Firm Capacity Utilization in Ghana: Does Foreign Ownership Matter?

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Abstract

One major policy change that has driven enterprise development in Ghana over the past two decades has been the opening of the sector to private and foreign participation. Using firm-level cross-sectional data for on Ghanaian enterprises for the year 2006 within an endogenous switching regression model, we analyze the question whether enterprises with high foreign ownership concentration exhibit different levels of capacity utilization from domestically owned firms. It was found that firms that choose to engage foreign partners have higher capacity utilization than a random firm from the sample would have and those who engage more domestic partners do no better or worse than a random firm from the sample. Other findings suggest that the level of demand, capital-labour ratio, wage productivity, and labour productivity are significant determinants of capacity utilisation. Increasing openness to foreign participation and allowing firms more flexibility to make factor choices by reducing strict labor regulations can positively affect capacity utilization.

Keywords: capacity utilization, firm ownership, endogenous switching regression

1.   Introduction

It is an undisputable fact that most developing countries are characterized by a rapidly growing population and labour force. Absorbing the growing labour force in productive employment is one of the principal challenges facing many African governments. While much of the labour force is absorbed in traditional agriculture, an increasing number of labour seeks employment in non-farm occupations especially the small and medium-scale enterprises (SMEs). For SMEs to be in the position to absorb the excess labour, it is imperative for them to grow. A wide range of literature indicates that high capacity under-utilization is a key factor that inhibits the expansion of many SMEs in Africa. There is evidence that existing stock of industrial capital is left idle most of the time especially in Africa.

The level of capacity utilization in industry is a direct measure of the extent to which assets are productively employed. A high level of capacity under-utilization in the midst of scarce investment funds is tantamount to resource misallocation. Increasing capacity utilization would not only save capital and foreign exchange but would also provide additional employment by increasing the number of shifts over which capital equipment is worked. Moreover, increased capacity utilization enhances production of more goods and services to meet domestic demand which may otherwise be imported thereby conserving foreign exchange.

Paradoxically, shortages of capital is one of the major constraint to growth and industrialisation in developing economies, yet, many enterprises in developing countries are unable to fully utilize the available capacity. Even though the determinants of capacity utilisation have become more clearly identified, the literature is not extensive as regards the possible link between capacity and firm ownership structures. Foreign-backed firms are generally known to possess greater expertise, new technologies and may offer superior access to external capital markets and resources compared to domestic firm owners. Foreign-backed may also differ from domestic-backed firms in terms of corporate governance, work ethics and operational engineering strategies. For example, the discipline, hard-work and frugality of Chinese and other Asian countries are the source of much admiration for many people. Do these traits of foreign-backed firms per chance translate into high capacity utilization? Do private firms in Ghana that are majority-owned by foreigners exhibit different levels of capacity utilization than private majority-owned Ghanaian firms? These are the research questions the study seeks to answer.

Even though quite an extensive literature already exists on capacity utilization, very few of these studies relate capacity utilization to firm ownership, especially in the specific case of Ghana. Also, a number of these studies document that the presence of foreign-backed firms promotes higher productivity, even though they point to limited or no significant efficiency spillovers (Blomstrom, 1986). Hence there is the need to gain empirical knowledge not only of the extent of capacity utilisation but also of the various factors influencing the gap. This study particularly seeks to find out whether a firm's ownership concentration (whether domestic or foreign) is related its capacity utilization.
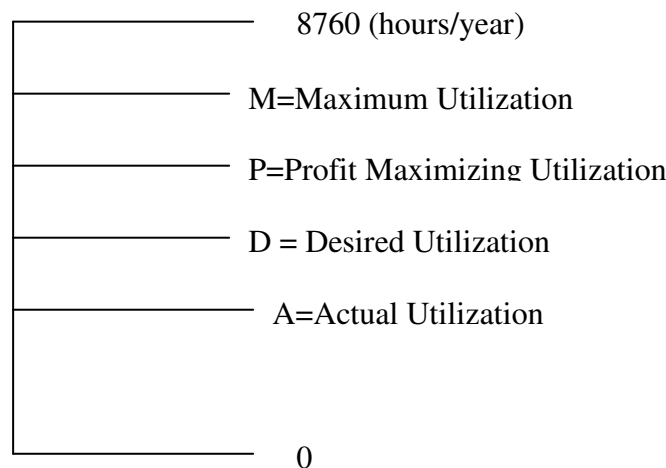
Evidence of the effect of firm ownership variables on capacity utilization is useful for policy guidance. Ghana embarked on a privatization program in the 1990s as part of wide range of economic reforms aimed at creating an enabling environment for sustainable growth and development. The program marked the beginning of the deregulation of the economy and its transformation from an inefficient and import-dependent economy to one that is diversified, dynamic, efficient and export-oriented with a greater role for the private sector. Among other goals, the Ghana's privatization program sought to address issues relating to over staffing, excessive

bureaucracy, lack of technical expertise, low incentives for workers and management, inadequate working capital and investment in new plant and machinery, which led to low capacity utilization. Admittedly, privatization of State-owned Enterprises (SOEs) following the reforms in Ghana has proceeded without much knowledge of either its impact or contribution towards improving capacity utilization. Sufficient time has elapsed since the privatization program got underway in Ghana and it would be worthwhile to assess the extent to which ownership structures, among other relevant explanatory variables affects capacity utilization.

2.   Theoretical Issues Underpinning Capacity Utilization

Capacity utilization generally reflects on average the efficient use of available resources and captures the output gap between actual output and capacity output. Theoretical perspectives on the subject of capacity utilization have been extensively discussed in Marris (1964), Winston (1971) and Mensah (2002). The figure below helps in conceptualizing the concept of capacity utilization from a theoretical perspective.[1]

Figure 1: Levels of Capacity Utilization

8760 (hours/year)

M=Maximum Utilization

P=Profit Maximizing Utilization

D = Desired Utilization

A=Actual Utilization

0

Given the very unlikely situation where capital is available 100 percent of the time, full capacity utilization will require the maximum use of 8760 hours (i.e. 365 days x 24 hours) per year. But this scenario is not realistic and may not be possible throughout the year for many reasons including plant shut down time for maintenance. Capacity utilization therefore implies that full capacity may be less than 100 percent "capital utilization". Point M can therefore be regarded as the maximum capacity utilization level, though it may also not necessarily be the optimal for the firm. Point M corresponds more to the general engineering and technical notion of capacity. This can be distinguished from point P which represents the optimal or economic notion of capacity determined by the short and long-run profit maximizing (or cost minimizing) behavior of the firm. This is determined by the point of tangency between short-run average cost (SRAC) and long-run average cost (LRAC). At this point, short-run marginal cost (SRMC) equals long-run marginal cost (LRMC). If constant returns to scale would prevail, then capacity output would correspond to the minimum point on the SRAC curve. But depending on existing market conditions and/or the economic variables incorporated in the neoclassical production function, firms may reach the optimal scale (minimum point of LAC) or remain at suboptimal scale (falling part of his LAC) or surpass the optimal scale (expand beyond the minimum LAC). This kind of capacity utilization may be desired (M-D or M-P) or undesired (D-A or P-A).

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[1] This was sourced from an un-authored internet source available at:
www.dspace.vidyanidhi.org.in:8080/dspace/bistream/…/UOH-1999-207-3.pdf Points M, P, D, and A are not necessarily in the order or at the level shown in figure.

Figure 2: Excess Capacity
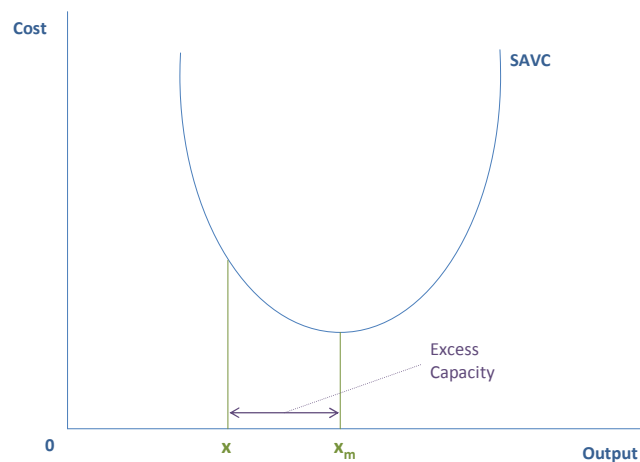
Source: Koutsoyiannis (1979)

From figure 2 above, if the firm produces an output X smaller than X_m there is excess capacity, equal to the difference $X_m - X$ which may be desired (planned) or undesired (unplanned). In developing countries, undesired capacity under-utilization may be attributed to deficient demand, input shortages, technological failure and other structural bottlenecks. Desired excess capacity can be explained by differences in relative prices. For example, firms faced with growth in demand may either choose to meet this demand by building a new plant, or by running their existing plant more intensively. The costs of capital equipment relative to that of worker night-shift payment will be one major factor influencing the cost calculations of producers in determining the least cost of these two alternatives. Normally, worker night-shift premiums are high and may be unprofitable for firms. Despite the focus on labour, capital costs that are kept below economic levels, for example by interest rate ceilings or an over-valued exchange rate, are also part of the neo-classical explanation of desired excess capacity. If capital assets are kept relatively cheap, it is argued that producers will be motivated to utilize them fully. The type of market structure under consideration may also explain desired capacity under-utilization. The monopolist, for example has enough time in the long run to expand plant size or to use plant at existing level which will maximize profit. But with entry blocked, there is no guarantee that the monopolist will use the existing plant at optimum capacity. The monopolist will most probably continue to earn supernormal profit even in the long-run, given that entry is barred.

Beyond the theories of market structure, the idea of reserved capacity conveys a slightly different notion from excess capacity which arises with the traditional U-shaped costs theory of the firm. In modern theory of costs, a producer may purchase a plant built with a reserved capacity of $X_1 - X_2$ as in figure 3.

Figure 3: Reserved Capacity
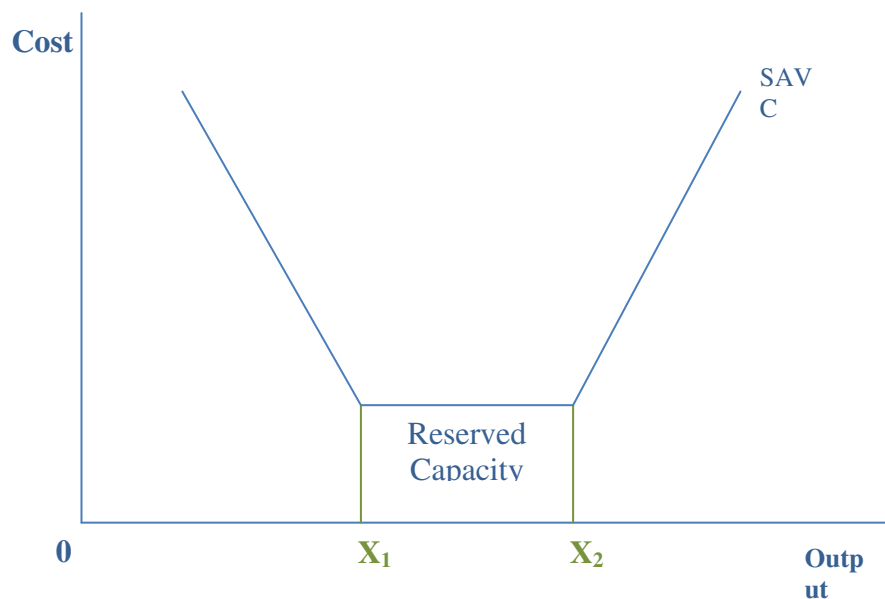
Its normal production could be, say X_1. However, when the economic climate improves it could use its reserved capacity to produce X_2. Therefore one would realize that for most of the period, the firm would be producing its normal quantity X_1 which is below full capacity of X_2, therefore accounting for the low capacity utilisation (Koutsoyiannis, 1979). Every producer will plan to install a plant which will have a capacity larger than the expected average level of sales because the producer wants to have some reserved capacity for various reasons - (i) to meet seasonal and cyclical fluctuations in demand; (ii) to allow greater flexibility for repairs of broken down machines without disrupting the smooth flow of the production process; (iii) to meet a growing demand until further expansion of scale is realized; and to (iv) to allow for flexibility for minor alterations of the style of product in view of changing taste of customers.

In an attempt to operationalize the concept of capacity utilization for empirical analysis, analysts have used different measurements and determinants. These measures differ by the manner in which potential or capacity output is defined and largely influenced by the availability of existing data. Hornstein (2002) discusses the measure based on shift-work and the work-week of capital which captures the service flow of the capital stock and is proportional to the average duration of time which a unit of capital is operated. But shift-work and work-week based analysis presents problems particularly in developing countries where data are poor and limited in coverage. The Wharton or peak to peak index of capacity utilization as cited in Ragan (1976) is widely used in the United State of America. With this measure, values of industrial production obtained from the federal research bureau are constructed by making of cyclical peak of thirty component indexes (each index represents one industry). One then fits a line segment between successive peaks of each quarter after putting the values on a graph. This trend line constructed would represent an index of capacity. Thus, the capacity coefficient would be calculated as the ratio of actual output for a particular time t to the trend line value for the period.

The McGraw-Hill measure also reviewed by Ragan (1976) computes capacity utilization as the ratio of actual output to planned output. The planned output is the targeted output set to be achieved by management of a firm within a year. Planned output is guided by factors such as availability of inputs, financial strength, demand for the product, availability of electricity and others. On a more general note, many studies according to a review by Blomstrom (2000) measure capacity utilization as the amount of output actually produced relative to the maximum amount that could have been produced using existing facilities including machinery, equipment and regular shifts. This is computed as actual capacity divided by installed capacity. The data envelopment analysis (DEA) technique which is normally used measure technical efficiency has also been used to compute excess capacity. Evaluating capacity from this perspective requires establishing deviations from "best practice" performance taking all types of inputs into account, and comparing the resulting measures to those considering only the use of capital inputs, unconstrained by the availability of variable factors. The resulting capacity utilization measures are touted as a basis for establishing benchmarks for reducing excess capacity.

A survey of the empirical literature reveals an extensive list of variables that qualify as determinants of capacity utilization. Common ones include wage rate, the price of capital, the size of the night shift wage premium, the capital intensity of the production process and the plant size. The causes of capacity under-utilization in developing countries have been explained from the Structuralist and Neo-classical perspectives (Mensah, 2002). The former relates capacity under-utilization to bottlenecks such as limited market size, limited supply of foreign exchange and inadequacies in the non-traded sector like poor power supply and transport. In contrast, the Neo-classical economists attribute it to economic distortions in terms of relative prices of inputs and outputs, overvaluation of the exchange rate, lack of competition, quantitative restrictions and rent seeking which hinder productive use of capital assets by entrepreneurs. These and other determinants have been extensively used in many empirical studies including Winston (1971), Bautista *et al,* (1981), Ndulu (1986), Ewusi (1986), Weiss (1988), Harvrylyshyn (1990), Steel and Webster (1991); and Mensah (2002).

This study sheds light on the role that ownership type plays in firm capacity utilization and offer insights to policy makers interested in improving the broad concept of corporate governance. The agency theory of the firm as well as Leibenstein's theory of X-efficiency is emphatic that firm ownership structures affect the efficiency of monitoring mechanisms (Fazlzadeh et al 2011). Traditionally, firms with majority of foreign partners are generally known to possess greater expertise, new technologies and may offer superior access to external capital markets and resources compared to domestic firm owners. Firms with majority foreign ownership, compared with domestic ones may also differ in work ethics and operational engineering strategies. While there is a relatively large literature on the effects of ownership on firm performance (for example, Kaserer and Moldenhauer, 2008; Hasan and Butt, 2009; Daraghma and Alsinawi, 2010, Uadiale, 2010; Lin and Wu 2010; and Fazlzadeh et al, 2011), very little is known about the specific effect of firm ownership on capacity utilization, especially on Ghana.

3.   The model

In order to assess the impact of firm ownership type on capacity utilization, the paper employs the endogenous switching regression technique.[2] This is specified as follows:

$$\ln CU_{1i} = X_i\beta_1 + \varepsilon_{1i} \qquad \text{-------------------------------- (1)}$$

$$\ln CU_{2i} = X_i\beta_2 + \varepsilon_{21} \qquad \text{--------------------------------(2)}$$

$$I_i^* = \delta(\ln CU_{1i} - \ln CU_{2i}) + Z_i\gamma + \mu_i \quad \text{--------------------------------(3)}$$

Where I_i^* is a latent variable that determines the decision to engage foreign partners; CU_{1i} is the average capacity utilization level of firm i with ownership type j; Z_i is a vector of characteristics that influence the decision regarding foreign ownership. X_i is a vector of variables that influence capacity utilization (defined below). β_1, β_2 and γ are vectors of parameters, and μ_i, ε_1 and ε_2 are the disturbance terms. The observed dichotomous realization I_i of latent variable I_i^* of whether firm i is of a particular ownership regime has the following form:

$$I_i = 1 \quad \text{if } I_i^* > 0$$

$$I_i = 0 \quad \text{otherwise}$$

The motivation underlying the use of switching regression technique is based on potential problem of self-selection into the two ownership regimes (foreign and domestic). Differentials in capacity utilization could arise not because of intrinsic characteristics of foreign or domestic firms, but because of self-selection of more productive (more educated) workers and entrepreneurs into the foreign sector. For example, one might notice significantly higher capacity utilization for domestic firms and credit this difference to the ownership structure. However, domestic firms may have systematically different characteristics from foreign-owned firms due to self selection. Firms with majority of foreign owners might have hard-working, studious, dedicated workers or may possibly tend to invest more efficiently and at the correct times compared with domestic firms, explaining the difference between the two groups. Neglecting these selectivity effects is likely to give a false picture of how average capacity utilization varies between firms with different ownership types. The simultaneous maximum likelihood estimation of equations 1-3 corrects for the selection bias in capacity utilization estimates. The approach relies on the joint normality of the error terms in the binary and continuous equations. The maximum likelihood of the above specification is implemented using the movestay command in STATA.

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[2] A discussion of this modeling approach is available in Lokshin and Sajaia (2004)

4.   Data

Data used in this study was drawn from the World Bank sponsored survey of manufacturing enterprises in Ghana (and elsewhere in other selected countries) for the year 2006 as part of its Regional Program on Enterprise Development designed to benchmark the productivity and investment climate of individual economies across the world and to analyze firm behavior and performance. Even though there were 609 firms in the original sample, the analysis was based on 285 firms due to missing data for some selected variables. About two-thirds of firms in the sample were based in the Accra-Tema metropolitan area, with the remaining firms in Kumasi, Takoradi, and Tamale. The sample was mainly composed of small (5-19 employees), medium (20-99 employees) and large (100 and more employees) enterprises. Both firm level data and employee level data were collected. The firm level data collected includes information on firm size, age, legal status, industry sector, and ownership, sales, costs, investment and other financial information. The employee data includes wages and background information. The explanatory variables used in this study include those considered important in previous studies by Bautista *et al.* (1981), Steel and Webster (1991) and Mensah (2002) as well as those thought to be theoretically interesting and peculiar to Ghana. The definition and measurement of the variables are as follows:

(i)   Capacity utilization – is the establishment's average capacity utilization, defined as the amount of output actually produced relative to the amount that could have been produced using your facilities at the time (existing machinery, equipment and regular shifts). Given the missing responses for this particular question, we ended up using the alternative definition of capacity utilization based on the number of hours per week the establishment normally operated.

(ii)   Ownership of firm is being used here to refer to the percentage of capital owned by private domestic individual/companies/organizations or private foreign individuals/companies/organizations;

(iii)   For the level of demand, sales value for the year can be used as a proxy;

(iv)   Capital-labor ratio is defined by the ratio of the number of machines and equipment to the number of people employed for the year;

(v)   Profit-capital investment ratio is measured as the ratio of amount of profit to the amount spent on machines, raw materials and equipment for the year;

(vi)   Wage productivity - measured as the ratio of actual output to the wage bill for the year;

(vii)   Labor Productivity is defined as the ratio of total sales less raw material costs to total number of workers in the previous year.

5.   Results and Discussion

5.1   Descriptive Statistics

The first part of the results provides a description of some of the variables used in the model in terms of means, standard deviations and the percentage of distribution of the survey. Table 1A shows how average capacity utilization varies by firm ownership in Ghana. We find an average capacity utilization level of 61.39 for domestic enterprises compared with 57.00 for foreign firms in Ghana. The difference of 4.39 was found to be statistically significant at the 5 percent level.

Table 1A: Average Capacity Utilization by Ownership Type in Ghana

Ownership Type	No. of Firms	Mean	Std. Dev	Minimum	Maximum
Domestic Ownership	388	61.39	18.212	4	168
Foreign Ownership	19	57	27.663	6	144

Note: The difference between average capacity utilization between foreign and domestic firms was found to be significant at the 5 percent level.

In Table 1B, we show how average capacity utilization levels vary by firm size. It was not surprising to find small-scale enterprises (employing between 5 and 19 people) who generally have limited access to capital with higher mean capacity utilization levels of about 57.88 compared with medium sized (55.46) and large firms (20.280). Small farms are believed to be more efficient, for example because they can use available resources more effectively and closely monitor production activities.

Table 1B: Average Capacity Utilization by Size of Firm in Ghana

Size of Firm	No. of Firms	Mean	Std. Dev	Minimum	Maximum
Small (5-19)	188	57.883	13.469	12	105
Medium (20-99)	72	55.458	15.958	6	120
Large (100 and more)	25	20.280	35.147	40	168
Missing	122	67.803	20.123	4	119

The results from the study show higher capacity levels compared with previous ones. For example, Mensah (2002) noted that 89 percent of some selected small-scale industries surveyed in the Central Region operated at 60% or less of capacity with a mean of 33.6%. Steel and Webster (1991) also noted that 86% of small enterprises surveyed in Ghana were operating at 50% or less of capacity with an average of 36% and variations are much greater within than between sub-sectors. In the study by Bautista *et al.* (1981) the mean capacity utilisation of the firms ranged from 35% in Israel, 36% in Colombia to 42% in the Philippines and 50% in Malaysia.

Table 1C: Average Capacity Utilization by Sector

Sector	Number of firms	Mean capacity utilization	Std Dev	Minimum	Maximum
Other manufacturing	57	59.63	17.499	40	144
Food	77	54.66	16.600	18	105
Textiles	4	49.50	7.550	42	60
Garments	123	58.56	11.662	12	96
Chemicals	6	84.33	51.232	40	168
Plastics and Rubber	5	60.8	51.548	6	144
Non-metallic mineral products	8	57.25	13.253	45	80
Fabricated metal products	20	57.50	9.185	40	72
Machinery and equipment	5	69.00	31.733	40	120
Electronics	1	66	--	66	66
Construction	1	--	--	--	--
Other services	34	77.30	17.745	50	105
Wholesale	7	48.00	--	48	48
Retail	175	66.35	19.056	4	105
Hotels and restaurants	44	78.67	19.965	50	119
Transport	8	72	--	72	72
Information Technology	34	90.40	25.106	48	112
Total	609	100.00			

In Table 1C, we match the type of activity their mean capacity utilisation levels and standard deviations for the enterprises surveyed in 2006. Information technology enterprises have the highest mean capacity utilisation followed by the chemicals, hotel and restaurants, transports and other services sub-sectors. The wholesale and textile firms were found to have the lowest capacity utilization levels.

5.2   The Endogenous Switching Regression Results
         The full information maximum likelihood estimates of the endogenous switching model based on pooled cross-sections data are reported in Table 2. In the table, the ownership type indicator for domestic firms takes value 1 if the firm is majority locally owned and 0 if firm has majority foreign ownership.

Table 2: Full Information Max. Likelihood Estimates of the Switching Regression Model

Variable	Capacity Utilization (Foreign Firms)	Capacity Utilization (Domestic)	Select Equation (Domestic)
Log of Wage Productivity	0.3617*	0.008253	-
Log of Labor Productivity	-0.65422**	-0.052902*	-
Level of Demand (log of sales)	0.25013*	0.027696*	-
Capital Labor Ratio	0.012733	-0.000235	-
Loan Access	0.9588***	0.033582	-
Export Zone	-0.37411	-0.092216*	1.0610**
Firm Size	-	-	-.00287**
Constant	8.22999**	4.65856**	-0.1238

*Means difference is significant at 10%, ** means difference is significant at 5% and *** means difference is significant at 1%.

Table 3: **Correlation coefficient and Wald Test**

Indicator	Coefficient	Significance
Rho 0	-0.973123 **	
Rho 1	0.033083	
Wald chi 2 (6)	28.39	Prob > chi2=0.0001
LR test of independent equations chi 2 (2)	2.04	Prob > chi2 =0.3602
Number of Observations 285		

The first and second columns of table 2 present the estimated coefficients of the capacity utilization functions for the majority foreign-owned and majority domestic-owned firms respectively whiles the probit selection equation for the ownership structure is shown in the third column. In table 3, a Wald test for the difference between domestic and foreign firms produced a Chi- square of 28.39 at less than 5% confidence level. This means that the level of capacity utilization between domestic firms and foreign firms is statistically different. The likelihood ratio test for joint independence of the three equations rejected the null hypothesis that all slope coefficients are equal to zero. The simultaneous modeling based on the switching regression technique was justified given the highly significant off-diagonal values of the error covariance matrix and the error correlations.

The correlation coefficient (rho_0) between the ownership regime and the foreign capacity utilization equation (table 3) is negative and significant. The intuition here is that by splitting the data into ownership regimes and estimating simultaneously, firms that engage foreign partners are more likely to have higher capacity utilization compared with domestically-owned firms based on some observed and unobserved factors that influence firm ownership. This means that estimating a single capacity utilization equation based on a random sample of firms may be inappropriate and misleading in the sense that the true impact of firm ownership on capacity utilization may be understated. The corresponding correlation (rho_1) between the ownership equation and the domestic capacity utilization was positive but not statistically different from zero, implying that that firms who engage more domestic partners do no better or worse compared with an estimation based on a random sample of firms. Clearly, the hypothesis of absence of sample selectivity bias may be rejected, justifying the use of the endogenous switching model in this study.

The determinants for capacity utilization emerging from the full information maximum likelihood estimates of the switching regression model for all the firms are explained below. Profit–capital investment ratio (capital recovery) was found to be positively related to the capacity utilisation levels of SSIs. This is consistent with theory and other studies. For example, Mensah (2002) noted that a higher profit-capital investment would encourage high capacity utilisation. Therefore we expect firms with higher capital recovery to have a higher capacity utilisation. The estimated sign of the log of wage productivity (output-wage bill ratio) was found to be positive and significantly related to the capacity utilisation levels for firms with majority foreign ownership. This was not the case for domestically owned firms. This is not consistent with theory and other studies, for example, Bautista *et al.* (1981) found wage productivity to be negatively related to capacity utilisation but Mensah (2002) found wage productivity to be positively related to the capacity utilisation. It was explained that as the output (value-added) increases at a rate higher than wage bill, we expect capacity utilisation to increase. Capital-labour ratio in this study surprisingly turned out insignificant in relation to capacity utilisation level for the surveyed firms. With regards to the demand variable, proxied by the firms' sales, we find from the analysis that there is tendency for capacity utilization to increase when the level of demand is high, which is what we generally expect in theory. This result is consistent for both foreign and domestically owned firms. Having access to credit is an important variable in improving capacity utilization levels. This means there is higher probability for capacity utilization to increase with increases in access to credit. The importance of a firm's location in the ownership structure is clearly underscored in the analysis. A firm located in an export zone has a greater likelihood of attracting foreign investments. Strikingly, however, we find that the likelihood impact of firm size is negative and significant at 10 percent in the ownership selection equation.

6.   Conclusions and Implications

One major policy change that has driven enterprise development in Ghana over the past two decades has been the opening of the sector to private and foreign participation. Using firm-level cross-sectional data for on Ghanaian enterprises for the year 2006 within an endogenous switching regression model, the study analyzed the question whether enterprises with high foreign ownership concentration exhibit different levels of capacity utilization from domestically owned firms. The results suggests that firms that choose to engage foreign partners have higher capacity utilization than a random firm from the sample would have and those who engage more domestic partners do no better or worse than a random firm from the sample. These results imply that although domestic and foreign firms may have different characteristics, neither may inherently have more or less capacity

utilization. The signs and statistical significances are contrary to most expectations that foreign firms have higher capacity utilization regardless of their ownership status.

When a broad set of explanatory variables are included in the capacity utilization equations, the study concludes that that demand and supply related factors account for capacity under-utilisation and they have varying impacts depending on whether the firms have majority foreign ownership or majority domestic ownership. This conclusion is consistent with other studies like Mensah (2002) for Ghana. The current policy of opening enterprises in Ghana to private and foreign participation is likely to induce firms to export and therefore use resources more efficiently. Reducing trade barriers, providing firms with credit and allowing them more flexibility to make factor choices by reducing strict labor regulations can positively affect capacity utilization.

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