

Climate for Job Creation*

Africa Region

Employment Issues – Regional Stocktaking Review

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1. Introduction

In this chapter we review possible explanations for the low investment in Africa's private sector. Our point of departure is that exporting out of Africa is the most promising route to growth and development in the continent. While it is not entirely understood why exporting countries grow faster, the empirical link between exports and growth seems indisputable. Africa represents a tiny fraction of world trade, which means that the potential for expansion is significant. Experience from Ghana and Uganda suggests that export recovery can generate substantial gains relatively quickly. The export potential in the industrial sector, particularly manufacturing, is high, and investment in this sector raises the demand for unskilled labor and will therefore have the most direct impact on poverty. For these reasons, we therefore devote a lot of attention to this sector in what follows.

African countries are highly heterogeneous with respect to many of the characteristics that we will be looking at. Rather than attempting to cover all of Africa, we have selected three middle income countries -- Botswana, Mauritius and South Africa -- and nine low income countries -- Cameroon, Ghana, Kenya, Madagascar, Mozambique, Nigeria, Tanzania, Uganda and Zambia. Among these, there are spectacular success stories as well as mediocre economic performers; there are relatively large as well as very small economies; there are some countries that have experienced outdrawn political turmoil and others that have seen long-term political stability; there are countries where there is ongoing rapid economic and political change and others that are firmly in the status quo category. Because of such large variation in several dimensions, we believe that a lot can be learnt from a close study of this group of countries. Furthermore, firm-level data are available for about half of these countries, and we shall draw extensively on existing firm-level research. The reason is simple: the firm is the obvious economic agent to study in order to shed light on the climate for job creation. Only in this way can we learn about the constraints to investment and identify key obstacles to the creation of more jobs.

We begin our analysis by taking a bird's eye view on the structure of the industrial sector and one of its key sub-sectors, namely manufacturing, in our twelve African countries of study. This is done in Section 2. At a general level, the failure of the manufacturing sector to grow has been widely attributed to the poor investment climate in Africa. African enterprises are faced by high transaction costs, some of which are induced by inappropriate government policies and

some inherent in doing business in economies where the quality of the infrastructure services is often poor. Since manufacturers are intensive users of these services, they have been particularly disadvantaged by this problem (Collier, 2000). In Section 3 we discuss two aspects of the investment climate that are often considered major constraints for growth and job creation: weaknesses in the regulatory systems, and poor infrastructure. In Section 4 we explain why African firms need to become more export oriented if more jobs are to be created, and assess the reasons why firms have remained inward oriented despite recent trade reforms. In Section 5 we discuss the constraints to investment in fixed capital, based on firm-level research. In Section 6 we outline what we believe should be the policy priorities for reversing Africa's modest economic performance.

2. Industry and Manufacturing in Africa: A Bird's Eye View

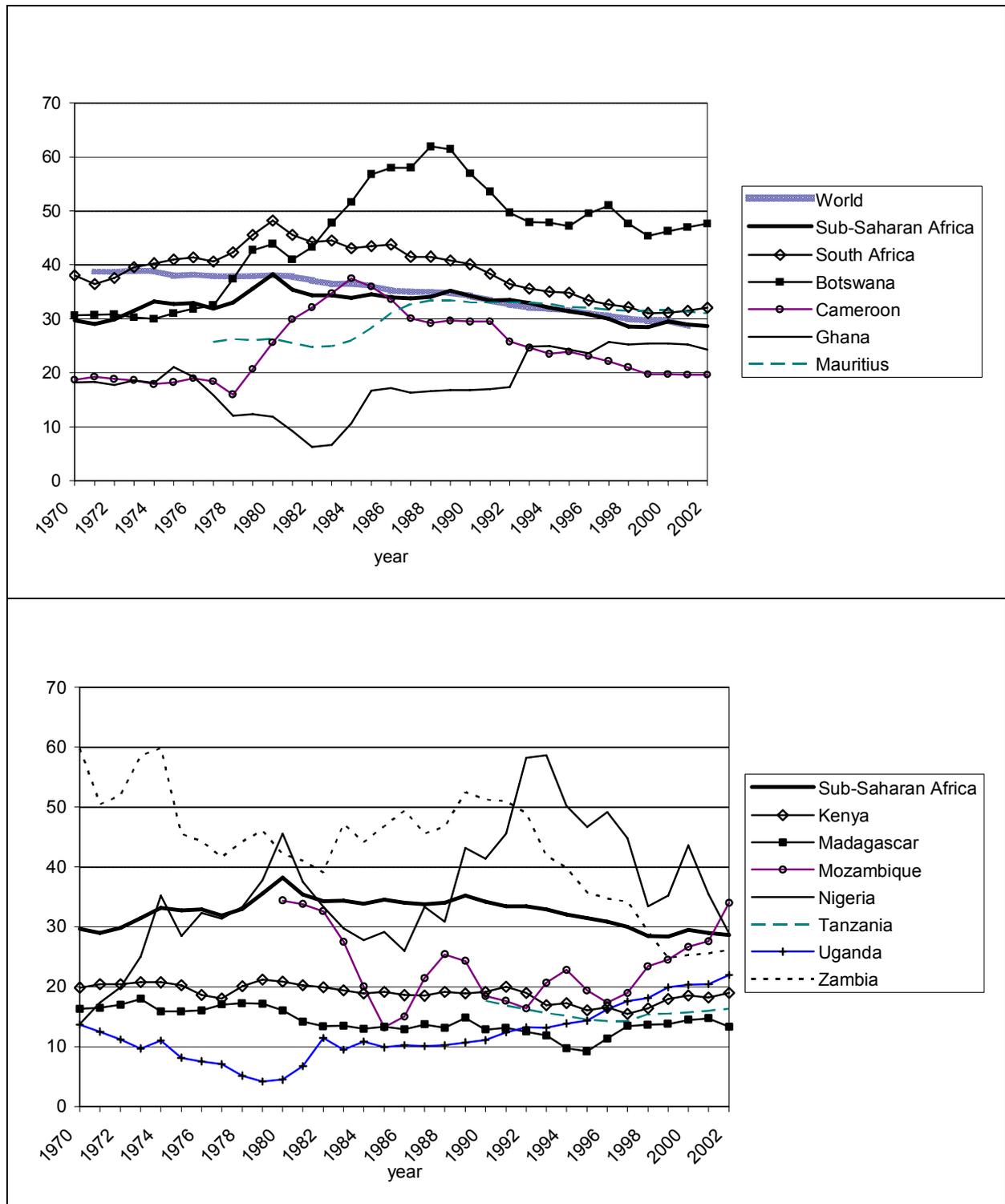
It has long been recognized that the industrial sector in developing countries has the potential to act as an engine of modernization, a creator of skilled jobs, and a generator of positive spillover-effects (Tybout, 2000). The historic evidence for this is compelling: the growth in industry output has been a key element in the successful transformation of most economies that have seen sustained rises in their per capita incomes, the most recent example being that of the NICs and their success in exporting manufactures. The ability of the industrial sector to grow dictates the rate at which new jobs can be created in this sector, and we therefore start our exploration of the data by documenting a few stylized facts about the industrial performance in Africa. Figure 1 shows trends in the share of industry value-added in GDP in twelve African countries, as well as the averages for Sub-Saharan Africa (SSA) and the world.¹ Several points are worth noting. Firstly, there is substantial heterogeneity in the industry intensity across these countries. At 48 percent, Botswana had by far the highest share of industry in total value-added by 2002 – almost 20 percentage points higher than the SSA average and the world average. Most of this is driven by mining. The opposite case is constituted by Madagascar, where industry's share in total value added was 13 percent in 2002. Among the intermediate cases, industry's share is relatively high in South Africa and Mauritius and relatively low in Tanzania and Kenya. On balance, industry intensity appears to be higher among those countries with relatively high incomes, an issue which we shall return to below. Secondly, the share is very volatile in some countries and

¹ Industry includes mining, manufacturing, construction, electricity, water, and gas.

strikingly stable in others. Countries relying heavily on the processing of natural resources (oil and gas in the case of Nigeria; copper in the case of Zambia) are clearly exposed to world market fluctuations in the prices and demand for such products. Thirdly, while in most cases there appears to be a negative trend over the last decade, there are exceptions. Ghana and Uganda have both seen long-term increases in the share of industrial in total value-added, and in the 1990s one can spot what looks like turning points for Mozambique and Madagascar.

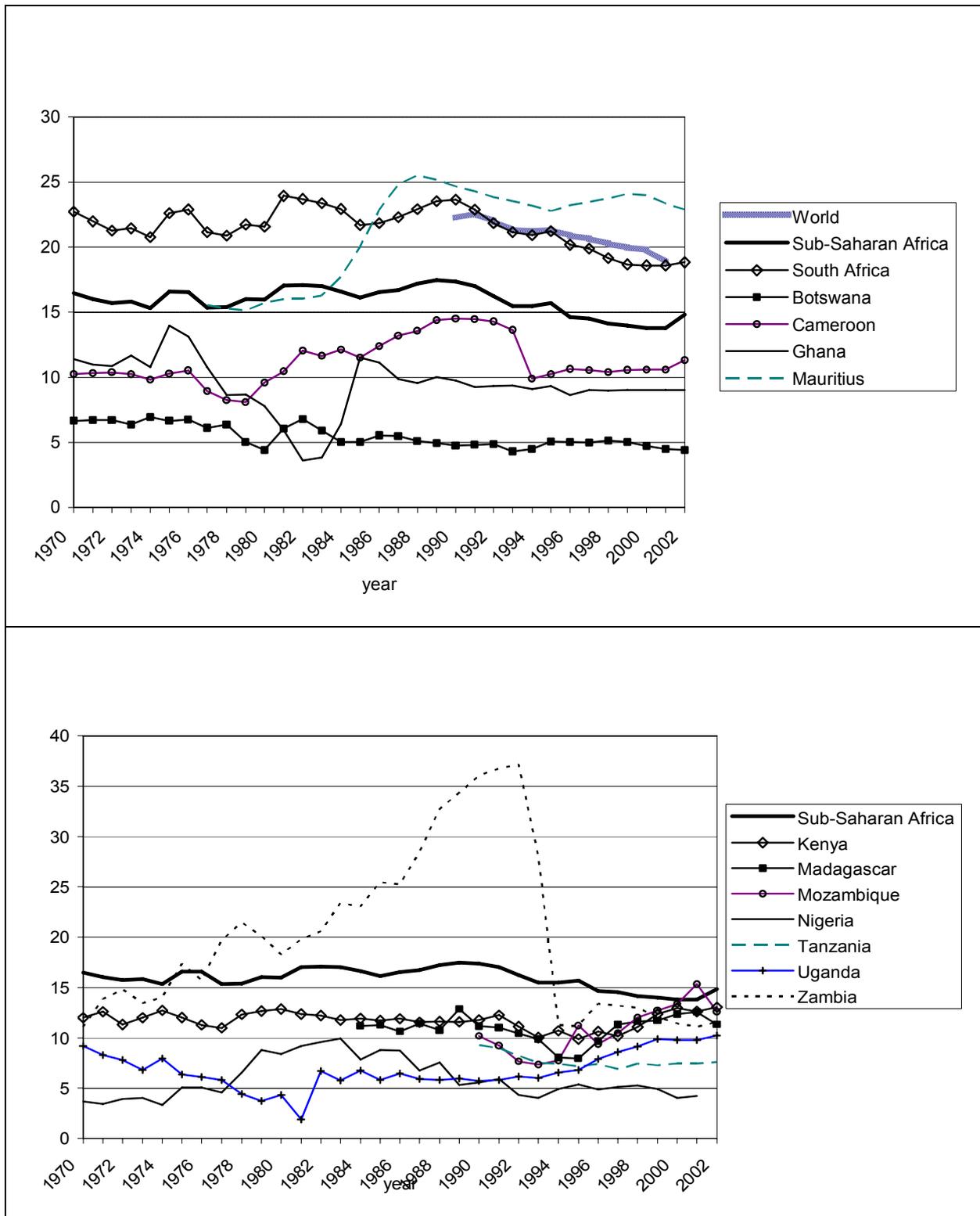
Figure 2 shows trends in the share of manufacturing value-added in GDP. Manufacturing is an area where African performance has been particularly poor over the last decades. One example of this is that, as shown in the graph, in 2001 the average for SSA was roughly 5 percentage points lower than the world average. Nevertheless, there is a lot of heterogeneity across the countries in the relative size of manufacturing (although less than for industry). The highest share of manufacturing in total value-added is recorded by Mauritius, 23 percent, which is higher than the world average. In contrast, in Nigeria the share of manufacturing in total value-added is a mere 4 percent. Strikingly, the manufacturing share in Botswana is only 5 percent, confirming that Botswana's industrial sector is made up mainly by non-manufacturing. The average manufacturing shares are low in most of the countries considered here, however there are a few cases where the trend appears to be positive. For instance, in Uganda the manufacturing share rose from 6 percent in 1990 to 10 percent in 2002, and in Madagascar and Mozambique the manufacturing share grew from 8 percent in 1994 to more than 11 percent in 2002. For both Nigeria and South Africa, however, the share of manufacturing in total value-added appears to be in a persistent state of decline. Of course, these countries carry a lot of weight in the calculation of the SSA average and so it is not surprising to see a negative trend in the latter as well. For a limited set of countries aggregate data on private investment is available. Figure 3 shows the trends in the share of private investment in GDP for Mauritius, Kenya and Madagascar. The picture is largely consistent with the trends documented for the industry and manufacturing shares: in Madagascar, private investment has increased steadily during the 1990s, albeit from a low level; Mauritius has seen a long-term rise in investment since the early 1980s (and following a slump in the 1970s); and in Kenya there is no obvious trend whatsoever.

Figure 1 - The Share of Industry Value-Added in GDP



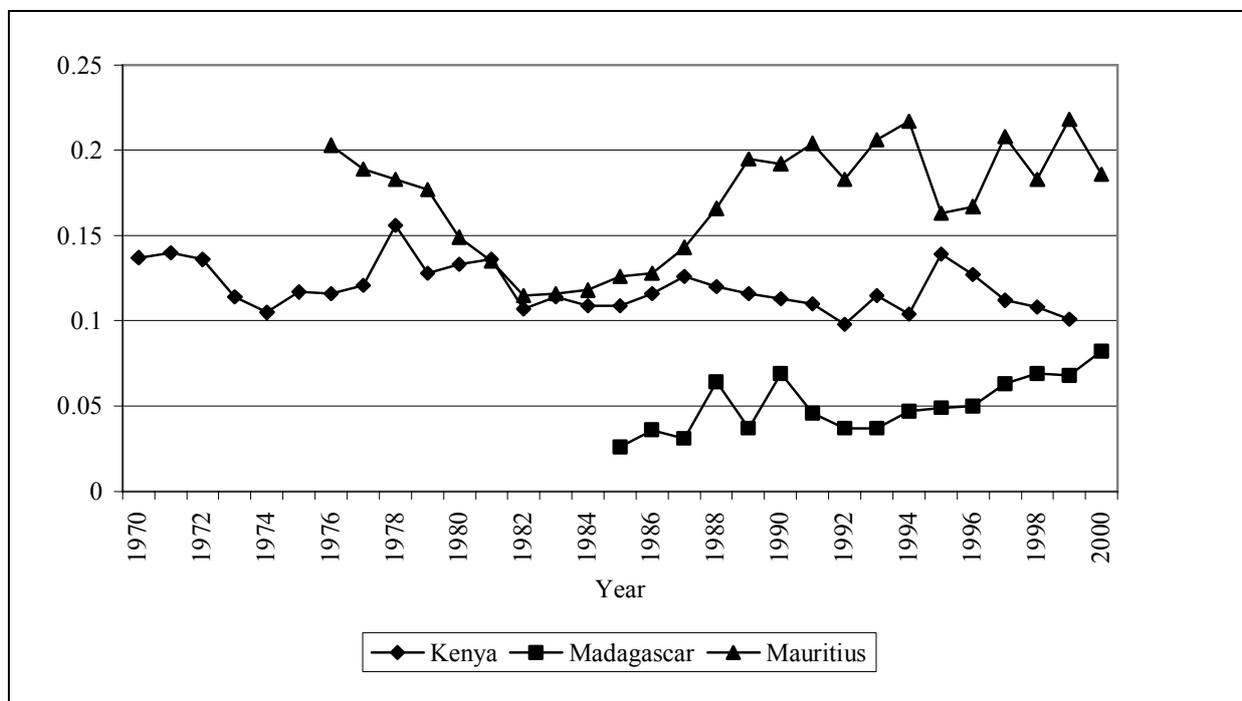
Source: World Development Indicators, 2004.

Figure 2 - The Share of Manufacturing Value-Added in GDP



Source: World Development Indicators, 2004.

Figure 3. The Share of Private Investment in GDP in Three African Countries

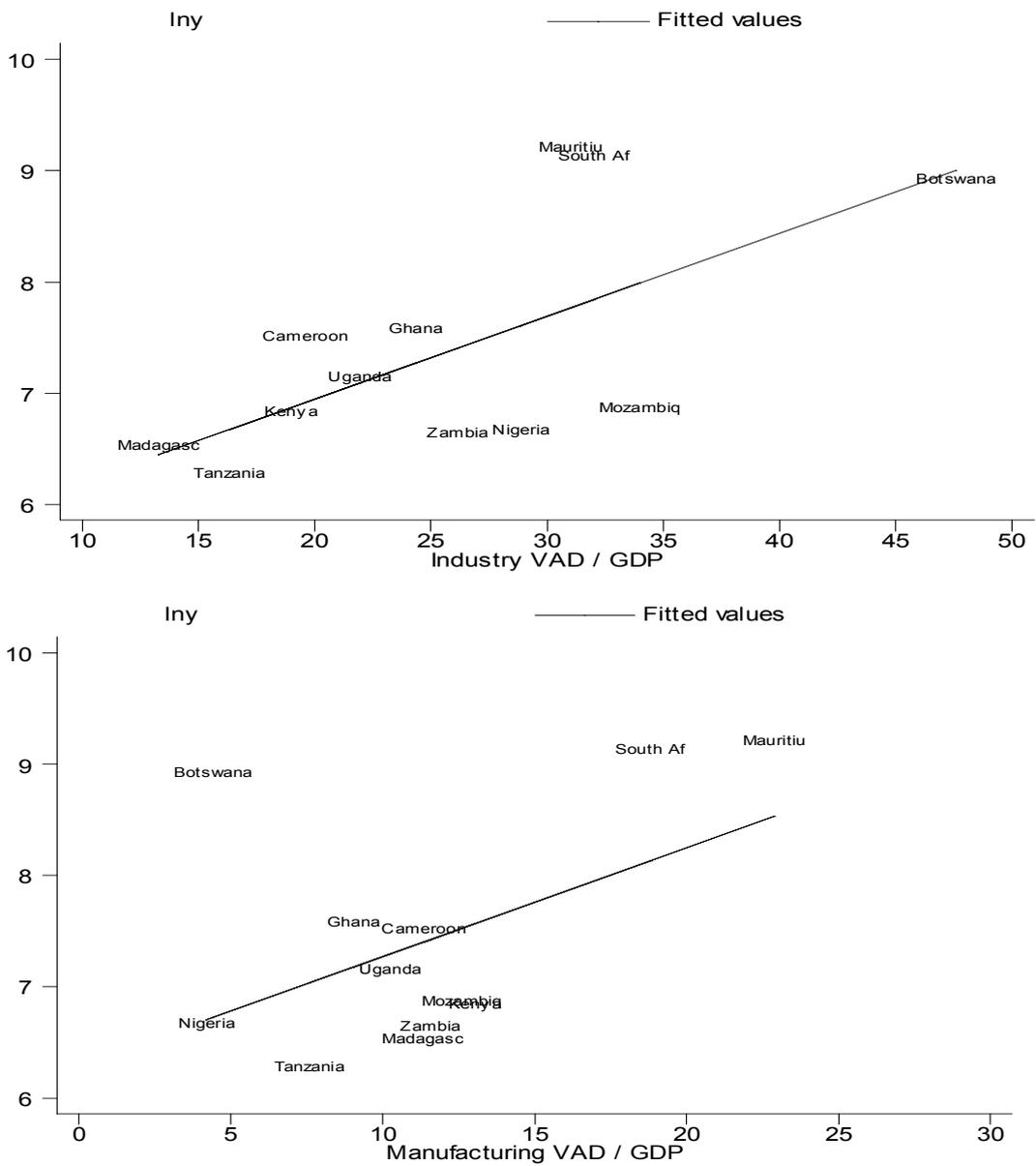


We have seen that there are large differences across countries in the relative size of industry and manufacturing. Does it matter what these relative sizes are? In Figure 4 we show simple scatter-plots of per capita income (in PPP adjusted USD and on a logarithmic scale) and the industry and manufacturing shares for our twelve countries. For both industry and manufacturing, there is a positive correlation between the relative size and per capita income. Of course the sample we are using is very small and the graph can clearly not be interpreted as indicating a causal effect. Nevertheless, it is striking that a non-negligible share of the variation in per capita income across this set of countries is systematically related to the variation across the countries in these shares: the R-squared in the industry regression is 0.43, while in the manufacturing regression it is 0.24 (and dropping Botswana from the sample in the latter case increases the R-squared to 0.69). We do not attempt to answer here why this pattern exists in the data. What we do infer is that for this group of countries having a relatively high per capita income goes hand in hand with having a relatively large industrial and/or manufacturing base, on average.

If, as the previous graphs suggest and many commentators have argued for a long time, a strong industrial sector is good for economic performance - how can this sector expand and become more successful? In recent years interest has grown rapidly among development economists and other analysts in documenting the role of the investment climate in this context (e.g. Batra, Kaufmann and Stone, 2003). This research involves assessing how conducive are key external factors – e.g. the quality of institutions, the amount of red tape, or the quality of the infrastructure – to firm performance. The basic link to job creation is that a poor investment climate erodes the returns on investment, and so firms will choose not to carry out investments that otherwise would have generated new jobs. Constructing and improving data on the quality of the investment climate is a very active area of research. At the time of writing, the Foreign Investment Advisory Service (FIAS) lists 21 sources of data related to the investment climate, most of which are publicly available free of charge.² Using these sources one can obtain a vast amount of data, e.g. on business regulations and their enforcement, key characteristics of the conditions for private investment and enterprise growth, governance, economic freedom, country credit ratings, indices of competitiveness, globalization, human development, environmental sustainability, civil rights, and much more. Attempting to provide a full account of what all these measures imply for the investment climate in Africa is beyond the scope of our inquiry. Instead, we focus on the regulatory environment and the quality of the infrastructure, in our view the two areas most directly linked to the ability of firms to create jobs and perform well in general.

² http://www.fias.net/investment_climate.html

Figure 4 - Income and Industry and Manufacturing Intensity in Twelve African Countries



Note: The fitted values in the top graph are based on a regression where the estimated slope coefficient is 0.07 and the t-statistic is 2.75. The R-squared in this regression is 0.43. For the bottom graph, the estimated slope coefficient is 0.10 and the t-statistic 1.80. The R-squared is 0.24.

3. The Regulatory Environment and Infrastructure in Africa

Table 1 summarizes three indicators of the state of the regulatory environment, measuring the protection of investors, the enforcement of contract and the access to credit. These data are taken from the World Bank and IFC *Doing Business Database*. The first variable, protecting investors, focuses on disclosure of ownership and financial information to current and potential investors. The index varies between 0 and 7, with higher values indicating more disclosure.³ The average score for SSA is 2.1, and disclosure appears to be particularly low in Cameroon, Madagascar, Tanzania and Zambia, and reasonably high in Nigeria and South Africa. Perhaps surprisingly, the latter two countries have higher scores than the OECD average.

The second variable measures the time (in days) it takes to resolve a business dispute in court in these economies, counted from the moment the plaintiff files the lawsuit in court until settlement or payment (see Djankov et al., 2003, for details). For this indicator there are substantial differences across the countries. In Botswana, conflict resolution is estimated to take 154 days, while in Nigeria it would take 730 days. The average for SSA is almost twice as high as for the OECD. An indication of how this affects business in Africa is provided by Bigsten et al. (2000), who report firm-level evidence on how conflicts are resolved in the manufacturing sector. These authors show that African firms largely steer clear of the courts as a way of resolving business disputes. Instead, firms tend to rely predominantly on negotiation as a way forward. Only large firms file lawsuits, and only after negotiations have failed.

The third variable summarized in Table 1 refers to the cost of creating the collateral to secure formal loans, expressed as a percentage of per capita income (so that the higher is this percentage, the less accessible is formal credit, on average). This indicator is based on research of collateral and insolvency laws and responses to a survey on secured transactions laws, and costs include taxes, notary fees and duties associated with creating the security right and registering it in the collateral registry, where such a registry operates. The SSA average is eight times as high as in the OECD, indicating that access to formal credit is indeed associated with high costs. Again, there is significant variation across the African countries, and again Botswana leads the way, followed by South Africa. Creating collateral is extremely expensive (relative to

³ The methodology is developed in “Corporate Theft,” a forthcoming research project by Simeon Djankov, Rafael La Porta, Florencio Lopez-de-Silanes, and Andrei Shleifer.

per capita income) in Cameroon. In Section 4 we look in detail at various aspects of the participation of firms in the formal credit market, in a sub-set of the countries considered here.

How are these indicators of the regulatory environment related to the relative size of the industrial sector, and manufacturing? We have already seen that Botswana scores highly on all three indicators considered above, and so one could expect there to be a positive correlation between the relative size of the industrial sector and the regulatory environment indicators. Figure 5 shows simple scatter-plots of how the three indicators are correlated with the share of industrial in total value-added (the graphs to the left in the figure) and the share of manufacturing in total value-added (the graphs to the right). The picture is quite mixed. For the cost of collateral the picture is least ambiguous: for both industry and manufacturing there is a negative correlation between relative sector size and the cost of collateral. This relationship is statistically significant at the five percent level for industry (and at the ten percent level for manufacturing if Botswana is removed from the sample). There is a clear and significant positive correlation between the variable measuring the protection of investors and the relative size of industry. For manufacturing, however, the correlation is negative, but far from significant. Finally, there is no clear relation between the contract enforcement variable and relative sector size.

Of course, there are numerous reasons why one should interpret the results just discussed with a large dose of caution. The samples are extremely small. We have focused on just a few indicators. We have used only two measures of relative size of the industry and manufacturing. A more comprehensive analysis may therefore result in different results. Nevertheless, there is some evidence from these graphs that the indicator variables are correlated with industry and manufacturing intensity. There is also evidence that these indicators are correlated with per capita income (not reported).⁴ Our conclusion is similar in kind to what we said about the association between industry and per capita income: for this group of countries having good scores on the indicators goes hand in hand with having a relatively large industrial and/or manufacturing base, on average.

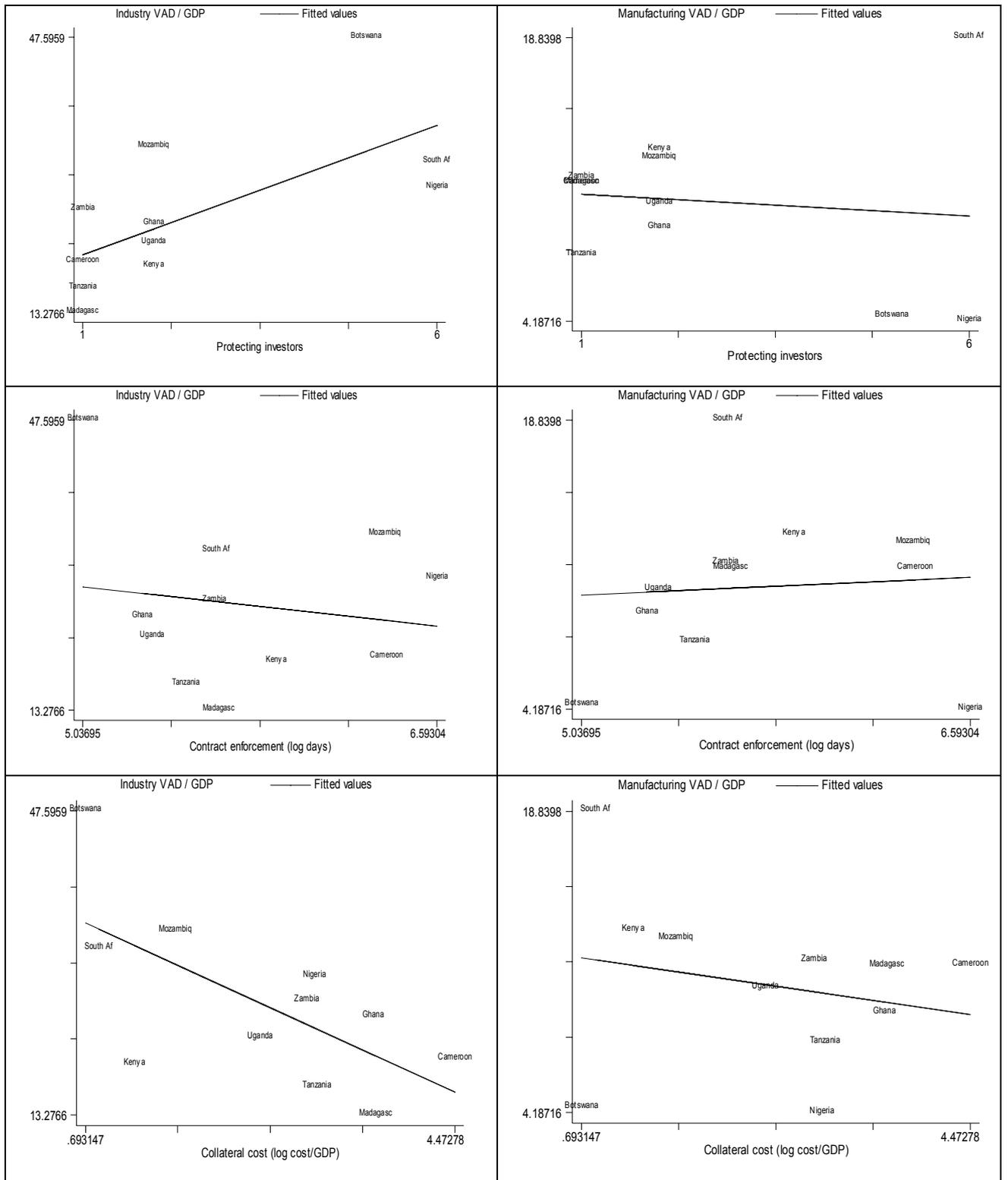
⁴ Per capita income is significantly higher in countries with good scores on investor protection and in countries where creating collateral is relatively cheap.

Table 1. Regulatory Environment Indicators

	Protecting Investors: Disclosure index	Enforcement of Contracts: Time to resolve dispute	Getting Credit: Cost to Create Collateral (% of income per capita)
Botswana	5	154	2.0
Cameroon	1	585	87.6
Ghana	2	200	37.9
Kenya	2	360	3.3
Madagascar	1	280	39.0
Mozambique	2	580	5.0
Nigeria	6	730	20.7
South Africa	6	277	2.3
Tanzania	1	242	21.3
Uganda	2	209	11.9
Zambia	1	274	19.2
Sub-Saharan Africa	2.1	434	41.8
OECD: High income	5.6	229	5.2

Infrastructure includes a whole range of services important for business, such as transportation, telecommunications, waste disposal, and the supply of electricity and water. Despite a high share of public expenditure to GDP in most African countries, Africa's infrastructure is poor (Collier and Gunning, 1999). Transport costs are considerably higher in Africa than in other regions, electricity costs are higher than elsewhere and water supplies are unreliable. Table 2 provides summary statistics on the state of infrastructure in our twelve African countries of study, and, for reference, average values for SSA and OECD. Columns (1)-(6) show data on economic losses due to power failures, telephone, roads and rail networks and water access. These figures have been calculated from the World Development Indicators and we refer to these as objective measures of infrastructure. Column (7) shows data on firms' perceptions about how serious a problem is deficient infrastructure. These figures, taken from Batra et al. (2003), derive originally from the World Business Environment Survey (WBES), and we refer to these as subjective measures of infrastructure.

Figure 5. Industry, Manufacturing and Investment Climate Indicators



According to the objective measures, infrastructure is best in the middle income countries and Zambia and worst in Tanzania, Madagascar and Uganda. Comparing Mauritius and Uganda is illustrative of the substantial variation in the state of the infrastructure across the countries: Mauritius has 205 telephone mainlines per 1,000 people, Uganda has 3; Mauritius has 1,578 km of paved roads per million people, Uganda has 80; 96 per cent of the roads in Mauritius are paved, 7 per cent in Uganda; improved water is accessible to the entire population in Mauritius, and to half of Uganda's population. While the main pattern is such that the relatively rich countries tend to have relatively good infrastructure, there are exceptions. Zambia, for instance, has better infrastructure than Uganda even though Zambia is a good deal poorer. There are huge gaps between Africa's infrastructure and that of the OECD countries: for instance, average telephone mainlines per capita differs by a factor of 40, and average paved roads per capita by a factor of 30.

The subjective measure of infrastructure (column 7) indicates that infrastructure is much better in the middle income countries than in the low income countries. If we abstract from Botswana and South Africa, however, the subjective data appear to be largely incompatible with the objective data. For example, according to the subjective data Nigeria appears to have the worst infrastructure (98 per cent of the Nigerian firms rank infrastructure as a moderate or major obstacle) while Uganda is second best after Ghana. In contrast, if we look at the size of paved roads network, five of the seven low income countries for which we have complete data have worse infrastructure than Nigeria and Uganda ranks last. Similarly, based on the telephones measure Kenya is better than all the low income countries, yet according to the subjective data on infrastructure Kenya is ranked higher than Nigeria only. Thus different measures tell different stories, and it is not obvious which measure to rely on. We return to this issue in Section 6.

Table 2. Indicators of Africa's Infrastructure

	(1) Electric power trans- mission and distri- bution losses (% of output)	(2) Telephone mainlines (per 1,000 people)	(3) Paved roads, km per million people	(4) Roads, paved (% of total roads)	(5) Improved water source (% of popu- lation with access)	(6) Rail lines, km per million people	(7) Per- centage of firms ranking infra- structure as a moderate or major obstacle
Botswana		66	3119	54	95		29
Cameroon	20	6	301	13	58	67	91
Ghana	23	7	556	27	73	49	58
Kenya	20	10	270	12	57	88	94
Madagascar		3	403	12	47		85
Mauritius		205	1578	96	100		
Mozambique	24	5	339	19	57		
Nigeria	37	4	452	28	62	28	98
South Africa	8	116	1709	20	86	515	14
Tanzania	15	4	117	4	68	81	88
Uganda		3	80	7	52	11	70
Zambia	2	8	3139	62	64	129	76
OECD	6	569	12279	88		375	22
SSA	11	13	369	14	58		66

Note: The figures in columns (1)-(6) are mean values over the 1996-2000 period, calculated from the World Development Indicators 2004. The figures in column (7) are taken from Table A2.1 in Batra, Kaufmann and Stone (2003).

Poor infrastructure is likely to be a major factor in explaining the poor economic performance of most African countries over the last decades.⁵ Industrial firms are particularly intensive users of infrastructure services, and so this sector may have been particularly hampered by this problem. Transport infrastructure, for instance, affects production in several ways. Good roads result in lower decision costs of firms when they undertake investments, and to lower costs of their day-to-day operations such as the purchasing of input and the sale of output. A well functioning

⁵ It appears to be clear from cross-country macro regressions that exists a strong correlation between the availability of certain infrastructures - telecommunications power, paved roads, and access to safe water - and per capita income (Easterly and Rebelo, 1993; Easterly and Levine, 1995; Canning, 1998). Microeconomic evidence from four Asian countries - Bangladesh, China, India and Pakistan – provided in Dollar, Hallward-Driemeier and Mengistae (2003) find that total factor productivity is correlated with various IC indicators measuring the time or monetary cost of different bottlenecks.

transport network also has significant indirect or external effects, e.g. by increasing the scope for trade and by improving the functioning of markets. A good transport infrastructure may also have positive indirect effects by making the firm better connected with the rest of the economy, e.g. facilitating access to credit or new technology. It might make it easier for small firms to survive as well as stimulate the entry of new firms.

Macroeconomic evidence that infrastructure matters for economic performance in Africa is provided by Oshikoya (1994), who finds a positive effect of public-sector investment in infrastructure on aggregate private investment in seven countries. Latreille and Varoudakis (1997) argue that the lack of public investment in infrastructure account for a large part of the declining trend in total factor productivity in the manufacturing industry in Senegal. Lee and Anas (1992) study Nigerian manufacturing firms and their results suggest that unreliable and inaccessible public infrastructure raise unit costs. One reason is that many firms spend own resources directly on buying infrastructure services or providing it on their own. Others, particularly the smaller ones, cannot afford to invest in own provision, but have to suffer higher costs of production due to the frequent interruptions in supply. It seems plausible to assume that the heavy incidence of failures in small firms prevent them from expanding and generating new jobs.

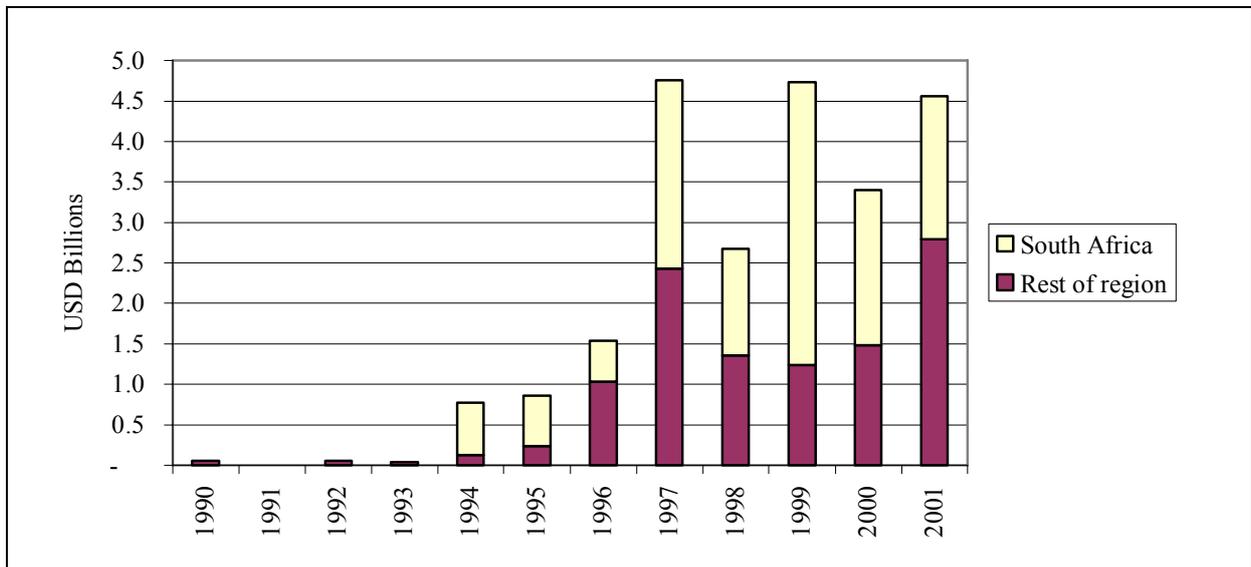
Delivering infrastructure services in Africa has traditionally been the responsibility of public sector monopolists. In the last decade, however, this policy has been partially reversed and the private sector has become increasingly involved. Similar developments have taken place in other developing regions (see World Bank, 2003). In 2001 the private sector invested about USD 4.56 billion in infrastructure in SSA. This corresponds to about USD 8 on a per capita basis, so this form of investment is still relatively modest. Nevertheless, the time trend is clearly positive, as shown in Figure 6. Figure 7 shows a breakdown of cumulative investment during the 1990-2001 period. It is clear that private infrastructure investment has been concentrated to telecommunications, a sector where incumbent state-owned operators have been divested and mobile licenses have been issued to private operators who now supply a rapidly growing market (see Box 1).

We know from survey data that African firms tend to rate infrastructure as one of the most significant constraints (Batra et al., 2003, Figure 2.1), but we do not know much about *how* poor infrastructure hampers performance. Little is known, for instance, about the effects on labor

market outcomes. One question is whether infrastructure acts as a constraint primarily on the input side (labor supply) or the output side. Two dimensions of infrastructure relevant for the input side are the availability of information (as this affects the cost of the worker-firm matching process), and the quality of local roads and public transport (as this affects the worker's cost of getting from his home to the workplace). Recent data on manufacturing workers in Kenya, collected by the World Bank as part of the RPED program, shed some light on these issues. The data show clearly that the informal network is important for people searching for jobs: 74 per cent of the employees in the sample had first heard about the job from family members or friends, rather than from public placement offices announcements or through school.⁶ This suggests a role for institutions as a complementary source of information about vacancies. The median time it takes to reach the workplace is 30 minutes, and the most common way of getting to work is by foot (37 per cent of the workers interviewed). Workers respond to poor transport by tending to live quite close to the workplace: among the individuals that walk to work, the median distance to the workplace is 2 km. These figures suggest that from the firms' perspective infrastructure seems quite a moderate problem in the input dimension, in the sense that it does not seriously constrain workers from finding work and getting to the workplace. The main problem of poor infrastructure is likely to be in the output dimension. Entrepreneurs respond to deficient infrastructure by focusing on the local market and using inputs supplied locally. In particular, firms' ability to export is likely to suffer from poor infrastructure. We turn to exports next.

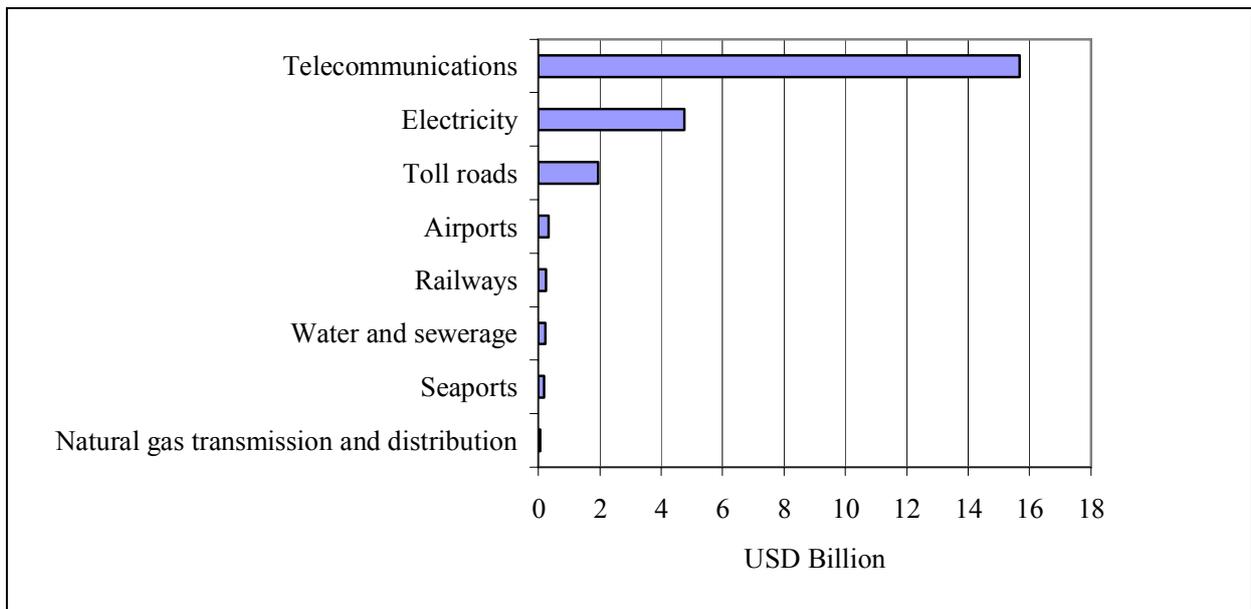
⁶ This abstracts from an "other" category.

Figure 6. Annual Investment in Infrastructure Projects with Private Participation in SSA



Source:

Figure 7. Total Investment in Infrastructure with Private Participation in SSA, 1990-2001



Box 1 - The Mobile Revolution in Africa

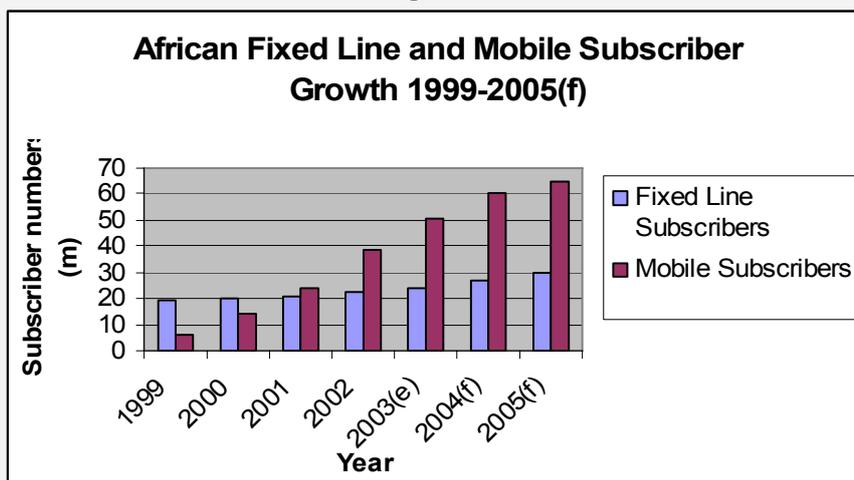
Africa is currently in the midst of a mobile phone revolution with user numbers increasing annually at around 65%, more than twice the global average. According to the International Telecommunications Union, more Africans have begun using phones since the year 2000 than in the whole of the previous century, with the number of mobile phone users now exceeding the number of fixed-line subscribers (Figure 1). Approximately 6% of people in Africa now use mobile phones (equating to over 50m subscribers); more than double the number of fixed-line users.

What has fuelled this rapid growth? While the low starting base of mobile phone users has obviously played a large part in the industry's growth, in many ways the popularity of mobile phones in Africa is a reflection of the poor state of fixed line services across much of the continent. Prolonged underinvestment in fixed line communications over many decades (particularly in rural areas) coupled with rising demand for telecommunications has resulted in frequent access and connection problems. Only 2.8% of Africans are estimated to have access to fixed-line services and Sub-Saharan Africa, which has roughly 10% of the world's population, has only 0.2% of the world's one billion telephone lines. Access is particularly poor in rural areas. In rural parts of Malawi for example, there is just one telephone for every 1,250 people. The substantial cost of providing fixed-line services over such a sparsely populated and large continent has previously discouraged investment in telecommunications. In contrast to fixed line investment, mobile phone networks are much quicker and cheaper to implement.

Beyond the benefits mobile phones are providing for consumers in Africa, the technology is also having an important impact on African business. While mobile phone operators and their sellers have been the obvious beneficiaries in this growth, mobile phone technology has provided benefits across a range of industries in Africa. Mobile banking for example, appears to have great potential given the preference for conducting transactions in Africa in cash and the paucity of credit cards. In Zambia, mobile operator Celtel has recently launched a system allowing users to make payments via SMS (Short Messaging Service).

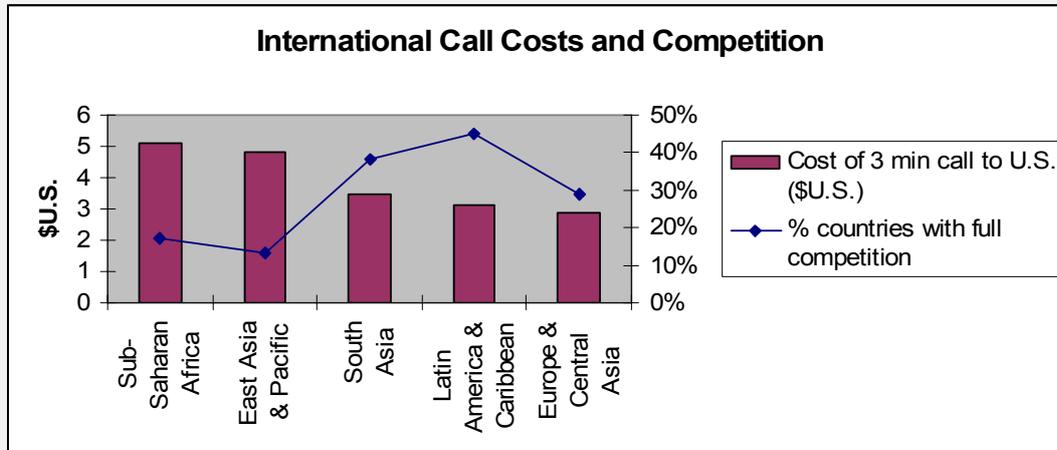
Mobile internet could also provide a boost to business and consumers. While the existing GSM networks are still slow, the deployment of GPRS (General Packet Radio Services) is gathering momentum and the rollout of the first African 3G network in South Africa has already begun, with both technologies offering the promise of much faster download potential. However the high cost for limited bandwidth in Africa is likely to continue to be a constraining factor on demand for these services. Data reported by the International Telecommunication Union show that Africa has by far the highest broadband costs in the world.

Figure 1



Source: International Telecommunications Union

Figure 2



Source: World Bank, 2003: Telecommunications Sector Development in Africa

So far, the growth in mobile technology has done little to solve the problem of the poor quality and high cost of international calls. Exports, tourism and the nascent call center industry in Africa, all depend on international communication and prices in Africa remain high (Figure 2). A recent World Bank study noted that the lack of competition in the international telecommunications segment in Africa appears to be a key driver of the high relative prices.

There are also some more hurdles to overcome in improving the access of Africans to mobile technology. For example, only approximately half of sub-Saharan Africa has mobile coverage, and many African governments have made slow progress in exposing the incumbent telecommunications providers to competition. Using data over the period from 1987 to 2000 on 41 African countries that have adopted cellular telecommunications technologies, Gebreab (2002) finds that competition is important for rapid mobile expansion. Furthermore, despite recent declines in the cost of mobile calls, they still compare unfavorably to fixed-line services (mobile costs range from US\$0.20 to 0.40 per minute). Combined with the high costs of acquiring mobile phones and the fact that over 50% of people in Africa earn less than one dollar a day, expanding usage to the levels seen in developed countries will be difficult.

4. Market Size, Exports and Productivity

We have seen that African firms typically operate in environments with weak regulatory systems and poor infrastructure. A third salient feature of the business environment in Africa is that the domestic markets typically are very small. For example, the value-added produced by the largest economy in SSA, Nigeria, is lower than that of Norway, and the size of the economies close to the SSA median (Botswana, Zambia) is some 40 per cent smaller than that of Luxembourg. Further, among the least developed countries, Engel effects favor basic subsistence needs over sophisticated manufactured goods (Tybout, 2000). For these reasons, African industry must orientate a substantial share of its output towards exporting if this sector is to play a significant role in promoting development, generating new jobs, and reducing poverty in the continent. The fact that most African countries are moderate exporters, especially of manufactures, has already been comprehensively documented in the previous chapter and will not be discussed further here. Instead in this sub-section we discuss two important questions. Firstly, what are the factors that prevent African firms from entering the exports market? The answer to this question will shed light on how policy can be designed to facilitate entry to the international market. Secondly, are there any benefits, other than market enlargement, associated with exporting? In answering this question we focus on the notion that firms may become more productive as a result of contacts with foreign customers and pressure to be internationally competitive. We base our discussion mainly on recent research based on firm-level data from Africa.

One can identify at least two key factors that determine whether a firm will participate in the exports market: the level of the entry barrier, and the cost efficiency of the potential exporter. In their influential paper on the decision to export, Roberts and Tybout (1997) stress that entering the exports market for the first time is likely to be quite costly. For instance, it may be necessary for the exporting firm to set up a marketing department to investigate marketing channels, meet export orders etc. It also seems very likely that the quality of the investment climate has a bearing on the magnitude of entry costs, but we have no rigorous empirical evidence to support this assertion. While entry costs are typically not observed, Roberts and Tybout argue that indirect evidence of costly entry can be obtained by testing for an effect of previous exports status on current status. The idea is that, in the absence of entry costs, firms will switch in and out of the exports market independently of whether they have exported in the past. If there are significant entry costs, however, then firms that have incurred these costs in the

past (and thus will not have to incur them again) will be more likely to export in subsequent periods than firms that have not, simply because exporting is less costly for the insiders than for the outsiders. In their empirical application, Roberts and Tybout find strong evidence that insiders are more likely to export than outsiders, indicating the presence of significant fixed costs.

Bigsten et al. (2004a) carry out a similar analysis based on firm-level RPED data from Ghana, Cameroon, Kenya and Zimbabwe from the early 1990s. Controlling for a number of other factors including firm specific time invariant heterogeneity, they find that past export status has a significant effect on the propensity to export. The magnitude of this effect is large: for the “average” firm that did some exporting in the previous period, the likelihood of exporting in the current period is about 0.57 while the likelihood of exporting for an otherwise identical firm that did not export in the previous period is 0.18. Thus, for a non-exporting firm with the average characteristics, entering the export market raises the probability that this firm will export in the next period from less than one in five to more than one half. This is the effect of entry costs. There are at least two important policy implications. First, if incentives can be created for firms to enter the exports market, they are likely to remain in the exports market for some time. Second, large entry costs imply that there is a set of firms that remain focused on the domestic market even though they are internationally competitive. By reducing or eliminating the entry costs, these firms will get access to a larger market.

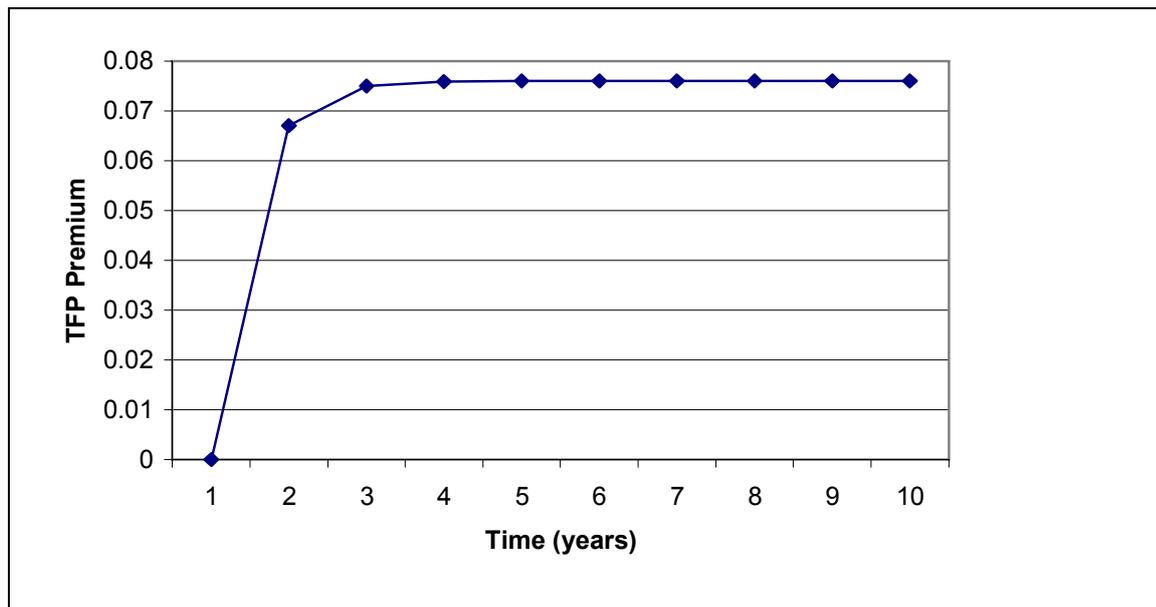
The second factor that determines whether a firm will export is its cost efficiency. Clerides et al. (1998) derive a model exporting is associated with a fixed cost, incurred in every period of exporting. The authors show that, in this model, firms with marginal costs below some threshold choose to export, while firms with marginal costs above the threshold remain focused on the domestic market. Thus, this model predicts that relatively efficient firms will self-select into the export market. A number of studies have tested for self-selection based on data from both developed and developing countries. On balance, these papers present quite strong evidence that efficient firms do indeed self-select into the export market. In Africa, however, the evidence of self-selection effects is relatively weak. Instead, Bigsten et al. (2004a) report results suggesting that causality runs in the other direction, i.e. from exporting to efficiency. We discuss this result next.

The question of whether exporting actually causes efficiency gains has received a lot of attention in the recent literature. From a policy perspective, whether or not firms in developing countries can “learn” from exporting in this way is an important issue. As we have seen, the domestic markets for manufactures are typically very small in developing countries, so if developing countries are to industrialize it will have to be through exports. Under learning-by-exporting the competitiveness gap can be reduced endogenously through increased international trade. As discussed in the previous paragraph, one methodological challenge in testing for learning-by-exporting effects is that causality may run in the other direction, i.e. efficient firms may self-select into the export market. Therefore, efficiency and exports may be correlated even in the absence of learning effects. Clerides et al. (1998) propose an econometric framework that can be used to tease out the relative importance of learning effects and self-selection effects. Using this framework, Bigsten et al. (2004a) find relatively strong evidence of learning effects, in the sense that participating in the exports market has positive effects on total factor productivity (TFP) in subsequent periods. Figure 8 illustrates the effect on TFP of entering the exports market in period 1, and remaining there in future periods. In this scenario, TFP increases by seven percent in the following period, and then gradually approaches the long-run effect which is slightly less than eight percent. Such a positive effect on productivity is likely to translate to a desire to invest and the creation of new jobs. For comparison, Figure 9 shows the effect of temporary participation in the exports market, i.e. in this case the firm exports in period 1 and then pulls out. After about six years the gains in TFP brought about by the momentary participation in the exports market have been completely eroded.

It is worth stressing that the result reported by Bigsten et al. (2004a) that firms seem to learn from exporting is not the typical finding in studies looking at this issue for other regions. One possible explanation is that the potential gains from exporting are large in Africa because of high trade restrictions in the past and a large technological gap to developed countries. In such economies exporting offers the maximum scope for the increased discipline of competition, and contact with foreign customers provides the maximum scope for learning opportunities. Arguably, if exporting induces efficiency in any environment, it should do so in these economies. It would appear, then, that Africa has much to gain from orienting its production more towards exporting. Further evidence of the positive effects of exporting comes in the form of individual case studies. The spectacular success story of Mauritius has already been discussed

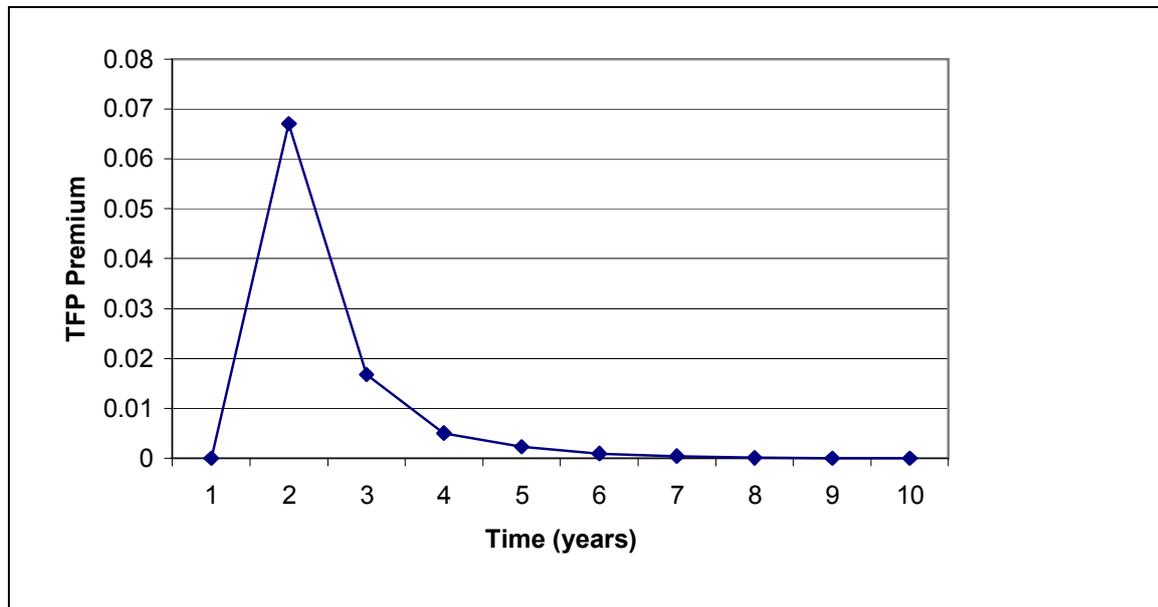
in the previous chapter. A more recent example is Madagascar (see Box 2). It is interesting to note that, to some extent, Mauritius has been victim of its success. Its GDP per capita has increased threefold between 1980 and 2000, leading to large upward pressures on local wages. Their labor-intensive industries have thus been looking for alternative opportunities, which they seem to find in Madagascar.

Figure 8. The effect of permanent entry into the exports market on TFP



Source: Authors' calculations based on the results in Bigsten et al. (2004a).

Figure 9. The effect of temporary entry into the exports market on TFP

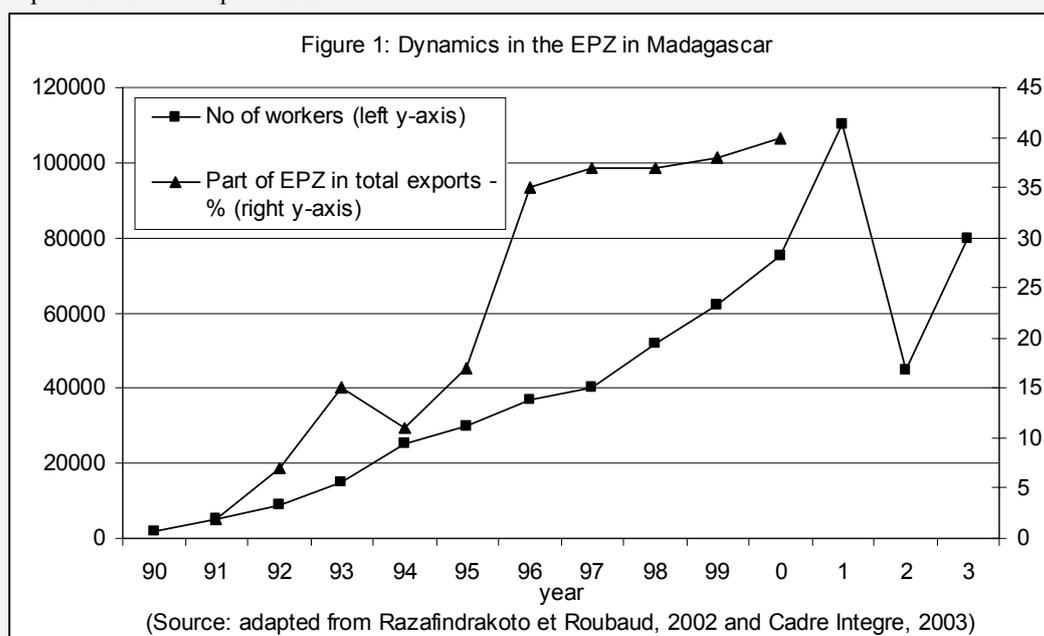


Source: Authors' calculations based on the results in Bigsten et al. (2004a).

Box 2 - The Case of the Export Processing Zone in Madagascar

Exports from Madagascar have increased significantly over the last decade. Two types of policy interventions seem to explain this growth. First, the government established in December 1989 an export processing zone (EPZ) where enterprises enjoy benefits including tax holidays from the corporate income tax ranging from 2 to 15 years (and a fixed level of 10% for all the years after), exemptions from import duties and taxes and liberty in access and movements of foreign exchange. To be eligible for EPZ benefits, firms need to export at least 95% of their production. The second change was the establishment of international agreements of trading preferences. They include most importantly the Africa Growth and Opportunity Act (AGOA) with the US and the Everything But Arms (EBA) agreement with the European Union. Under these initiatives, the poorest developing countries are allowed easier access to developed countries' markets.

Due to these interventions, export earnings, foreign investment and employment in the EPZ increased dramatically in Madagascar (Figure 1). As of 2001, about 190 firms were active in the EPZ, providing direct employment to about 110.000 workers or about half of all employment in the secondary sector in the country (World Bank, 2004). Indirect employment of the EPZ has been estimated at 300.000 workers (Razafindrakoto and Roubaud, 2002). Net Foreign Direct Investments increased from \$US 14 million in 1997 to \$US 112 million in 2001. During the period 1996-2001, the EPZ sector grew at an average rate of 22% and EPZ exports contributed to about 40 percent of total exports in 2001.



While the level of transaction and transport costs by sea and by air - both are used for exports from the EPZ - from and to Madagascar are largely above its competitors⁷, the main attraction of Madagascar for investors is its low labor costs. As of 2001, the salary costs in Madagascar were about half the level of China and India and a quarter of the level of Mauritius. The nearby location of Mauritius and the large wage differential has attracted especially Mauritian investors to Madagascar.

The EPZ sector consists mostly of textile and apparel manufacturing firms, located primarily in the capital city Antananarivo and the city of Antsirabe. However, more diversification has been noted in recent years, including companies that specialize in data entry, agro-industry (esp. shrimp farming), artisan activities and wood processing. It was estimated in 1998 that about 70% of EPZ capital was coming from abroad, dominated by

⁷ Transport costs and insurance costs are significantly higher for Madagascar. For example, transport costs for textile from Madagascar to Paris are 30% and 50% more expensive than compared to Sri Lanka and Hong-Kong respectively (ITC, 2003).

France, the former colonial power, and Mauritius, the neighboring island. In the most recent years, an increase in capital investment has been seen from Mauritius, China, Hong Kong, Malaysia and South Korea.

While critics argued that the country does not benefit at all from these enterprises as they are not taxed and that these firms create unfair competition with local firms, exploit local labor and are weakly integrated in the local economy (Razafindrakoto and Roubaud, 2002; Kusago and Tzannaro, 1998), others find strong benefits based on hard data. Glick et al. (2004) and Razafindrakoto and Roubaud (2002) show that salaries and working conditions are significantly better than in other sectors. Nicita and Razzaz (2003) find that a sustained 5 year growth of 20% per year of the textile sector would raise the consumption expenditures of more than 1 million Malagasy by an average of 24%.

In brief, the establishment of the EPZ has been an economic success story in Madagascar. However, different conditions will need to be improved to be able to continue to enjoy further growth in this type of sector as indicated by historical evidence and different firm surveys. These include a further increase in competitiveness through higher labor productivity, reduction of the cost of industrial facilities, lower transport costs, better functioning of the custom services and further vertical value chain integration (World Bank, 2004). However, the most important condition is political stability. The EPZ was off to a slow start in the 1990s due to political instability between 1991 and 1995. Madagascar had also a political crisis in 2002 that led to a dramatic drop in activities in the EPZ (Figure 1). Firms had to close down for a long period or closed down definitely and started up in other locations. Other firms went bankrupt. It is clear that under such risky and unsure production conditions, international investors quickly lose interest.

5. Constraints to Expanding Investment

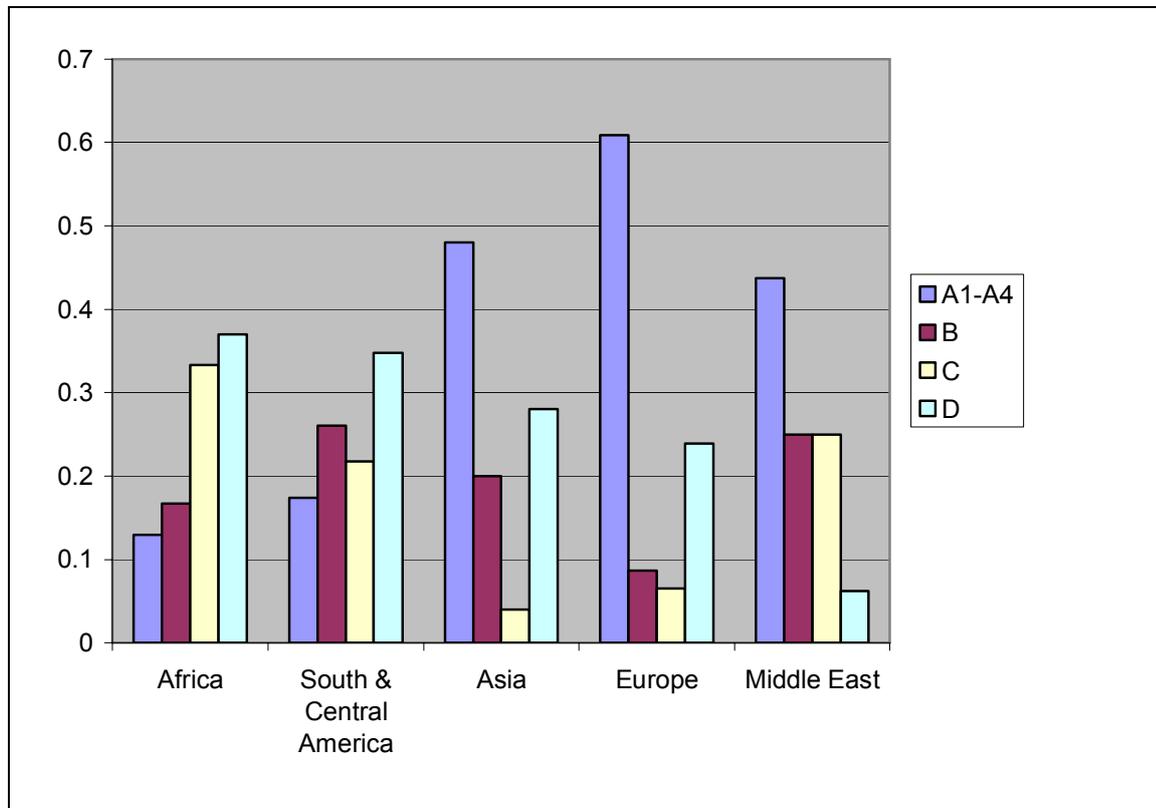
In the previous sections we have discussed the problems of weaknesses in the investment climate and how the limited size of domestic markets makes it necessary for African firms to export if they are to grow and generate more jobs. In this section we take a direct look at the determinants of investment in fixed capital among African manufacturing firms. We begin with a discussion of the effects of high commercial and political risk in Africa on investment. We then focus on the important issue of financial constraints and assess the empirical support of the common notion that such constraints have acted as a major impediment for investment in Africa.

Africa is a risky region for investors. Figure 10 summarizes one aspect of uncertainty, namely the risk of corporate payment default as rated by Coface.⁸ The graph shows the percentage of countries falling into each rating grade, in five regions. Grade C is equal to “a very unsteady political and economic environment could deteriorate an already bad payment record”, while D corresponds to “the high risk profile of a country’s economic and political environment will further worsen a generally very bad payment record”. Seventy (70) per cent of the 54 African countries rated in the survey fall into any of these two categories, by far the highest proportion among the five regions considered here. Data on the Institutional Investor (II) index of the risk of default, reported by Collier and Pattillo (2000, p.8), tell a similar story: during the 1979-96 period, Africa has continuously been the world’s riskiest region according to this criterion.

How does the high risk in Africa affect investment behaviour? Theories of investment under uncertainty stress that, because capital expenditures are largely “sunk” or irreversible, firms facing a lot of risk may adopt a wait-and-see approach towards new investment projects. More precisely, models of investment under irreversibility predict that investment will be slower to respond to demand shocks if uncertainty is relatively high. Empirical research largely supports this hypothesis. Collier and Pattillo (2000) show that the share of private investment in GDP is negatively correlated with risk, measured by the II index. In a cross-country analysis, Aizenman and Marion (1999) use World Bank data on 43 developing countries to test for the correlation

⁸ Coface is France's export credit underwriter. For details on the country rating methodology, see <http://www.trading-safely.com>.

Figure 10. Country ratings of the corporate payment default risk, by region



Source: Coface, as reported on September 23 on <http://www.trading-safely.com>.

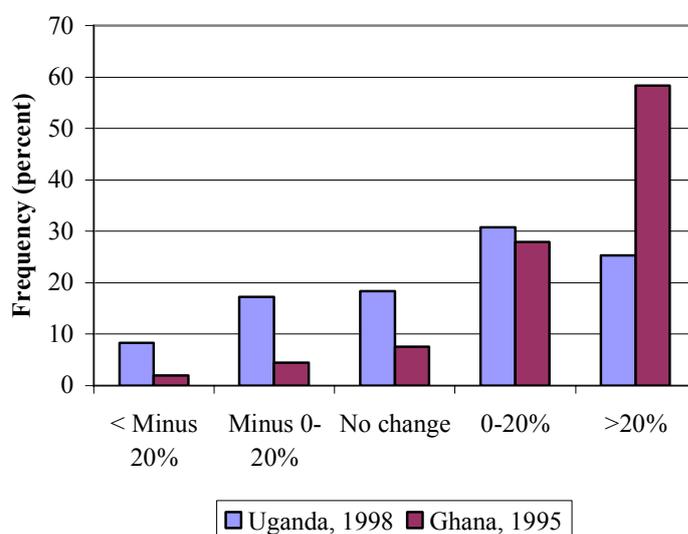
between volatility and investment. The authors construct several different measures of volatility, and show that these measures are typically strongly and negatively correlated with the share of private investment in output.⁹ This result is robust to controlling for a number of other factors that influence private investment, such as initial income, education, trade and population. In their preferred investment model they find a negative and highly significant coefficient on the volatility measure. In contrast to private investment, public investment is positively correlated with some of the measures of volatility. This suggests, perhaps unsurprisingly, that public and private investment are determined by different factors. The authors propose two reasons why public investment may increase in periods of heightened volatility: to compensate for the reluctance of the private sector to invest or, in a rent-seeking society, to distribute political rents.

⁹ The volatility measures constructed include the standard deviations of residuals from first-order autoregressive processes of fiscal, monetary and external variables, a weighted average of these standard deviations, and a measure of volatility that uses the standard deviation of innovations to a forecasting equation for growth.

Whatever the reason, the difference between private and public investment in this context is an important empirical fact.

Another strand of the empirical literature on the implications of risk utilises firm-level data. Pattillo (1998) uses panel data on Ghanaian manufacturing firms from 1994 and 1995 to test various hypotheses from models of irreversible investment under uncertainty. Based on data on entrepreneurs' subjective probability distribution over future demand, Pattillo calculates the variance of demand and uses this as the measure of uncertainty. Empirical results indicate that uncertainty has a negative effect on investment and this effect is more pronounced for firms with more irreversible investment. A similar inquiry is undertaken by Daku (2001) based on firm-level data from a survey in Uganda in 1998. Constructing the measure of uncertainty in the same way as Pattillo (1998), Daku finds a negative relationship between uncertainty and investment, and documents that this effect is stronger among firms with more irreversible investment. To give an indication of what the expectations of the firms in these two studies were at the time of the survey, we show in Figure 11 sample averages of expected growth rates of sales. In the Ghanaian sample over half of the firms expected sales volumes to rise by more than 20 per cent over the subsequent year. Only six percent of the firms expected sales to fall. In the Ugandan sample the distribution is much less skewed than in Ghana, and there is more variation across firms in the expectations. While this is indicative of higher uncertainty among the Ugandan entrepreneurs, it is important to bear in mind that the graph shows variation between firms in expected growth, not variation in possible outcomes within firms.

Figure 11. Expected Demand Growth among Manufacturing Firms in Ghana and Uganda



Source: Pattillo (1998), Table 4; Darku (2001), Table iii.

The studies reviewed above provide direct evidence that the effect of uncertainty on investment is negative. High uncertainty results in a high risk premium in the required return on invested capital, suggesting that African manufacturing firms have high opportunity costs of capital. Bigsten et al. (1999) argue that this is indeed the case. Using RPED data from Cameroon, Ghana, Kenya and Zimbabwe from the early and mid 1990s, Bigsten et al. report figures on average returns on capital that are much higher than among firms in more developed countries. This is clear from Table 3, which shows some of the figures reported in Bigsten et al, along with data from Uganda, taken from Reinikka and Svensson (2001). While there is a striking similarity in the average investment rates across all countries considered, the rates of returns on capital are much higher in Africa than in the European countries. The authors infer from this that the cost of capital is relatively high in Africa, and maintain that this is consistent with a negative effect of uncertainty on investment. A similar view is taken by Fafchamps and Oostendorp (2002), arguing that uncertainty is a plausible explanation as to why investment has remained low in Zimbabwe despite of the structural changes introduced by ESAP.

Using the same data set as in their 1999 study with Zambia added, Bigsten et al. (2004b) examine more closely if investment is affected by irreversibility and fixed adjustment costs. In such models firms will not invest anything unless the marginal return on capital exceeds some

threshold level, and so one would expect to see a significant share of zero investments in the data if the theory is right. Table 4, taken from Bigsten et al. (2004b), summarises the proportions of non-zero investments in this data set by country and firm size. With the exception of Zimbabwe, in all countries and size categories the proportion of positive investment is lower than 0.5. That is, the majority of the firms in these categories do not invest anything during a whole year. There is a weak positive relationship between firm size and the propensity to invest, although among the largest firms in Ghana only one in five firms invests in a representative year. In Zimbabwe investment activity is generally higher than in the other countries. With a third of the firms in the whole sample refraining from investing in a typical year, however, the proportions of zero investment is not negligible. The authors also show that investment is “lumpy”, i.e. whenever firms do invest they invest a lot. This suggests that fixed adjustment costs may be important, however when analyzing the decision to invest more formally, the evidence points to irreversibility as the main explanation of low investment in Africa. Modelling the investment rate as a function of the capital disequilibrium, the authors find that investment is largely insensitive to small imbalances. Only when the need for new capital becomes relatively pressing do firms invest. This study thus provides evidence that irreversibility is the main factor affecting investment in Africa. Reducing uncertainty, or improving the market for second hand fixed capital, is therefore likely to impact positively on investment.

We now turn to the issue of financial imperfections and their effects on company investment. African financial markets are the least developed in the world, and it has long been a widespread view among development economists that the malfunctioning of the financial markets hampers growth. For investment, the main problem is that firms with profitable investment projects often cannot rely on external funds to finance such projects. Commonly cited reasons for financial imperfections are imperfect information, cumbersome contract enforcement and lack of competition among lenders.

Table 3. Investment rates and returns on fixed capital in eight countries

	Investment rate	Average return on fixed capital
Cameroon	0.11	1.36
Ghana	0.13	3.63
Kenya	0.11	1.82
Uganda	0.12	0.75
Zimbabwe	0.12	0.85
Belgium	0.13	0.18
France	0.11	0.12
Germany	0.12	0.16
UK	0.12	0.13

Source: The data on all countries except Uganda were reported in Bigsten et al. (1999). The Ugandan data were reported in Reinikka and Svensson (2001).

Table 4. Proportions of Non-Zero Investments Among Firms in Five African Countries

Employment	Cameroon	Ghana	Kenya	Uganda	Zambia	Zimbabwe
$1 \leq 5$	0.21	0.31	0.44	n.a.	0.29	0.53
$5 < \leq 20$	0.29	0.44	0.40	n.a.	0.29	0.51
$20 < \leq 100$	0.24	0.48	0.41	n.a.	0.28	0.63
> 100	0.38	0.20	0.44	n.a.	0.38	0.71
Total	0.29	0.32	0.42	0.52	0.31	0.66

Note: The table is based on data from a sample of 821 firms.

Source: Bigsten et al. (2004b).

While the idea the investment is low in Africa because of financial imperfections may have some intuitive appeal, it is important to realize that financial imperfections will not translate into binding credit constraints unless firms have a desire to invest. Thus, if there are few profitable investment opportunities one would not expect lack of credit to be a real constraint on investment. One corollary is that one would not expect reforms of the financial market to lead to significant short-run positive effects on company investment in a period of recession. One of the first studies analyzing whether investment among African firms is hampered by lack of external finance is that by Bigsten et al. (1999). These authors follow a relatively common path of investigation, testing whether investment is sensitive to changes in cash flow among firms in four African countries. The evidence indicates that there is a significant profit effect on investment, which suggests that credit constraints are present. With point estimates on the profit term ranging between 0.06 and 0.10, the magnitude of the effect is small. Only between six and ten cents of an additional dollar earned in profits are invested.

Subsequent research based on RPED data confirms that investment is not particularly sensitive to changes in profits. In an in-depth analysis of the manufacturing sector in Zimbabwe 1992-94, Fafchamps and Oostendorp (2002) show that the cash-flow sensitivity of investment is low, even among small firms. Söderbom (2002) obtains a similar result for Kenya. Mazumdar and Mazaheri (2003) use a sample of six countries (adding Cote d'Ivoire and Zambia to the set of countries considered by Bigsten et al., 1999), and report an estimated profit coefficient is 0.08, thus very similar to that of Bigsten et al. Mazumdar and Mazaheri also split the sample according to firm size, and obtain a profit coefficient equal to 0.09 in the sub-sample of small firms. They interpret the larger profit coefficient among small firms as evidence that small firms are more credit constrained than large ones. Reinikka and Svensson (2001) obtain a profit coefficient equal to 0.08 based on a sample from 1996-97 of Ugandan manufacturing firms. These authors too find a larger profit effect among smaller firms, which is consistent with the notion that credit access is more of a problem for small firms. The point estimate of the coefficient on profits among small firms is 0.11, and so quantitatively the effect is not particularly large even for small firms.

A different approach to analyzing the evidence of credit constraints is adopted by Bigsten et al. (2003), who look for more direct evidence on formal credit market participation and constraints faced by firms. The authors analyze survey data from six African countries (Burundi,

Cameroon, Côte d'Ivoire, Ghana, Kenya, and Zimbabwe) on firms' demand for external funds and whether loan applications were approved or not. Table 5, originally Table 2 in Bigsten et al. (2003), displays summary data on the frequency of loan applications, and, conditional on an application having been made, the outcome. These data suggest the demand for formal loans among African manufacturers is low: less than 20 percent of the firms in the sample had applied for a formal loan in the year prior to the time of the survey. Among those applying, the majority of firms obtain loans. There are large differences across the size distribution: among small firms loan applications are less common, and the success rate lower, than among larger firms.

Of course, a firm may be credit constrained even if it does not apply for a loan. For instance, a firm may expect that an application will not be successful precisely because there are credit constraints, and may therefore decide not to apply in order not to incur the transactions costs. Based on information on why firms did not apply for a loan, Bigsten et al. identify three groups of firms: those without credit demand, and, among firms with credit demand, those constrained and those unconstrained. Table 6, which summarizes these data, shows that 55 percent of the firms in their sample have no credit demand, 33 percent are credit constrained, and 12 percent are unconstrained. Across the size distribution, the differences are large. Close to two-thirds of the micro firms appear constrained, but only 10 percent of the large firms. About two-thirds of the large firms choose not to participate in the credit market, compared to only a third of the micro firms. The notion that the smallest firms are credit constrained is supported by regression results indicating that, controlling for other important factors such as expected profitability and indebtedness, the likelihood of a loan application being successful varies with firm size. While this suggests banks are biased against small firms, the authors note that this result may reflect transactions costs on the part of banks. In any case, the size effect is substantial: for a micro firm to have an equal chance of getting a loan as a large firm, the micro firm needs to have an average return on fixed capital more than 200 percentage points higher than the large firm.

Another novel approach for analyzing the links between formal credit and company investment is adopted by Habyarimana (2003) who uses matched bank-firm data from Uganda, collected as part of the 2002 RPED, to estimate the effect of losing a banking relationship on firm performance. The background to this study is that four Ugandan banks were closed between September 1998 and 1999 because of imprudent banking practices. As a result, 30 percent of the

firms in the sample lost one or several banking relationships. Habyarimana estimates that over the three years following the banking crisis, the average annual growth rate of employment among firms that lost a banking relationship was 2.3 to 4 per cent lower than the average growth rate of unaffected firms. These estimates are obtained whilst controlling for firm fixed effects and sector-year effects. Further, firms affected by the banking crises are more likely to report being credit constrained, suggesting that losing a banking relationship hampers investment. Direct evidence on the effect on investment, however, is not provided in this study.

Table 5. Formal Credit Market Participation by Firm Size (percentages of firms)

	Micro	Small	Medium	Large	All
Did not apply	92	82	80	75	82
Applied and did not receive	6	11	9	5	8
Applied and received	2	7	11	20	10

Source: Bigsten et al. (2003)

Table 6. Credit Constraints by Firm Size

	Micro	Small	Medium	Large	All
No credit demand	33	50	67	66	55
Demand, but rejected*	64	42	21	10	33
Received loan	3	8	12	23	12

*Includes firms that suggested that a loan application would be rejected by banks

Source: Bigsten et al. (2003)

The general picture that emerges from the research on credit constraints in African manufacturing is one where credit might not have been a severe constraint on investment. There is some evidence that lack of credit has been a problem for small firms, but although the profit effect on investment is larger for small than large firms (Reinikka and Svensson, 2001), it is still small by the standards of what has been reported for other regions. The analysis of firms' borrowing behavior by Bigsten et al. (2003) gives a similar picture: on average the desire for formal credit has been relatively modest, although among very small firms there is relatively high demand for credit. Further, the muted effect of credit availability on investment feeds into a muted effect on labor demand. The most likely explanation why credit (or the lack of credit) has not been a major factor in explaining why investment has been low over the last decade, is that during this period few firms in these countries could identify strong investment opportunities. This does not mean that the reforms of the financial systems implemented in many African countries in the 1990s were unnecessary. The reason these reforms have appeared ineffectual thus far is that the constraints that were relaxed as a result were in fact not binding at the time. When firms expand the need for formal borrowing will increase, and the financial reforms may then turn out to have a higher pay-off both in terms of higher investment and more jobs. However, with hindsight it seems reasonable to make the point that priority should have been given in the 1990s to facilitating exports and productivity growth over credit. This is one example of how getting the reform priorities right is important. We turn to this issue next.

Box 3 - Africa calling: the emerging call center industry in Africa

A woman in Senegal sells telephone subscriptions to a French customer over 6000km away; another in Ghana processes an American customer's insurance claim; an operator in South Africa assists an English customer with his banking inquiries. Welcome to the new world of offshore call center outsourcing where technology has enabled the tyranny of distance to be overcome and allowed firms to exploit low cost labor in developing countries.

The phenomenon of offshore outsourcing of call centers has received a great deal of press in recent years, due mainly to fears in developed countries regarding the loss of jobs to distant lands. Attention thus far has primarily been focused on Asian countries such as India and the Philippines, however Africa is also starting to share in some of the industry's growth. While certainly job losses will continue to be a concern in developed countries, poorer countries in Africa are embracing its benefits.

A report released by market analysts, Datamonitor, in April 2004, predicts that the number of call centers in Europe, the Middle East and Africa (EMEA) will increase by over 50 per cent through 2008, from 29,000 at present to roughly 45,000. There are numerous success stories throughout Africa. In South Africa, call centers are a key development strategy for many of the regional governments. During the past two years, several companies have announced plans to invest in South African call centers and the Department of Trade and Industry predicts that the industry could expand to create an additional 100,000 jobs in the country by 2005. Likewise in Ghana, call centers are developing to service English-speaking markets while Senegal, Morocco and Tunisia are focused on serving French markets.

Apart from the obvious benefits relating to investment and jobs that these call center outsourcing projects bring to Africa, there are some additional benefits in the form of higher salaries, often to previously disadvantaged groups. In Senegal for example, the starting salary of approximately US\$200 a week for many call center operators may still be well below the minimum wage of US\$1200 offered to their French counterparts, but it is a vast improvement over the minimum wage of just US\$85 per week. There is also evidence that previously disadvantaged groups in African society are sharing in this increased prosperity. In the Western Cape province of South Africa for example, the preliminary results of a recent survey by auditors Deloitte & Touche found that black women account for 43% of all call center agents, 42% of supervisors and 28% of management positions.

While the future for call center development in Africa appears promising, there are some hurdles to overcome. Most prominent of these concerns is the additional risk involved in establishing operations in developing countries. This risk comes in various forms, including currency fluctuations (particularly notable with the recent strengthening of the rand), the size of the investments, the increased exposure to political instability and an uncertain regulatory environment, primarily concerning the usage of voice-over-internet technology. Coupled with the agitation of many unions in developed countries fearing the loss of jobs to poorer countries, it is little wonder that firms have been hesitant to fully embrace the outsourcing of call centers. In France for example, only 2% of telephone sales jobs are outsourced overseas according to CESMO, a French consultancy group.

Firms are also becoming increasingly concerned about cultural differences that may affect customer satisfaction rates. South Africa has benefited from its close cultural proximity to the UK in securing several contracts. Other regions in Africa have taken measures to reduce cultural barriers, ranging from voice neutralization software and coaching lessons in order to make call center operators accents as neutral as possible, to learning the local weather and geography of the regions from which their customers are calling.

Despite the high relative salaries of call center workers in Africa, bodies such as the Congress of South African trade unions have raised concerns over the welfare of workers, particularly in regards to health and safety. Concerns have also been raised regarding the long-term economic impact of call centers, with fears that call centers may develop into the "electronic assembly lines of the new economy", lacking the scope for continued technological enhancement and locking developing countries into deteriorating terms of trade.

Despite these reservations, the potential of the call center industry in Africa is undisputed for some key reasons. The most important of these is cost. The Department of Trade and Industry in South Africa estimates that call centers in South Africa typically cost between 30-35% less than in the UK or the U.S., with similar figures for other regions in Africa. The continued development of telecommunications infrastructure should also assist the development of the industry, as well as the quality of staffing. The high relative wages being offered in these call centers enable them access to a pool of well educated employees. In many of the call centers, the minimum educational requirement for operators is a college degree. Other advantages in Africa include being in the same or similar time zones to much of Europe and an attrition rate around a third of that in India, reducing the costs of

training and ensuring the quality of service.

While the call center industry in Africa appears set for strong future growth, geographical factors appear to be particularly promising for countries in North Africa. According to market analyst firm, Datamonitor, the recent phenomenon of near-shoring (where firms prefer to outsource their call center operations to nearby locations for a variety of reasons) may see countries in North Africa gain a greater share of European business. Either way, it appears that developed countries will be hearing a lot more from Africa in the future.

6. Knowledge Gaps and Policy Implications

Chapter 2 in this volume has documented the broad trends in African labor markets over the 1990s and focused on understanding the structural and institutional determinants of wages and employment in Africa. Chapter 3 has concentrated on the climate for job creation with an emphasis on the role of exports and investment. Based on these two chapters, this section seeks to identify the most acute knowledge gaps in this area of research and bring together the policy implications.

Knowledge gaps

The rapid increase in the number of firm and household datasets available to researchers over the last decade has resulted in a much better understanding of how African labor markets function. Important knowledge gaps remain, however. We have identified six areas in which we believe more research is urgently needed.

First, we do not fully understand the reasons why wages are so closely linked to firm size in Africa. We know it is not simply a skill effect, but there is work providing both an efficiency wage and bargaining interpretation of the correlation. For policy it matters a lot which of these explanations is correct. A focus on efficiency wages suggests that firms may not wish to expand employment as to do so is not profitable. Labor may look “cheap” but on an efficiency adjusted basis it is not. In contrast, there is evidence of strong bargaining effects on wages within the manufacturing sector and for South Africa more widely. Before advising countries in any useful detail about which aspects of labor flexibility should be prioritized, we need to know the relative importance of these very different reasons as to why firms do not expand employment for the unskilled.

Second, we need to know more about how and when wages adjust in response to excess labor supply, either in the form of unemployment or underemployment. Section 4 in Chapter 2 noted that the existing evidence of a “wage curve” relationship covers only a few, possibly anomalous, economies. As a first step, further research should be directed toward investigating how flexible other African labor markets are by this definition.

Third, we need to understand better the microeconomic determinants of flexible wage adjustment. To reiterate the questions posed in Chapter 2, Section 4, do real wages fall for given jobs, or do observed wage reductions reflect changes in firm composition? Do wages fall for

existing employees or does wage adjustment occur solely on the margin of new jobs? Answering these questions will require analysis of panel data on workers and firms over significant time periods.

Fourth, we need more research on union wage premiums in Africa. One of the striking results documented in Chapter 2 has been the importance of the union premium outside of economies where it is well known to be important, such as South Africa. We understand very little as to what determines these premiums, why they differ so much across countries and how they change over time. As with the case of understanding wage differentials across sectors and firm sizes, a clear resolution of these questions will require empirical analysis which can disentangle the role of individual worker attributes from firm and union effects. This requires data matching firms and workers over time, tracking individuals remaining in a given job and those moving across firms.

Fifth, we need more work on the dynamics of returns to skills. Chapter 2 has focused primarily on skills as measured by education. There is some evidence already that the return to these skills have been changing. In particular labor market firm-level data suggest increasing convexity in the Mincerian returns to skills. Does this reflect actually falling returns at the lower end of the distribution or simply relatively rapid rises at the upper end? Evidence is limited on this point and is vital to understanding how the increased supply of skilled labor is interacting with the demand. Limited investment is likely to lead to a limited growth in the demand for skilled labor. There are many other dimensions to these skills in terms of the training and experience of the workforce. Little is known as to how these have been changing over the last decade. Again the recently collected data on labor markets makes it possible to investigate these issues.

Sixth, we need to understand more fully how the business environment affects firm performance. In particular, it would be useful for policy purposes if researchers could specify more precisely which aspects of the investment climate act as the most important constraints, and assess the relative importance of these to other factors such as labor costs. Analysing the role of the investment climate for performance is a rapidly growing area of research, but we do not yet have a complete picture. Measurement problems as well as methodological issues need to be taken seriously. For instance, it was shown in Section 6 that the subjective data on infrastructure appears to correspond poorly with objective measures in our sample. Why is this

and what criteria should we use when assessing the quality of infrastructure are examples of the nature of questions that are as yet unanswered.

Policy implications

The starting point for our policy discussion is the fact, documented in Chapter 2, that for almost all African economies most of the process of employment expansion has been the expansion of the informal, non-export, low-wage sector. While this has provided jobs, it has not provided the kind of jobs that will ensure that employment growth is linked to rapid reductions in poverty. Private formal sector employment has grown in absolute terms but not as fast as the labor force. Private wage employment in the formal sector is already, at current wage levels, the surest route to income security for African households, as documented in Chapter 2, Section 2. Thus the challenge of labor demand in SSA must be seen as the need to expand formal sector employment opportunities.

The present chapter has focused on the role of firm level characteristics and business environment factors in determining the demand for labor. The general problem among African firms is on the production side: firms are not productive enough and hence not internationally competitive. This is the main reason not enough jobs are created for the poor. What can be done about it? The answer is in two parts. Firstly, Africa must change the sectoral composition of its economies so that more production takes place in high productivity sectors. Secondly, within sectors, Africa must speed up the transfer and adaptation of technology to local producers.

Changing what an economy produces is difficult. The main reason is that local demand largely dictates what is produced, and as discussed in Section 4 in this chapter, domestic markets in Africa are typically small and demand for sophisticated manufactured goods is limited. This leaves very little room for improvement, hence the difficulty of rapidly changing the sectoral composition of output by relying on the domestic market. The small domestic market problem can be circumvented through exports. Here the very small footprint of Africa in international trade is an advantage: Africa could probably multiply its manufacturing or service exports by 10 or more before anyone would take notice.

Putting the emphasis on exports raises other questions having to do with competitiveness. In traditional trade models, competitiveness is driven by labor and capital costs. Why if labor costs are lower than in developed countries is investment in Africa low? The first point to be

clear on here is that, as discussed in Chapter 2, the important issue is not wage levels per se, but rather how high are wages relative to the underlying productivity with which firms produce. With higher productivity both high wages and high growth are possible. Successful expansion of manufacturing exports requires relatively large firms, using relatively large amounts of labor to capital, combined with technical knowledge to exploit export opportunities. There are countries in Africa which have succeeded but success has remained too rare for it to impact on the well-being of most Africans.

A second point, closely related to the first, is that wages need to be fairly responsive to demand or productivity shocks. Labor flexibility is a ubiquitous theme in policy debates of labor market reform, but the research reviewed in Chapter 2, Section 4 showed that it is wage rigidities between sectors and firm sizes – rather than wage adjustments over time or in response to unemployment – which are the relevant dimension of labor flexibility for African economies. The enormous gains which may arise from improved flexibility are illustrated by the Mauritian experience, in which an influx of new entrants to the formal sector labor force helped to maintain competitive wage levels while simultaneously ensuring that the benefits of export growth were spread across a wider range of workers.

A third possible reason why despite low labor costs investment is low is lack of skills. This is the notion that while the wage rates in African labor markets may appear low, once they are adjusted for quality differences African wages are in fact much less internationally competitive than what seemed to be the case at first glance. It has been shown in Chapter 2 that skill levels in African labor markets remain relatively low, but also that they have been rising consistently as a result of the large public investments in primary education in recent decades. The problem is that this expansion in the supply of skills is taking place against a backdrop of poor job creation, where firms' demand for skilled labor has not grown at the same pace as the cohorts of primary and secondary school graduates. This failure of demand to keep pace with the supply of skills is witnessed in the very low rates of return to early years of education revealed by Mincerian earnings equations. Clearly, in order to achieve the underlying economic goals of educational expansion – i.e. to create a well-paid pool of skilled labor able to compete in international markets -- African economies must focus on creating jobs to capitalize on the expanding new resource of secondary school graduates.

Other possible explanations why African firms have failed to perform well and generate new jobs are to be found among factors beyond labor and capital costs. The quality of the investment climate is a central factor, reviewed in the present chapter. With poor infrastructure and a weak regulatory system, Africa is at a disadvantage in this context. Improving the investment climate with an eye towards facilitating exports must be a key part of any reform program purporting to strengthen the private sector in Africa. Market institutions such as laws, courts, business associations, lobbies, quality control, protection of property rights and enforcement of contracts need a major overhaul. Innovations are also required in financial institutions - not just commercial banks but insurance, hire-purchase/leasing of equipment and vehicles, merchant banking, letter of credit, bonds, hedging instruments. Significant improvement is required in commercial and business services, e.g. in the provision of warehousing, transport, utilities, auditing, marketing, market prospecting, export promotion, product design and maintenance. Two examples have been cited in the papers, Madagascar and Mauritius, as examples of how good economic policy may have large pay-offs. In Madagascar through the establishment of an efficient export processing zone, manufactures of textile and garment went from nothing to one third of foreign exchange earnings in just a few years. In Mauritius the investment climate played a major part in transforming the economy in little more than two decades.

Africa's to do list is long and may appear daunting. The good news is that not all reforms are required at once. Competitiveness is a relative concept: one only has to be as competitive as others. This requires that local production costs be brought down just enough to compete, something that can be accomplished by adopting some innovations but not all. The first task is thus to identify what improvements can be introduced at lowest local cost. Secondly, it is not necessary to improve the environment of all sectors at once. If a country decides to focus on manufacturing, it can disregard institutions and infrastructure that favors agricultural technology -- and vice versa. Third, it is not necessary to improve sectoral environment in the whole country. To the extent that the financial and manpower resources of the government are limited, it is best to focus on high potential areas.

Focusing growth efforts on a specific sector (e.g., garment manufacturing) and a specific location (e.g., a town) can save money. It also raises the probability of success as the competitiveness threshold required for exports is more likely to be achieved than if resources are

spread thinly across a multitude of sectors and locations. Two caveats are in order. First, certain policies affect all sectors at once. A stable macroeconomic environment, for instance, is required for all sectors to prosper. Second, if focused development efforts yield results in terms of growth, these results are highly concentrated. Thus, unless the growth sector happened to be very poor to start with, it is possible that income inequality will increase in the short term. Further, it is possible that the growth sector or location becomes a magnet for migrant workers, which may result in social problems (see e.g. Cote d'Ivoire). A successful growth strategy may thus present new problems from a political and social point of view, especially regarding international and even national movements of workers. There have been several cases in recent history where migrant workers have been expelled following a reversal of fortune. The key is to keep delivering on growth: as long as there is hope of upward social mobility, poverty and social tension is easier to bear as it is seen as a temporary phenomenon. It is failed growth that raises political demands that are impossible to meet and results in social upheaval.

Which sector to focus on will vary from country to country, but manufacturing and agriculture are likely to be good choices in most cases. These sectors can produce output for the exports market, and the potential for productivity gains externalities appear significant. However, efforts need to be concentrated, as discussed above. Other options are worth considering as well. The rise of the internet has made possible new forms of service exports such as call centers (see Box 3 in the present chapter) and software development. To be competitive, a country needs cheap and reliable telephone connections to the rest of the world and manpower familiar with English and the internet. Whether Africa can carve itself a niche in this rapidly growing market remains to be seen. Tourism is a priori another option, but high air fares combined with the negative image of some African countries abroad due to the prevalence of crime probably implies that a rapid development of tourism is unlikely.

The most fundamental point is that Africa must build on its strengths and relax the binding constraints. African manufacturing firms have the potential to do well internationally. Looking carefully at the performance of firms it is clear that there is a large variation within sectors and countries. In recent years, while most firms may have experienced limited success, some have performed very well. These tend to be firms that do new things, with a scientific approach to business and with state of the art technology. They are often exporters. To enable more firms to achieve similar levels of performance, the adoption of new technology and

orientation towards new markets must feature as key components of African industrial policy. Policies that provide incentives and means to firms to adopt a scientific strategy will most likely be effectual in enhancing competitiveness, provided that they are accompanied by policies that stimulate exports. A status quo where firms continue to supply the small domestic market with basic and cheap products will, even if these products are efficiently produced, not generate the large number of new jobs needed to eradicate poverty.

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