Private Investment for Structural Transformation and Growth in Africa: Where do Small and Medium-Sized Enterprises Stand?

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Abstract

This paper examines the relationship between private investment and structural transformation and growth in Africa with a special focus on small and medium-sized enterprises (SMEs). The results from the trend analysis show that private investment rates have increased modestly in recent times. At the same time per capita income growth has moved from negative to positive. The empirical growth and structural transformation models suggest private investment exerts a positive and statistically significance impact on per capita income growth, and the industry-to-agricultural output ratio. Major factors which determine the employment growth of SMEs in Africa are: firm's age, initial size, new investment incidence, and business practices (such as, business networking) The shares of employment imply that growth in the SME sector could help enlarge the share of industry in national output, employment and income. The major policy implication is the need to ensure a functional and enduring investment climate in order to encourage private investment in Africa. The role of SMEs, no matter how small, cannot be overlooked.

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1. Introduction

Empirical evidence suggests that countries with high standards of living are those that have altered successfully their production structure from dependence on agriculture to a more diversified one, with manufacturing and services sectors as lead sectors. Integral to the process of structural diversification is a commitment to investment, both private and public. For African countries, a major challenge is how to provide an enabling environment for investments by the private sector, given the current development paradigm of making the private sector "the engine for growth". While a sizable number of firms in the private sector tend to be of small size, there is a possibility for some to grow into medium sizes over time.[2] Arguably, such a growth process can contribute to the structural transformation process much needed in Africa. Against this backdrop, this paper examines the relationship between private investment and structural transformation and growth in Africa with a special focus on small and medium-sized enterprises (SMEs).

The specific objectives are to: (i) analyze trends in private investment in general and SMEs in particular (in terms of investment climate constraints, financing sources for new investments, employment growth, capacity utilization, innovation, corruption and crime); (ii) estimate the impact of private domestic investment on growth and structural transformation in Africa (using manufacturing/agricultural ratio and industry/agriculture ratio as proxy); (iii) examine the role of SMEs in the structural transformation and growth processes in Africa; and (iv) highlight the policy implications based on the empirical analysis conducted.

The rest of the paper is organized as follows. Section 2 provides a brief literature review. This is followed by a section on data and methodology. In Section 4, an analysis on trends in private sector investment in Africa is carried out. Some emerging facts on private sector investment and growth and structural transformation are presented. The major features of SMEs are also highlighted. The investment rates by firms in the SME sector and presented and discussed and linked to growth incidence in these firms. Section 5 presents the results from the empirical estimates. At the macro level, the impact of private investment on growth per capita and manufacturing/agriculture output ratio is presented and discussed. At the firm level, the determinants of employment growth in the SME sector are presented. Specific investment and development constraints confronting the operations of SMEs are discussed. This is followed by a final section on conclusion and policy implications. We turn our attention now to a review of the empirical literature on private investment.

2. Brief Empirical Literature Review

A considerable amount of work has been done on the determinants of investment in general and particularly private investment. In the context of countries in the developing world the relationship between private and public investment (in terms of 'crowding in' and 'crowding out') has been a major focus of analysis. Beyond the relationship between private and public investment, the concern for private investment has been in terms of its impact on growth. Among the authors who

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[2] Defining small firms to be those employing 1-19 workers, the survey of private enterprises by the World Bank between 2002 and 2006 suggests that about 52% of firms in low-income countries in Africa could be regarded as small-sized firms. In the case of middle-income countries in Africa, 46% of the firms fall into the small-sized category. See Appendix Figure A1 for a size-based frequency distribution of firms in Africa.

have contributed to investment analysis in Africa are Oshikoya (1994), Mlambo and Oshikoya (1999), Devarajan *et al.* (1999), Mataya and Veeman (1996), Khan and Reinhart (1990), and Gunning and Mengistae (1999).

Writing on the macroeconomic determinants of domestic private investment in Africa, Oshikoya (1994) found a positive relationship between public investment and private investment. The study spanned 1970 to 1988 and covered seven African countries, namely, Cameroon, Mauritius, Morocco, Tunisia, Kenya, Malawi and Tanzania. Though public investment ratios had fallen in some of the countries, particularly in Mauritius and Morocco, a strong positive impact of public investment on private investment was observed. The results suggested that: "the productivity of these types of investment may be as important as their magnitude in influencing private investment" (Osikoya, 1994, p. 589). Along the same theme, Mlambo and Oshikoya (1999) using a sample of 18 African countries for the period 1970 to 1996 found that fiscal, financial and monetary policy, macroeconomic uncertainty and trade variables were significant determinants of private investment in Africa. The study also found political stability to be a major factor in the determination of private investment rates on the continent.

In an analysis on the relationship between governance, transparency and private investment in Africa, Emery (2003) observed that private investment in a country had positive effects not only on growth but also on the incidence of poverty. While private investment has favourable outcomes, the level and nature of it is influenced by the quality of governance. The author notes that complex administrative regulation of business tends to create a high incidence of corruption and poor governance.

Growth accounting by the World Bank (2006), suggests low capital investment in Africa. The growth in capital per worker in Africa has generally been below the world's average. Between 1990 and 2003 Africa registered a negative growth in capital per worker (i.e., -0.05%) compared to the world's average of 0.93%.With an improvement in the schooling status on the continent, the contribution of human capital to growth increased by 0.4% in Africa from 1990 to 2003. With an estimated growth in output per worker of -0.09%, total factor productivity is estimated to be negative (i.e., -0.44%) for the 1990-2003 period. The world's average for total factor productivity was 0.67%. Based on these trends, the World Bank (2006, p.6) indicated that; "Africa is the slowest growing region in the world".

The World Bank (2005) drawing from empirical studies on the role of small firms in economic growth noted that, while SMEs together create more jobs than large firms, they also tend to experience higher layoff rates. Large firms on the other hand account for a greater share of net employment.[3] The share of net job creation by large firms in the early 1990s was 76% in Zimbabwe, 74% in Kenya and 56% in Ghana. In terms of opportunities for low-skilled workers, the World Bank observed that a larger role was played by SMEs. The importance of SMEs in the creation of jobs was also emphasized by Albaladejo (2002). He observed that through the expansion of existing firms and the creation of new start-ups, SMEs in Africa account for most of the private sector jobs available. Other advantages associated with SMEs include: a contribution towards a more equitable distribution of income; serving as stimulus for local and regional development as they tend to agglomerate to make an effective and rational use of resource

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[3] Large firms as used in this context refer to firms employing more than 100 people.

endowments; and the promotion of a culture of entrepreneurship and other business-related skills by virtue of low entry barriers (Albaladejo, 2002).

The issue of whether investment incentives influence the location of industries in the SME sector was examined by Ayeles (2006). Using a country case study on Ethiopia from 1992 to 1998, the author found that import and income tax exemptions were "weak policy instruments of indigenous SMEs and regional development in Ethiopia" because "most SMEs founders set up enterprises where they live, work, and in industries where they have obtained training or experience" (Ayeles, 2006, p. 12). What seemed to be the driving force for the start-up of enterprises in Ethiopia were better infrastructure, market and a broader enabling environment.

Liedholm *et al.* (1994), in their study on small enterprise employment growth in rural Africa found that an average of about 27% of enterprises surveyed experienced growth. About 23% of jobs occurred through net firm expansion, while the rest came from new starts. Countries included in the study were Botswana, Kenya, Malawi, Swaziland and Zimbabwe. Using data generated from baseline surveys, the percentage of enterprise that grew in each of the countries was as follows: 19% in Botswana; 35% in Kenya; 23% in Malawi; 17% in Swaziland; and 20% in Zimbabwe. An average of about 1% of the smallest firms were observed to have graduated (i.e., grew from employing 4 or less people to over 10 workers). The authors concluded that while small enterprises formed a dynamic part of rural African economies, a high percentage of new firms disappeared within the first three years of operation.

Ramachandran and Shah (1999) examined the link between minority entrepreneurship and firm performance in sub-Saharan Africa. They found that the educational attainment of firm managers influenced the performance of firms. Among the group of firms owned by Africans, a higher growth rate occurred for those firms which had managers with secondary or university levels of education. The authors observed that, generally, firms owned by non-indigenous Africans began with large sizes and grew faster than firms owned by indigenous Africans. The study focused on Tanzania, Kenya, Zimbabwe and Zambia and used 1992 and 1994 data from the Regional Program on Enterprise Development.

In sum, a quick review of the empirical literature shows that most of the studies on private investment effects on macroeconomic variables are based on data not beyond the first half of the 1990s. This current study, which spans 1990 through 2004, goes beyond the existing ones by capturing recent investment trends and quantitative impact on some macro variables. Moreover, it appears, to the best of our knowledge, that the evidence on SMEs in Africa is relatively sparse and until recently there had been limited firm-level data on the SME sector in Africa to allow for in-depth analysis on growth performance of SMEs. With the availability of World Bank's enterprise survey data for a number of private sector firms in Africa, and with the appropriate standardization of these datasets, this study provides recent insights on SMEs in Africa.

3. Data and Methodology
This study uses two levels of data: macro and micro. The macro data source comes from the World Bank's African Development Indicators, while the micro level data is obtained from the World Bank's Private Enterprise Surveys conducted between 2002 and 2006. A total of 43 African countries are included in the macro database used in analyzing the impact of private investment on

growth and structural transformation in Africa. In the case of the micro (firm) level data sets, a total of 29 African countries are involved. The absence of some observations on some key variables, notably employment growth rates, sets a limit on the degree of inclusion of all the 29 countries in the ensuing analysis on SMEs.

The methodology involves a cross-country analysis spanning 36 African countries. The choice of sample size is based on data availability for key variables of interest to our study. In estimating the impact of private domestic investment on growth and structural transformation, three-5 year averages of key variables were created from annual data from 1990 to 2004,and modeled in an econometric framework involving the use of ordinary least squares and two-stage least squares techniques. The use of five-year averages is meant to smooth out cyclical fluctuations. Following Devarajan *et al.* (2001), the major variables included in the models on per capita income growth rate are private investment ratio, public investment ratio, and initial per capita income. Our model also includes civil liberty incidence, time and low income status dummy variables. Data for this aspect of our paper is from the World Bank's African Development Indicators 2006.

Our analysis on SMEs is based on data from the World Bank's Private Enterprise Surveys conducted between 2002 and 2006. These surveys span 29 countries in Africa. The surveys provide a rich information base on private sector firm characteristics, investment climate constraints, finance, capacity utilization and innovation, labour relations, and business-government relations among other firm operation variables. In 2003, firms in 6 African countries were surveyed. These countries were Kenya, Uganda, Tanzania, Senegal, Mali, South Africa and Lesotho. Data from these countries (with the exception of Lesotho) are pooled and used in a cross-country micro-level growth analysis. The standardized threshold for SMEs is employment of less than 100 workers. Small firms are defined to be firms employing 19 or less workers; medium firms employ between 20 and 99 workers; large firms employ more than 100 workers.

Two growth performance measures are used in the SMEs models. The first is the growth rate of employment in enterprises, and the second measure is the incidence of net employment. We focus on growth performance of manufacturing sector firms. As noted by Tybout (2000, p. 11) the manufacturing sector is view by policy-makers in the less developed countries "as the leading edge of modernization and skilled job creation, as well as a fundamental source of various positive spillovers". Following Sleuwaegen and Goedhuys (2002) and Liedholm *et al.* (1994) the growth rate of employment in manufacturing sector SMEs is estimated by OLS, with firm's age and size as the major independent variables. The model estimated also includes additional variables, notably, new investment incidence, networking, current best-practices in business communication (i.e., use of email), sector dummies and country dummies.

The latter measure is constructed as a dummy variable with a value of 1 if the firm under consideration recorded a positive net employment in the most recent period under consideration.[4] In modeling the determinants of positive net employment among SMEs, we use a probit model of the following form:

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[4] Net employment in 2001 is measured by: Number of new employees hired - number of employees dismissed or laid off - employee who left due to sickness or death - employees who left the firm for other reasons. If result from this calculation is greater than zero, then positive net employment is said to have occurred.

$$NEM^*_i = x_i\beta + \varepsilon_i, \quad i = 1, \ldots, n \quad (1)$$
$$NEM_i = 1 \text{ if } NEM^*_i > 0$$
$$NEM_i = 0 \text{ if otherwise}$$
$$\varepsilon \approx N(0, 1)$$

where: NEM_i, the net employment status, is a binary response indicator of the ith firm determined by the underlying latent variable NEM^*_i; x_i is a vector of explanatory variables (firm's age, investment incidence, networking, sector of operation and country characteristics), β is a vector of unknown parameters to be estimated, and ε_i is the error term. The usual normalizations are imposed such that the variance of the error term ε is normalized to 1, and the cutoff point is normalized to zero. The coefficients obtained in the probit estimation only serve to provide a sense of the direction of the effects of the covariates on the dependent variable, and cannot be used for magnitude impact analysis. To examine the magnitude of impact, the marginal impact of the explanatory variables on the probability of current school enrolment are provided. We turn our attention now a trend analysis on private investment in Africa and growth dimensions.

4. Private Investment, Growth and Structural Transformation Trends
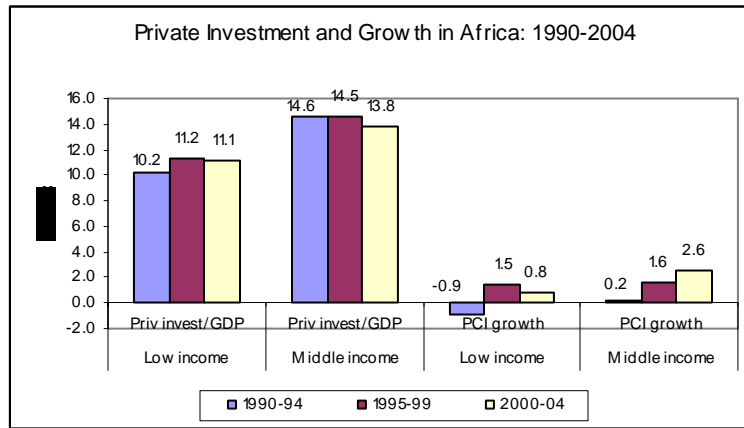
4.1 Macro Trends

Private investment ratios are higher in middle-income African countries than in low-income African countries. A similar trend occurs in the case of per capita income growth, as shown in Figure 1. The investment climate in specific countries tends to influence the incentive to invest and therefore the private investment rate realized. The gains from an improved investment climate ware not confines to only large countries, as noted by the World Bank (2005). Generally, private investment increases when improvements occur in investment practices, and both of these processes tend to be positively associated with growth.[5]

Figure 1 shows that private investment rate in low-income Africa increased from 10.2% in 1990-94 to 11.1% in 2000-04 (based on a sample of 36 low income countries in Africa). Per capita income growth which was negative in the early 1990s became positive during the second half of the 1990s and thereafter. In middle income Africa we observe that though investment rates were higher than in low-income Africa, these rates have fallen from 14.6% in the early 1990s to 13.8% in 2000-04. However, per capita income growth for the middle-income region has increased from 0.2% to 2.6%. These trends seem to suggest that it not simply the level of investment rate which matters but also issue of quality or productivity of investment needs not be overlooked. A scatter-plot showing the relationship between per capita income growth and private investment rate is displayed in Figure 2. There is a positive association between these two variables. The correlation coefficient for per capita income growth and private investment in low income Africa is 0.42.

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[5] The case of Uganda has been cited to illustrate the fact that small countries can benefit from better investment climate. According to the World Bank (2005), macroeconomic stability was achieved by Uganda in the 1990s. At the same time government reversed expropriations by previous governments, reduced trade barriers, reformed the tax and court systems and introduced private sector participation in telecommunications. The results were: a doubling of private investment rates; and GDP per capita growth of more than 4% from 1993 to 2002 (World Bank, 2005, p.27).

Figure 1

Private Investment and Growth in Africa: 1990-2004

Figure 2

Private Investment and GDP Per Capita Growth Rate in Low Income Africa: 1995-2004
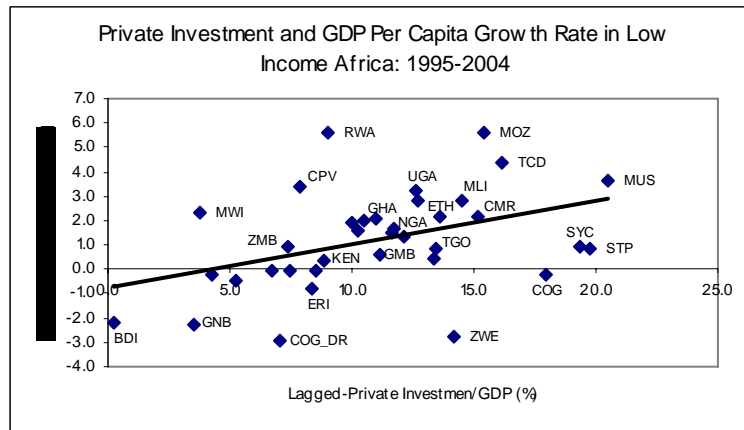
The notion of structural transformation is often associated with a shift in economic structure from agriculture to industrial production. The transformation process is seen as an inevitable accompaniment of rapid growth (Cook, 2006). To the extent that private investment affects economic growth, it could be seen as an important variable in the structural transformation process in Africa. While the dependence of African economies on agriculture is well-known there appears to be vestiges of modest shifts from agriculture to industry. The ILO (2007) estimates that employment in agriculture in sub-Saharan Africa fell from 68.1% in 1996 to 63% in 2006. At the same time employment in industry dipped slightly from 9% in 1996 to 8.8% in 2006, while employment in services increased from 22.9% in 1996 to 28.2% in 2006. It therefore seems that the gradual shift in the workforce from agriculture is more towards services than industry. This could be due to the slow pace in industry growth, and therefore in its inability to absorb the outflow of agricultural workforce.

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Figure 3 shows the ratio of private investment-to-public investment in low-income Africa increased by 0.9 percentage points from 1.8% in 1990-95 to 2.4% in 2000-04. For the same period under consideration the industry-to-agricultural output ratio increased from 1.4% to 1.7% in low-income African countries. The structural gap between middle-income African countries and low-income African countries is evident (i.e., high industry-to-agricultural output ratios of between 5.3% and 6.5%; and low industry-to-agricultural output ratios of between 1.45 and 1.7% respectively).

Figure 3
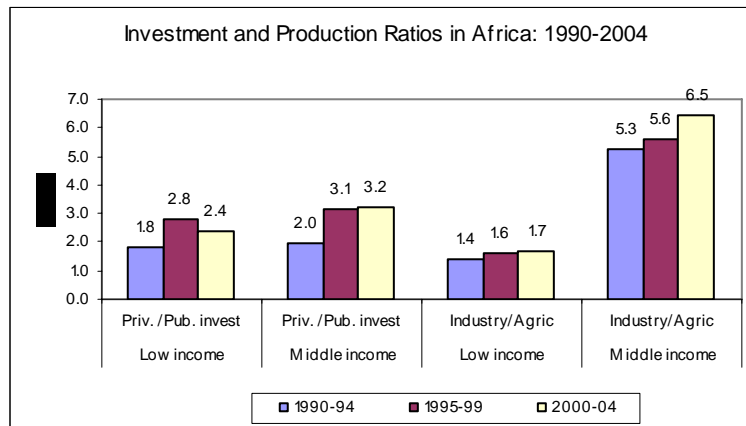
Note: Low income Africa is made up of 36 African countries. Middle income Africa is made up of 7 countries.
Source: Author's calculations based on data from World Bank's Africa Development Indicators, 2006.

Figure 4
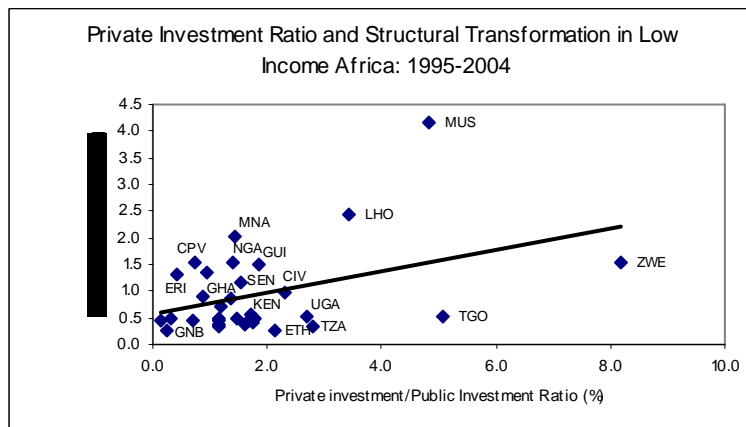
Note: Low income Africa is made up of 32 African countries with per capita income of less than US$755.
Source: Author's calculations based on data from World Bank's Africa Development Indicators, 2006.

The relationship between industry/agricultural output ratio (a proxy measure for structural transformation) and private investment ratio is shown in Figure 4. The highest private/public investment ratio occurred in Zimbabwe (i.e., 8.2%) and this was associated with an industry/agricultural output ratio of about 1.6%. On the other hand, the lowest private/public investment ratio of about 0.2% occurred in Burundi and Guinea Bissau. In Burundi the investment ratio was associated with an industry/agricultural output ratio of 0.4%, while in Guinea Bissau this

was 0.3%. Cote d'Ivoire, Ethiopia, Lesotho, Mauritius, Tanzania and Togo all recorded private/public investment ratios of not less than 2%. However, the ratio of industry-to-agricultural output ranged between 0.3% (in Ethiopia and Tanzania) and 4.2% in Mauritius. For the sample of 32 countries included in the scatter plot, there appears to be a positive association between private/public investment ratio and the proxy for structural transformation. The correlation coefficient for the relationship between these two variables is 0.4. How has the SME sector performed in Africa? We now shift the discussion to investment rates in the SME sector and growth performance in recent times.

4.2 Micro Level- SMEs

In terms of frequency, SMEs make up 81% of private sector firms in Africa (51% small-sized firms and 31% medium-sized firms). About one-fifth of SMEs have women as major owners. Female ownership of SMEs is higher in middle-income Africa (23%) than in low-income African countries (19%). The major areas of operation by SMEs are agro-industry, wood and furniture, metals and machinery, food, garments and textiles and plastic materials. Managerial capabilities tend to differ among countries. Using the educational attainment of top managers of SMEs as a proxy for managerial capabilities, the evidence suggests that in most cases no less than one-third of top managers of SMEs in Africa have either some university exposure or a graduate degree. In Mali and Uganda about 32% of SMEs in 2003 had managers falling into this category. In Kenya and South Africa, 63% and 70% respectively of top managers in the SME formal sector had some university or graduate degree.

Figure 5

Relationship between Age of SMEs in Africa and National Market Share: 2002-2006
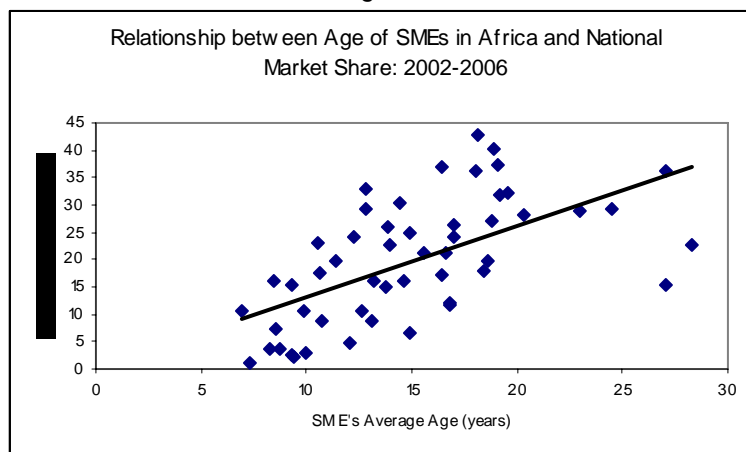
Note: A total of 26 Africa countries are represented in this chart. The national average for small firms and the average for medium firms in each country are displayed above. Thus with 2 observations for each of the 26 African countries, a total of 52 observations on SMEs is represented in this chart. Countries excluded due to missing observations were Egypt, Eritrea, and Morocco.
Source: Author's compilation based on World Bank's Enterprises Survey data, 2002-2006.

The relationship between the age of firms in the SME sector and their national market share is displayed in Figure 5. The positive association between these two variables is evident, with a correlation coefficient of 0.61. Implicit in the relationship between the firm's age and national market share are issues of survival and persistence. Generally, firm's that are able to stand the test of time, tend to be better placed in their marketing strategies, holding all other factors constant.

Table 1 shows the average age of firms is about 13 years for small-sized firms and 18 years for medium-sized firms. The average age for SMEs is below what prevails in large-sized firms in Africa (i.e., between 23 and 25 years). If production experience is a function of time or years of existence and exposure to market tendencies, then SMEs could be said to be less experienced than large-sized firms. In this regard SMEs are, to some extent, more likely to have problems competing in the domestic market than large-sized firms, *ceteris paribus*.

As expected, no less than 80% of SMEs are located in the capital city or large cities with over 100,000 people (Table 1). The tendency for such firms to be located in the capital city tends to be driven by various factors such as physical infrastructure, utility and financial services, markets, transportation, and networking considerations.

Table 1: Selected Indicators of SMEs and Large-Sized Firms in Africa: 2002-2006

Firm-Level Indicators	Small-sized Firms		Medium-sized Firms		Large-sized Firms		All Firms	
	Low income Africa	Middle income Africa	Low income Africa	Middle income Africa	Low income Africa	Middle income Africa	Low income Africa	Middle income Africa
Firm Characteristics								
Firm's age (years)	13.4	13.4	17.9	17.8	22.5	24.7	16.1	16.9
Located in capital or large city (%)	81.7	79.9	85.3	86.2	82.2	81.3	83.1	82.1
Located in medium size city (%)	8.9	19.8	6.7	13.7	7.1	18.7	8.2	18.4
Located in small city (%)	9.4	0.3	8.0	0.1	10.7	0.0	8.3	0.1
Local market share (%)	26.8	25.4	34.0	30.1	45.7	37.7	29.3	27.0
National market share (%)	14.6	15.7	24.9	20.9	38.8	33.1	21.8	18.5
Capacity utilization & Investment								
Capacity utilization (%)	61.3	64.7	64.4	66.7	69.2	72.0	60.7	51.5
Spending on machinery & buildings (% of sales)	9.1	11.3	13.8	6.6	13.5	8.3	10.7	8.8
Employment Issues								
Employment growth over the last 3 years (%)	13.7	19.3	18.8	21.8	15.9	16.7	16.3	19.7
Skilled production workers (% workforce)	36.7	40.9	35.4	37.2	32.1	38.2	34.4	29.5
Unskilled production workers (% workforce)	32.3	31.5	35.5	37.7	40.2	37.1	32.5	27.0
Non-production workers (% workforce)	17.7	14.6	18.5	15.3	19.8	13.9	16.8	9.3
Female share of skilled production workers (%)	11.6	16.9	16.1	20.5	19.4	27.0	15.7	22.7
Female Share of unskilled production workers (%)	17.3	24.2	19.5	26.8	25.0	27.3	20.2	26.9
Female share of non-production workers (%)	30.9	40.6	29.7	43.0	28.5	37.2	28.3	28.7
Human Capital Development								
Formal training incidence (%)	20.0	22.6	37.6	33.2	59.6	59.9	31.6	27.0
Permanent skilled workers receiving training (%)	13.9	25.2	15.8	22.3	20.0	32.1	14.1	17.7

Note: Low income Africa is made up of 22 countries, while middle income Africa is made up of 7 countries.[6] The sum of skilled production workers, unskilled production workers and non-production workers do not add up to 100%. The residual is made up of the share of professionals and management.
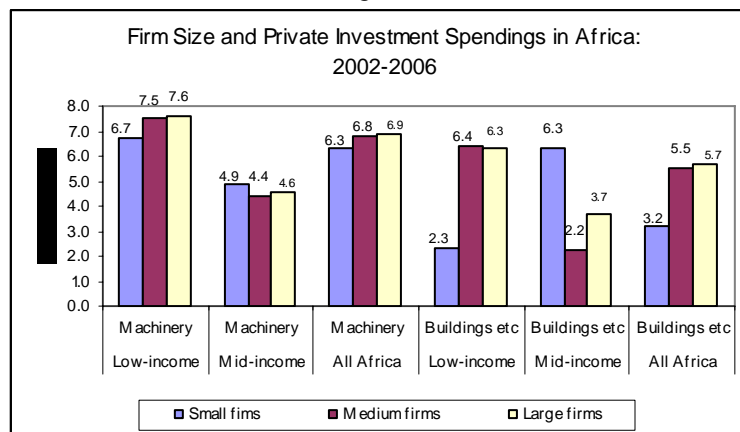Source: Author's compilation based on World Bank's Enterprises Survey data, 2002-2006.

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[6] The list of countries included are Angola, Benin, Burkina Faso, Burundi, Cameroon, Cape Verde, Congo Democratic Republic, Ethiopia, Eritrea, Guinea Bissau, Kenya, Lesotho, Madagascar, Malawi, Mali, Mauritania, Mauritius, Niger, Senegal, Tanzania, Uganda, Zambia, Swaziland, Morocco, Namibia, Egypt, Algeria, Botswana, and South Africa.

Firm sizes tend to be correlated with capacity utilization. Small-sized firms have the least capacity utilization rates, followed by medium-sized firms. Capacity utilization in SMEs is relatively lower in low-income Africa than in middle-income Africa. On average, capacity utilization in low-income African countries is 61% for small firms and 64% for medium firms. For middle-income African countries, these rates are 65% for small firms and 67% for medium firms. While excess capacity can be seen as a reflection of inefficiency, it could also be directly related to demand patterns and growth performance of the macro economy. Cyclical patterns as reflected in business cycles could mar the ability to realize full utilization of installed plant and equipment.

In terms of categories of workers, between 32% and 36% of employees in SMEs in low income African countries are unskilled production workers. The SME sector is seen to be playing a role in the human development of workers. About one-fifth of small-sized firms and over one-third of medium-sized firms (compared to over one-half of large-sized firms) in Africa offer formal training to workers. This has labour productivity implications.

A relatively large share of investments by SMEs is towards the acquisition of machinery and equipment as opposed to buildings, land, and improvements in leasehold. This situation is more pronounced among small-sized firms than medium-sized firms in low income countries in Africa, as shown in Figure 6. Among low-income countries in Africa investments in machinery and equipment appears to be correlated with the size of establishments. The ratio of such investment to total sales of firms rises from 6.7% to 7.5% and then to 7.6% as firm size increases from small, to medium and then to large-size respectively, as shown in Figure 6. Among middle income countries in Africa, small-sized firms registered machinery and equipment investment ratios of 4.9% compared to 4.6% for large-sized firms. Tanzania recorded the highest average machinery investment ratio of about 21% for small-sized firms, while Ethiopia had the lowest ratio of about 1%. In the case of small-sized firms in middle income countries, Swaziland registered a 7.8% machinery and equipment-to-sales ratio, while Egypt's share was about 1%. For medium-sized firms in low income African countries, Mauritania, Ethiopia and Tanzania had over 10% machinery investment ratios, while Eritrea, Malawi and Kenya had less than 4%.

Figure 6

Note: Low income Africa is made up of 22 countries, while middle income Africa is made up of 5 countries.
Source: Author's compilation based on World Bank's Enterprises Survey data, 2002-2006.

Table 2: Employment Growth in SMEs in Africa, by Firm Size and Income Status

Firm Size	Country Income Status	Employment Growth Rates for SMEs in Last 3 Years: 2002-06			
		Less than 1%	**1% - 4.9%**	**5% - 9.9%**	**10% or higher**
Small (1-19 employees)	Low-income	Mauritius [-7.6] [b] Kenya [-5.3]	Cameroon [3.6] [c]	Cape Verde [5.1] [b] Uganda [7.4] [d]	Benin [28.9] [c] Burkina Faso [22.6] [b] Ethiopia [19.9] [c] Lesotho [12.8] [c] Malawi [20.9] [c] Mali [26.6] [c] Senegal [17.8] [c] Madagascar [30.6] [c] Zambia [22.4] [d]
Small (1-19 employees)	Middle-income	Morocco [-2.0] [c]			Egypt [12.8] [d] **South Africa** [17.7] [d] **Namibia** [25.9] [b] Swaziland [28.2] [b] Botswana [33.4] [c]
Medium (20-99 employees)	Low-income		Cameroon [3.6] [b] Tanzania [2.7] [b]	Cape Verde [9.9] [b] Kenya [9.1]	Benin [20.7] [b] Burkina Faso [14.9] [b] Ethiopia [51.1] [b] Lesotho [29.0] [b] Malawi [15.7] [b] Mali [19.0] [b] Senegal [38.9] [b] Madagascar [13.0] [b] Zambia [11.0] [c] **Mauritius** [23.3] [b]
Medium (20-99 employees)	Middle- income			Morocco [7.9] [b]	Egypt [12.1] [c] **South Africa** [11.8] [c] Namibia [25.2] [b] Swaziland [30.1] [c] Botswana [34.8] [b]

Notes:
(i) The numbers in square parentheses represent the growth rates for SMEs in specific countries.
(ii) The superscripts give an indication of average domestic inputs usage by SMEs: the letter 'a' shows domestic inputs usage of less than 25%; 'b' represents domestic inputs usage of between 25% and 49%; 'c' represents domestic input usage of between 50% and 74%; and 'd' stands for 75% or higher
(iii) Countries in 'bold' show those countries with SME capacity utilization of 75% or higher. With the exception of small-sized firms in Ethiopia which registered an aggregate average capacity utilization rate of between 25% and 49%, SMEs in other countries tend to have average capacity utilization rates of between 50% and 74%.

Source: Author's compilation based on World Bank's Enterprises Survey data

On average, the SMEs have been experiencing positive employment growth rates in recent times. Table 2 shows that most of the country-specific firms experienced employment growth rates of 10% or higher in the last three years. Based on the available data, Mauritius, Kenya and Morocco were the only countries with negative employment growth rates for small-sized firms. On average,

medium-sized firms in low income and middle-income African countries recorded positive growth rates (See Table 2). Generally employment growth in small-sized firms over the last 3 years was 14% for small firms and 19% for medium firms in low-income Africa. In the case of middle-income Africa these growth rates were 19% and 22% respectively (See Table 1). The growth in employment rates in the SME sector in Africa could be the result of the general improvement in macroeconomic fundamentals since the turn of the century. As noted by the World Bank (2006, p.1), inflation rates in sub-Saharan Africa have been low, exchange rate distortions have been mostly eliminated, and fiscal deficits have been dropping. Against the backdrop of improvements in macroeconomic fundamentals, what has been the effect of private investment on growth in Africa? This issue is addressed in the next section.

5. Results from Empirical Estimates

Our approach in this section is first of all to show the effects of private investment on per capita income growth in Africa. This is followed by a presentation of results on investment effects of structural transformation in Africa. These two sets of results provide a general context for the analysis of SMEs growth outcomes on the continent based on evidence from Kenya, Tanzania, Uganda, Senegal, Mali and South Africa.

5.1 Private Investment, Growth and Structural Transformation: Macro Level Results

Table 3 reports the results from regressing per capita income growth rate on private investment and public investment ratios, while controlling for other factors such as initial per capita income and the degree of civil liberty in African countries. The results show that private investment has a positive and statistically significant effect of the growth rate of per capita income in Africa. The growth effect is relatively larger among "low-income countries" in Africa than it is for all-African countries, irrespective of income status. An interesting result is the realization that the effects of an additional private investment on growth in the recent decade (i.e., 1995-2004) is higher than what occurred during the entire 15 year period under consideration (i.e., 1990-2004). Linking these results to the investment trend displayed in Figure 1, we find that the modest increase in the investment ratio in low-income African countries from about 10% in the last 15 years to about 11% in the last decade has been associated with an increased positive effect on growth rate in Africa. While the private investment variable effect on growth is robust in both the OLS and 2SLS specifications, the public investment variable is largely statistically insignificant.

The significance of private investment on structural transformation indicators (i.e., manufacturing–to-agriculture output, and industry-to-agricultural output) is seen in Table 4. An increase in the private-to-public investment ratio increases the manufacturing and industry output ratios. Comparing the "all-African countries" results with the case of "low-income countries in Africa" it appears the effects of private investment on these structural transformation measures are relatively lower in low-income African countries. These differences in impact could be the results of institutional, macroeconomic and other socio-economic bottlenecks which often tend to be more pronounced in low-income countries in Africa.

Table 3: Effects of Private Investment on Per Capita Income Growth in Africa

Dependent variable: Per capita income growth rate in Africa

Estimation techniques: OLS and 2SLS

	All African Countries, irrespective of income status				Low Income Countries in Africa			
	1990-2004		1995-2004		1990-2004		1995-2004	
	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS
	Coef	Coef	Coef	Coef	Coef	Coef	Coef	Coef
Private investment ratio	0.156*	0.116***	0.168*	0.156*	0.194*	0.151**	0.207*	0.198*
	(2.69)	(1.95)	(3.12)	(2.80)	(2.94)	(2.20)	(3.53)	(3.27)
Public investment ratio	0.110***	0.108***	0.045	0.044	0.0781	0.078	-0.008	-0.008
	(1.94)	(1.91)	(0.76)	(0.75)	(1.19)	(1.19)	(-0.13)	(-0.13)
F-statistic	4.94	4.43	3.45	3.14	4.85	4.21	4.61	4.25
R squared	0.222	0.219	0.208	0.207	0.229	0.226	0.265	0.265
No. of observations	*129*	*129*	*86*	*86*	*105*	*105*	*70*	*70*

Notes: *, ** and *** indicate statistical significance at the 1%, 5% and 10% levels respectively. The above models were estimated with an intercept and also controlled for initial per capita income, civil liberty, and time periods under consideration. In the 2SLS specification, private investment ratio has been instrumented using lagged private investment, public investment ratio, civility liberty, initial per capita income and time dummy variables as instruments.

Table 4: Effects of Private Investment Ratio on Structural Transformation Indicators in Africa

Estimation technique: OLS

Dependent variable: Manufacturing-to-Agric Value Added

	All African Countries, irrespective of income status				Low Income Countries in Africa			
	1990-2004		1995-2004		1990-2004		1995-2004	
	Coef	t-value	Coef	t-value	Coef	t-value	Coef	t-value
Private-to-Public Investment Ratio	0.147*	4.16	0.155*	3.73	0.088**	2.50	0.093**	2.22
Civil liberty	-0.375*	-4.45	-0.476*	-4.33	-0.288*	-3.20	-0.366*	-3.08
Constant	2.029*	5.52	2.400*	5.18	1.629*	4.25	1.902*	3.91
R-square		0.219		0.264		0.121		0.15
No. of observations		*119*		*80*		*99*		*66*

Dependent variable: Industry-to-Agric Value Added

	All African Countries, irrespective of income status				Low Income Countries in Africa			
	1990-2004		1995-2004		1990-2004		1995-2004	
	Coef	t-value	Coef	t-value	Coef	t-value	Coef	t-value
Private-to-Public Investment Ratio	0.229**	2.23	0.227***	1.92	0.144***	1.70	0.138	1.41
Civil liberty	-1.007*	-4.13	-1.118*	-3.59	-0.433**	-2.03	-0.496***	-1.80
Constant	5.932*	5.53	6.377*	4.81	2.931*	3.18	3.175*	2.78
R-square		0.141	0.152			0.054		0.058
No. of observations		126	85			103		69

Notes: *, ** and *** indicate statistical significance at the 1%, 5% and 10% levels respectively. Civil liberties/rights as used here follow the definition by Freedom House (2003) which includes the freedom to develop opinions, institutions and personal autonomy without interference from the state. The ratings are from 1 through 7, with severe liberty restrictions occurring as we approach 7. A country rating of 7 represents virtually no freedom.

5.2 SME Growth and Investment: Firm-Level Results

On average small-sized firms in Africa tend to employ about 10 workers, while medium sized firms employed 49 workers. For the set of countries illustrated in Table 5, middle-income South Africa recorded an above average result, with small-sized firms employing 13 workers, while medium-sized firm employed 53 workers. Among the low income countries in our sample, Kenya recorded the highest average number of workers in the SME group, while Mali had the lowest. Compared to large-sized firms, the employment shares of SMEs in total manufacturing sector employment are relatively low. The small-sized firm share of manufacturing employment ranges from 0.4% in South Africa to 10.7% in Mali. In the case of medium-sized firms, the employment share is from 6.6% in South Africa to 25.9% in Senegal. Thus it appears that put together SME's share of manufacturing sector employment is about 17% in Kenya, 24% in Tanzania, 25% in Uganda, 32% in Senegal, 36% in Mali and 7% in South Africa. Excluding South Africa, SME's share of manufacturing sector employment is 23%.

Table 5: Employment Size and Ratios in Africa, by Firm Type, 2001

	Employment size in manufacturing sector: Average number of workers			Share in Total Manufacturing Sector Employment: (%)		
	Small firms	Medium firms	Large firms	Small-firms	Medium-firms	Large-firms
Kenya	11	49	395	2.5	14.2	83.3
Tanzania	10	48	416	5.4	18.1	76.5
Uganda	9	40	529	6.4	18.7	74.9
Senegal	10	46	342	5.9	25.9	68.2
Mali	9	42	337	10.7	25.2	64.2
South Africa	13	53	654	0.4	6.6	93.0
All Countries	*10*	*49*	*568*	*1.6*	*9.7*	*88.7*

Note: Employment ratios are expressed as shares of average employment in large-sized firms.
Source: Author's calculations based on World Bank's Enterprises Survey data, 2003

We must point out these employment shares are sensitive to the cutoff used to identify SMEs. In our study the SME threshold is standardized at employment levels of not more than 99 workers. If this threshold is increased, then the share of SMEs in total employment is likely to increase. For example in a recent study on SMEs, growth and poverty across the world, Beck *et al* (2003), used a threshold of 250 employees as the cutoff for the definition of SME. Based on this cutoff, they estimated the SME sector's share of employment to be about 21% in Burundi, 20% in Cameroon, 19% in Cote d'Ivoire, 52% in Ghana, 33% in Kenya, 17% in Nigeria, 32% in Tanzania, 37% in Zambia, and 15% in Zimbabwe. We also acknowledge that each country has its own official definition of the SME sector and using these definitions would generate different employment shares. Notwithstanding these threshold issues, an important question is that, what factors explain the employment growth rates of SMEs? The answer to this question involves estimating a firm-level growth model. The results from this exercise are presented in Table 6.

There is a positive association between the incidence of investment in new machinery and the growth of firms in Africa. This effect appears to be relatively larger in the models on SMEs (i.e., Models 3 and 4) than in the pooled situation for all manufacturing sector firms (i.e., Models 1 and 2)

Table 6: Employment Growth Rate Determinants, 2001

Dependent variable: Employment growth rate in 2001

Estimation technique: OLS

| | All Manufacturing Firms | | | | SMEs in Manufacturing Sector | | | |
| | All countries Model 1 | | South Africa excluded Model 2 | | All countries Model 3 | | South Africa excluded Model 4 | |
	Coef	t-value	Coef	t-value	Coef	t-value	Coef	t-value
Firm characteristics and investment								
Firm's age	-0.114**	-2.04	-0.232**	-2.18	-0.214**	-2.36	-0.288**	-2.20
Log(initial size)	-8.230*	-7.53	-10.046*	-5.75	-9.406*	-6.17	-10.453*	-5.09
New machinery investment in 2000	5.145**	2.18	8.706**	2.13	5.472***	1.81	9.055***	1.95
Small and medium-sized firm	-15.182*	-4.72	-17.436*	-3.11				
Business practices								
Business association member	4.566**	2.00	7.236***	1.85	4.339	1.49	7.087	1.63
E-mail-oriented	9.767*	3.27	9.701**	2.44	11.109*	3.05	10.500**	2.30
Country of operation								
Kenya	-5.128	-1.62	4.527	0.80	-5.145	-1.15	4.550	0.68
Mali	0.381	0.08	7.666	1.21	-0.693	-0.11	8.092	1.14
Senegal	5.471	1.42	14.285*	2.61	6.640	1.34	16.823*	2.67
Tanzania	-8.358**	-2.19	-1.229	-0.22	-8.687***	-1.72	-0.525	-0.08
Uganda	-7.567***	-1.88			-9.165***	-1.80		
Industry								
Garments	6.657	1.65	7.807	1.33	9.498	1.62	10.565	1.44
Food	7.701***	1.74	0.911	0.07	3.527	0.51	1.158	0.07
Constant	37.360*	5.87	34.856*	3.81	26.811*	4.52	18.113*	2.91
F statistic	7.37		5.08		5.97		4.71	
R-squared	0.078		0.087		0.085		0.091	
No. of manufacturing firms	*1153*		*654*		*785*		*532*	

Note: *, ** and *** indicate statistical significance at the 1%, 5% and 10% levels respectively. The incidence of "new machinery investment in 2000" is a dummy variable with a value of 1 if the specific firm invested in new machinery in the year 2000; and zero if no new machinery investment occurred in 2000.

The results show that both the age and initial size variables are significant and are inversely related to the growth rate of the firm. This finding is consistent with Jovanovic's learning theory and is in line with previous studies such as Sleuwaegen and Goedhuys, 2002; Ramachandran, 1999; and Liedholm *et al,* 1994).[7] The coefficient for the SME dummy variable bears a negative sign which suggests that in relation to large-sized firms, SMEs reduce the average growth rates of manufacturing sector firms. In an earlier study by Collier and Gunning (1999), on why Africa has grown slowly, the authors noted that Africa manufacturing has been in a low-productivity trap. This trap was attributed to the fact that firms were oriented to small domestic markets and as a result were neither able to realize economies of scale nor compete significantly. Arguably, this observation is likely to be very true particularly of the SME sector in light of its relatively small sizes and market orientation.

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[7] According to Jovanovic (1982) there is a tendency for firms to learn about their efficiency once they get established in their industry. The process of competition in the industry results in less efficient firms leaving the industry. The remaining firms are able to adjust their scale of operation. Consequently, young and small firms "which are in their initial process of uncovering their own efficiency level, grow faster and their growth rates are more volatile (Sleuwaegen *et al.*, 2004, p. 119).

Table 7: Determinants of Net Employment, 2001

Dependent variable: Incidence of net employment in 2001 : (dummy variable: 1=positive net employment; 0 = otherwise)

Estimation technique: Probit

	All Manufacturing Firms				SMEs in Manufacturing Sector			
	All countries		South Africa excluded		All countries		South Africa excluded	
	Model 1		Model 2		Model 3		Model 4	
	Marginal Effect	z-value	Marginal Effect	z-value	Marginal Effect	z-value	Marginal Effect	z-value
Firm characteristics and investment								
Firm's age	-0.002*	-2.97	-0.001	-1.17	-0.002**	-2.10	-0.001	-0.90
New machinery investment in 2000	0.101*	3.00	0.159*	3.45	0.097**	2.49	0.142*	2.82
Small-sized firm	-0.197*	-4.30	-0.167*	-2.91	-0.096**	-2.31	-0.105**	-2.19
Medium-sized firm	-0.099*	-2.74	-0.056	-1.05				
Business practices								
Business association member	0.002	0.08	0.006	0.14	0.017	0.44	0.036	0.73
E-mail-oriented	0.121*	2.74	0.099**	2.18	0.161*	3.25	0.127**	2.49
Country of operation								
Kenya	0.196*	4.61	0.169*	2.74	0.200*	3.52	0.173**	2.45
Mali	0.092	1.38	0.093	1.36	0.132***	1.75	0.110	1.46
Senegal	0.128**	2.47	0.134**	2.27	0.154**	2.55	0.140**	2.12
Tanzania	0.554*	11.28	0.545*	9.91	0.624*	10.30	0.612*	9.43
Uganda	-0.013	-0.21			0.014	0.20		
Industry								
Garments	0.114**	2.03	0.137**	2.21	0.135***	1.72	0.118	1.48
Food	0.068	1.12	0.095	0.70	0.136	1.66	-0.026	-0.15
LR chi2	319.5		275.9		274.9		244.0	
Pseudo R-squared	0.166		0.250		0.213		0.278	
No. of manufacturing firms	1391		808		934		635	
Observed probability	*0.508*		*0.569*		*0.478*		*0.531*	
Predicted probability	*0.537*		*0.618*		*0.516*		*0.589*	

Note: *, ** and *** indicate statistical significance at the 1%, 5% and 10% levels respectively.

Our estimated models in Table 7 predict a net employment probability of 51.6% (South Africa inclusive) and 58.9% (excluding South Africa) for SMEs in the manufacturing sector. The chi-square measure suggests that the regressions have a reasonable fit. The results suggest that investing firms, relative to non-investing firms, are more likely to be recording net additions to employment. In relation to medium sized firms, small-sized firms are associated with a reduction in the probability of registering net additions to employment (Models 3 and 4). SMEs currently using faster communication methods in interacting with their clients and suppliers, (in this context the use of e-mail) tend to be associated with an increased probability of having net additions to employment. Such firms are likely to minimize delays in dealing with suppliers and clients and therefore less loss of potential revenues from sales. Growth in sales is more likely to induce more employment than otherwise. Of what significance is the investment climate?

5.3 Investment Climate Constraints: SME Sector Perceptions

The World Bank (2005, p.2) notes that: *"A good investment climate drives growth by encouraging investment and higher productivity. Investment underpins economic growth by bringing more inputs to the production process"*. The survey instrument designed and administered to private sector firms made provision for firms to rank a set of investment climate variables. The ranks for those firms which indicated that the respective variables posed some obstacles to their investment activities were from 1 to 4 (with one representing minor obstacle and 4, very severe obstacle). In Table 8, we have reported the mean values for these ranks. For SMEs in Tanzania and Uganda, the two most important constraints identified were the cost of financing (e.g., interest rates) and tax rates. In Kenya the top constraints were cost of financing and corruption. In Senegal and Mali, the SMEs identified cost of financing and access to financing (such as collateral requirements) as the major constraints. In South Africa, the major constraints confronting SMEs were labour relations and workers production capabilities as reflected in their skills and educational levels.

In the pooled situation for all SMEs in our sample it appears that the cost of financing is the most significant limitation on their ability to invest. Apart from the cost of financing, the next most highly rated constraints for all SMEs were tax rates, access to financing, corruption, macroeconomic instability and tax administration. The least ranked investment constraints facing SMEs were telecommunications and business licensing and operating permits. In the case of large-sized firms in Africa, however, it appears the major obstacle to investment is macroeconomic instability. Investment is a forward looking activity and if the envisaged risks associated with it are high (such as occurs in a highly unstable macroeconomic environment) then the willingness to invest is likely to wane.

Table 8: Investment Climate Constraints to SMEs in the Manufacturing Sector in Africa, 2003

Investment Climate Constraints to Manufacturing Sector SMEs in Africa

Ranked Mean	Specific Countries						All 6 Countries	
	Kenya	Tanzania	Uganda	Senegal	Mali	South Africa	All SMEs	Large-sized firms
Telecommunications	2.4	1.9	1.4	1.5	1.7	1.7	1.9	1.9
Electricity	2.6	2.9	2.6	2.3	1.9	1.7	2.4	2.4
Transportation	2.3	2.2	2.0	2.3	1.9	1.8	2.1	2.2
Tax rates	3.1	3.1	2.8	2.7	2.6	2.1	2.7	2.4
Tax administration	2.8	2.8	2.4	2.5	2.5	1.9	2.5	2.3
Customs & Trade Regulations	2.5	2.4	2.4	2.5	2.3	2.0	2.3	2.3
Workers skills and education	2.2	2.3	2.4	2.1	2.3	2.5	2.3	2.5
Business licensing & operating permits	2.0	2.2	1.6	1.7	2.3	1.7	1.9	1.7
Access to financing (e.g. collateral)	2.8	2.9	2.7	3.0	3.0	2.2	2.7	2.2
Cost of financing (e.g. interest rates)	3.2	3.0	2.9	3.2	3.0	2.1	2.9	2.4
Economic & regulatory policy uncertainty	2.8	2.3	2.2	2.4	2.5	2.0	2.4	2.3
Macro instability	2.7	2.6	2.7	2.3	2.1	2.2	2.5	2.6
Corruption	3.2	2.9	2.7	2.6	2.8	2.1	2.7	2.5
Crime, theft and disorder	3.0	2.2	2.2	2.0	2.0	2.2	2.4	2.4

Ranked as follows: 1=minor obstacle; 2=moderate obstacle; 3=major obstacle; 4=very severe obstacle
Source: Author's calculations based on World Bank's Enterprises Survey data, 2003

By far, internal funds or retained earnings are the major source of finance for new investments by SMEs in Africa, as shown in Table 9. As a source of new investment finance, the contribution of internal funds is about 51% in Kenya, 58% in South Africa, 69% in Senegal, 74% in Tanzania, 76% in Uganda, and 81% in Mali. The availability of retained earnings for investment depends on realized profits, which in turn depends on firm revenues, costs of production and applicable tax rates. If firms have nothing to plough back, new investments are likely to be stifled and this could halt the growth process of SMEs. It has been argued by various authors such as Whittington that "higher profits provide both the means (greater availability of finance from retained profits or from the capital market) and the incentive (a high rate of return) for new investment" (Whittington, 1980, pp.335-336). Even though the empirical evidence on the linkage between profitability and firm growth is somewhat ambiguous (Hardwick and Adams, 2002), it could be argued that given the limited contribution of financial resources from local commercial banks to investment financing (17.3%), profitability matters for SMEs growth in Africa.

Table 9: Sources of Finance for New Investments in SMEs in Africa, 2002

Sources of Finance for new investments

	Country-Specific Small and Medium-Sized Enterprises in the Manufacturing Sector						All 6 Countries	
	Kenya	Tanzania	Uganda	Senegal	Mali	South Africa	All SMEs	Large firms
Internal funds or retained earnings	50.8	74.4	76.3	68.9	81.1	58.1	64.7	57.8
Local commercial banks	33.7	13.4	10.6	18.7	13.6	14.2	17.3	18.8
Foreign owned commercial banks	1.8	1.4	0.0	0.0	0.3	0.9	0.8	1.6
Leasing arrangement	0.0	0.0	2.9	0.5	0.0	18.7	7.4	9.5
Special development financing	0.7	0.9	1.0	1.2	1.7	0.4	0.8	1.1
Trade credit	4.6	1.2	0.0	1.6	0.0	0.9	1.4	1.3
Credit cards	0.2	0.0	0.0	0.0	0.0	0.1	0.1	0.3
Equity, sale of stock	0.6	2.1	1.2	0.0	0.0	0.2	0.5	0.5
Family, friends	1.9	3.2	1.6	4.4	3.3	1.0	2.2	0.6
Informal sources (e.g., money lender)	0.0	2.2	1.1	0.0	0.0	0.0	0.4	0.8
Other finance	5.7	1.2	5.4	4.7	0.0	5.6	4.5	7.6
Total	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*
No. of manufacturing firms	106	81	83	110	60	265	705	368

Source: Author's calculations based on World Bank's Enterprises Survey data, 2003

6. Conclusion

This study examined the role of private investment in the growth and transformation process in Africa. An integral aspect of the study was an examination of the role of SMEs. The results from the trend analysis show that private investment rates have increased modestly in recent times. At the same time per capita income growth has moved from negative to positive. The empirical growth and structural transformation models suggest private investment exerts a positive and statistically significance impact on both outcomes.

The importance of SMEs in Africa's growth and transformation process emerges from various angles. In terms of frequency, SMEs form about 82% of private sector firms in low-income Africa, and 79% of firms in middle-income African countries. Though the average employment levels are relatively low compared to what prevails in large-sized firms the SME sector's share of total

manufacturing sector employment is not negligible. Depending on specific country considerations, the SME sector's share of total employment could be anything from about 20% to 36%. These shares of employment imply that growth in the SME sector could help enlarge the share of industry in national output, employment and income. Given the fact that about one-third of employees in the SME sector are unskilled production workers, growth of SMEs could have favourable impacts on the distribution of income in the respective countries.

SMEs could also be seen as building blocks in the growth and structural transformation process in Africa. Our study suggests a positive impact of investment on two measures of firm performance (i.e., employment growth rate in SMEs and the incidence of net employment). This seems to suggest that investing firms are growing firms. Though our study did not test for feedback effects of growth on the decisions to invest, it suffices to mention that the two variables go together. Consequently, policy measures tailored towards encouraging start-up SMEs and growth of existing SMEs could as well be policies working for national growth and development.

In the light of the finding that almost all SMEs are located in urban areas a major policy challenge is how to encourage rural-based SMEs. This is a big challenge for Africa given the fact that infrastructure issues are even a source of concern for firms located in urban areas. The perception of SMEs on investment climate constraints needs to be integrated into policy strategies being mapped out to encourage private sector performance. The need to diversify production is important, and the role of SMEs in this regard, no matter how small it is, cannot be overlooked.

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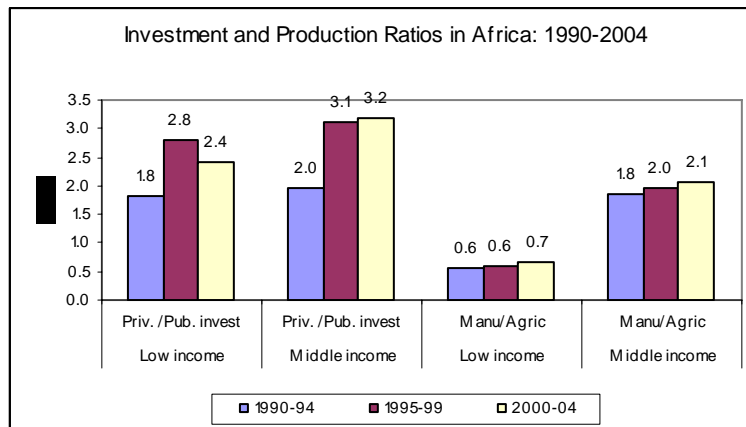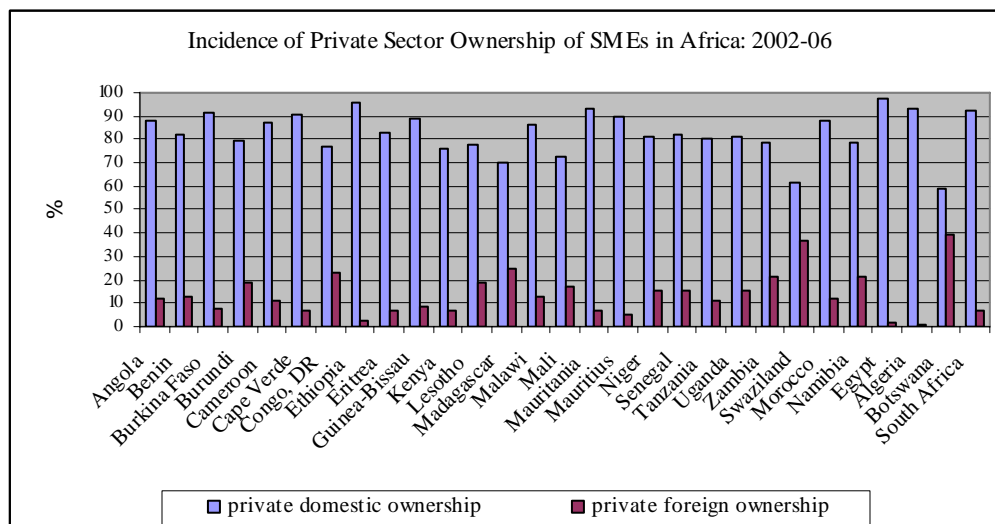
APPENDIX

Figure A1

SMEs in the Private Formal Sector and Female Ownership in Africa: 2002-06
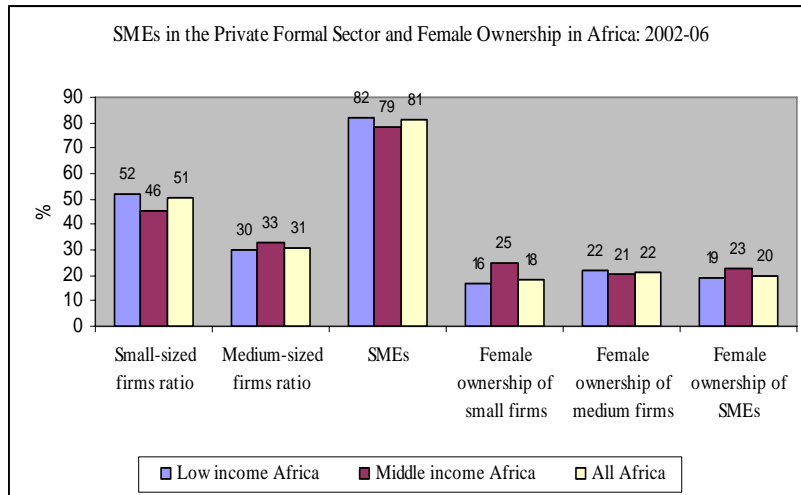
Source: Author's calculations based on the World Bank's Enterprise Survey data, 2002-2006.

Figure A2

Investment and Production Ratios in Africa: 1990-2004

Note: Low income Africa is made up of 36 African countries. Middle income Africa is made up of 7 countries.
Source: Author's calculations based on data from World Bank's Africa Development Indicators, 2006.

Figure A3

Incidence of Private Sector Ownership of SMEs in Africa: 2002-06

Source: Author's calculations based on the World Bank's Enterprise Survey data, 2002-2006.

Table A1

Manufacturing Sector SMEs Indicating Selected Investment Climate Variables Posed No Problems to their Operations

Percentage of Firms	Specific Countries						All 6 Countries	
	Kenya	Tanzania	Uganda	Senegal	Mali	South Africa	All SMEs	Large-sized firms
Telecommunications	16.9	42.6	56.1	78.9	56.8	73.6	55.4	52.6
Electricity	15.1	8.8	15.4	28.5	35.1	66.9	34.0	37.9
Transportation	20.9	31.1	27.6	29.3	40.5	60.9	38.8	38.6
Tax rates	10.5	5.4	8.9	18.7	18.9	38.8	20.2	25.1
Tax administration	15.1	9.5	17.1	9.8	27.0	51.2	26.2	39.8
Customs & Trade Regulations	24.4	33.8	22.8	21.1	43.2	55.5	36.6	29.4
Workers skills and education	26.2	35.8	33.3	31.7	47.3	32.1	32.9	22.7
Business licensing & operating permits	36.6	29.1	51.2	51.2	73.0	77.6	55.2	55.7
Access to financing (e.g. collateral)	20.3	23.6	16.3	11.4	13.5	54.2	29.4	50.7
Cost of financing (e.g. interest rates)	6.4	18.9	9.8	8.1	13.5	44.5	21.7	32.7
Economic & regulatory policy uncertainty	13.4	21.6	26.0	22.8	43.2	49.8	31.5	30.1
Macro instability	9.9	13.5	13.0	26.0	40.5	37.1	24.1	18.0
Corruption	7.0	14.2	29.3	26.0	14.9	47.8	27.2	32.9
Crime, theft and disorder	5.8	25.0	34.1	42.3	41.9	26.8	26.8	18.7
No. of manufacturing firms	*172*	*148*	*123*	*123*	*74*	*299*	*939*	*422*

Source: Author's calculations based on the World Bank's Enterprise Survey data, 2003.