.26095238					

14. Predicted probabilities when limited access to market and high taxes are major problems: prvalue, *x*(*mktpr12* = 1 *formtaxd* = 1) rest(mean)

Pr(*y*=1*x*):	0.0308	95%	ci:		(0.0026,0.2807)			
Pr(*y*=0*x*):	0.9692	95%	ci:		(0.7193,0.9974)			
	Bdsfin1	*invmac2a*	*mktpr12*	*typebu1*	*location*	*gender*	*edubusin*	*formtaxd*
x=	0.66857143	0.4037143	1	0.75238095	0.47619048	0.761905	0.352380	1
	Eduow2	*selfemp2*	*inbdsmkt*					
x=	0.5047619	0.56190476	0.26095238					

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