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What Africa Needs to do to Spur Growth and Create More Well-paid Jobs

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Poverty reduction in Africa has been held back by decades of stagnant economic growth that has failed to generate enough well-paid jobs to lift the income of workers in Africa's rapidly growing labor force. Weak demand for labor among employers in the formal sector reflects a variety of constraints on wages, education, and investment, including the lack of flexibility in wages across sectors, the shortage of workers with the right skills—skills that require postsecondary education, the low productivity of labor, the weak investment climate, and the poor quality of infrastructure in most African countries. Only by becoming internationally competitive and exporting more will Africa accelerate its economic growth and create enough formal sector jobs to reduce poverty. Policy changes can relax the current constraints by adjusting labor market regulations to enable firms to change wage rates in response to demand and productivity shocks, by turning out more secondary school and tertiary level graduates with relevant skills, and by encouraging innovations in financial institutions, courts, and business services to promote investments in new technology and promising export markets.

This paper has been compiled by Melissa Sekkel, Vandana Chandra, and Louise Fox based on two papers: *Patterns of Labor Demand* by Geeta Kingdon, Justin Sandefur, and Francis Teal and *Climate for Regional Job Creation* by Marcel Fafchamps, and Måns Söderbom. The authors are from the Centre for the Study of African Economies at the University of Oxford. It was edited by Bruce Ross-Larson's team at Communications Development.

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1. THE ECONOMIC CONTEXT FOR JOB CREATION IN AFRICA

Two key facts underlie the problems that Sub-Saharan African economies faced over the 1990s. The first is that economic growth persistently lagged far behind the rest of the world. Although economic growth across Africa moved from negative in the 1980s to positive in the 1990s, it still averaged less than 0.2 percent a year. Low growth has now been the norm since the 1960s, with the result that over four decades Sub-Saharan African economies have grown only 0.3 percent a year, one tenth of the world average.

The second key fact is that Sub-Saharan Africa's population growth has far outstripped its meager economic growth and demand for labor. Capital stock per capita fell on average nearly 1 percent a year over the 1990s. The implications are stark: without rising investment and rapidly falling real wages, labor demand will stagnate and unemployment will rise.

Where are those coming onto the labor market to find jobs, if wages do not adjust? What are the implications for the increasing number of young secondary school graduates, as they begin to seek work? What are the implications of falling wages, if they do occur, for household consumption and poverty? We propose to address these questions not by looking at Sub-Saharan Africa averages, but by focusing on a group of better-performing African countries. Their experiences will provide lessons on how the better performers can be emulated and improved still further.

In 1970, for example, the economies of Botswana, Mauritius, South Africa, and Zambia all had per capita incomes ranging from $1,000 to $7,000 (as measured in purchasing power parity in U.S. dollars). By the end of the 1990s Botswana's income had risen from $1,000 to $7,000, while South Africa's had stagnated for the whole 30 years. Zambia, which at the beginning of the period had an identical income to that of Botswana, steadily declined in the 1970s and 1980s, with only the most modest of recoveries in the 1990s. The spectacular success over this period was the performance of the Mauritian economy, in which per capita income quadrupled in 30 years. In 1970 Mauritius had half the income of South Africa; by the end of the 1990s it had twice its income.

Why have Mauritius and Botswana been so much more successful than other Sub-Saharan African countries? A key part of their success had been their ability to ensure that exports grew rapidly. The value of Mauritius' exports per capita in 1995 prices was $500 in 1970 and more than $2,000 by the end of the 1990s. Until the early 1990s Botswana was equally successful, although since then it has fallen sharply. While the Botswana economy has remained reliant on natural resources, primarily diamonds, Mauritius has diversified its export base initially into manufactures and more recently into services, such as tourism. This was associated with large increases in the demand for

labor, much of it female, and substantial rises in real wages. In this study we seek to document how labor demand has changed in Africa over the past two decades, suggest reasons for the outcomes that have been observed, and outline the range of policy options that need to be considered to ensure that growing labor demand helps to reduce poverty.

LABOR MARKET TRENDS

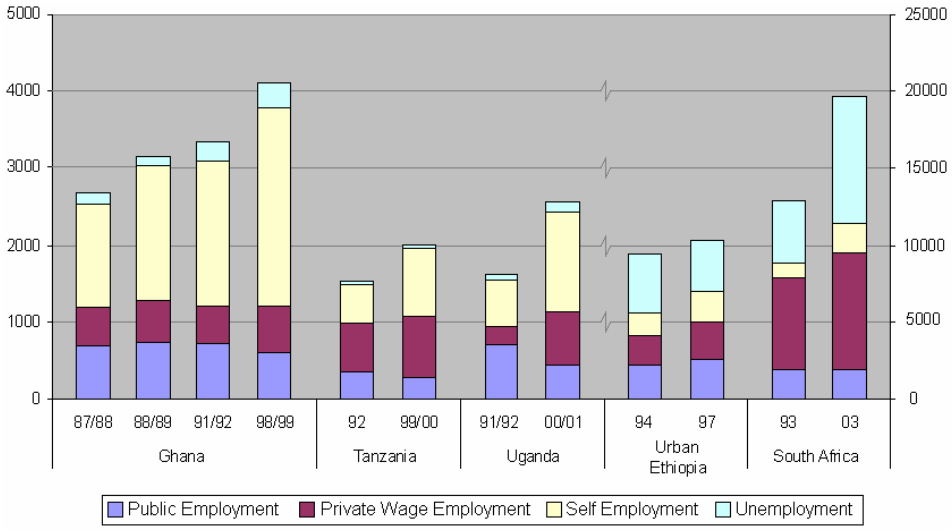
How is the African labor force distributed across sectors, and which sectors, if any, are producing job growth? Data from individual household and labor force surveys in the 1990s provide an overview of the distribution of employment across sectors in three African economies: Ghana, Tanzania, and Uganda. Some common patterns can be observed (figure 1).

1. *The level of wage employment increased in absolute terms, but it failed to keep pace with a growing labor force*. In all three countries, formal wage employment increased over the 1990s. The very gradual trend in job creation was driven primarily by the private sector, with the proportion of wage employees in the public sector declining in all three countries. Expansion in the formal sector did not keep pace with population growth or growth in the labor force, however, meaning that the proportion of workers in formal wage employment either remained constant or declined.
2. *The share of the informal sector in total employment grew rapidly.* In all three countries, the absolute number of self-employed people increased greatly, indicating that the informal sector increased as a proportion of the workforce.[1] The informal sector in these countries absorbed excess labor during a period of labor force growth.[2]
3. *The informal sector is large and unemployment low*. Both unemployment and informality can be viewed as manifestations of excess labor supply, due at least in part to wage distortions in the formal sector. In Ghana in 1998/99 the rate of nonagricultural self employment was over 27 percent. Formal sector earnings premia were as high as 60.3 percent in Cameroon and 40.9 percent in Côte d'Ivoire.

[1] Nonagricultural self-employment is considered synonymous with the urban informal sector here. This is inaccurate for at least two categories of workers: entrepreneurs and business owners in the formal sector, who constitute a very small share of the total, and high-income professionals, such as attorneys, independent financial service providers, and doctors. Inclusion of both groups implies that earnings data for self-employment overestimate earnings in the informal sector. The attention given to wage employment in the following sections is intended only to identify sources of high-earning opportunities, rather than to give preference to wage employment over self-employment or informal activities per se.

[2] This is consistent with recent evidence from Burkina Faso presented by Calvés and Schoumaker (2004), who document a growing tendency for entry-level workers to turn to the informal sector.

Figure 1. Nonagricultural Employment in Ghana, Tanzania, and Uganda Rose during the 1990s.



LINKS AMONG WAGES, GROWTH, AND POVERTY

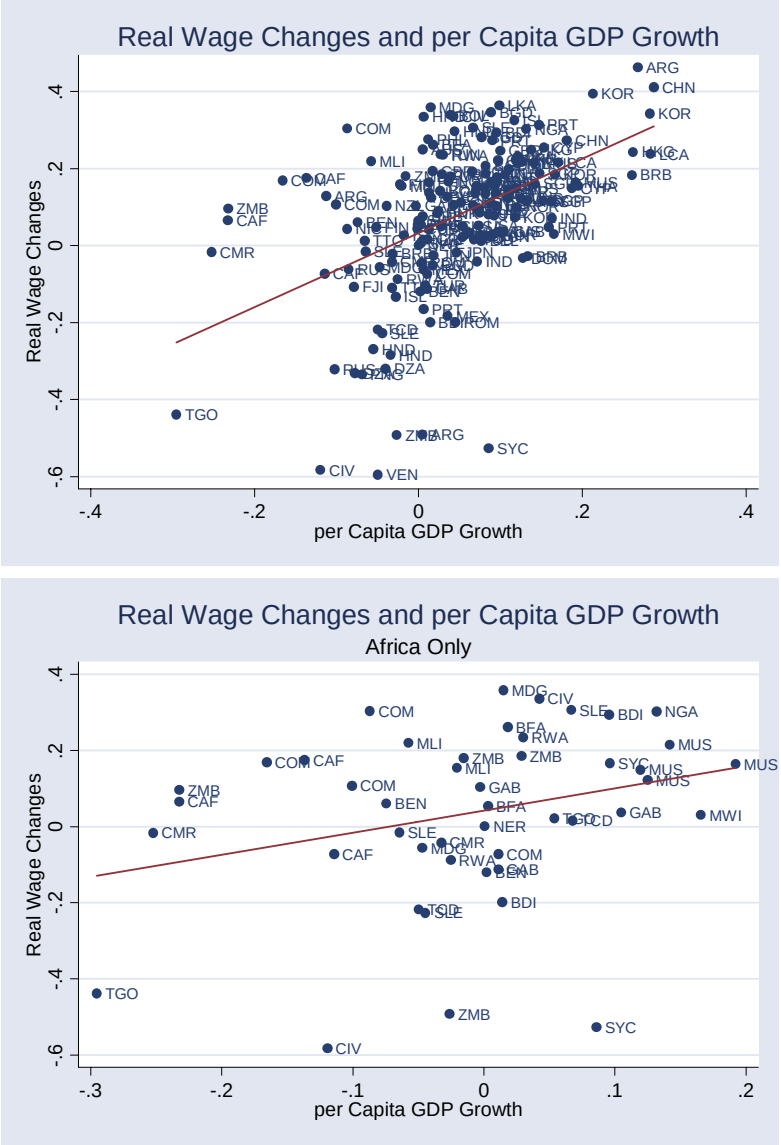
Earnings from wages in the private sector may rise in two broad ways:

- Wages for a given job may rise over time, either in response to changes in worker productivity or external sources of wage pressure; i.e., the wage *rate* may rise.
- Alternatively, wages for a given job (the wage rate) may remain constant or even decline over time, yet household wage earnings may increase as employment expands and more workers move into high-wage, formal sector jobs.

To what extent has aggregate economic growth, where and when it has been achieved in Africa, translated into real wage increases for unskilled workers? Looking exclusively at those occupations fitting into the broad category of unskilled production workers, growth in per capita GDP has indeed been fairly correlated with real wage increases worldwide, but the relationship is weaker in Africa.

Figure 2. Economic Growth has pushed up Wages for unskilled Production Workers Worldwide, but less so in Africa.

A. Change in real wages and per capita GDP in countries worldwide
B. Change in real wages and per capita GDP in African countries



Source: Compiled from the International Labour Office's October Surveys by Freeman and Oostendorp (2000).
Note: Based on national accounts data with internationally comparable data on wages by occupational category.

One would expect the relationship between wage and GDP growth to be closest for economies in which the growth process was intensive in the use of unskilled labor. Does the weakness of the correlation for Africa reflect the fact that African growth, where it has occurred, has not been of this form? Is some attenuation in wage increases a precondition for industrial expansion and growth? We are unaware of any work investigating these issues. A related question is, to what extent do growth and real wage increases translate into a reduction in poverty? Policy recommendations made by the World Bank and other international organizations have placed great emphasis on broader economic growth as a means to achieve the more specific goal of poverty alleviation (Dollar and Kraay 2002). Focusing here on Africa, we note that the implications of growth for the poor depend in large part on the impact of growth on rural incomes. One mechanism for such an impact, conspicuous by its absence in the data we have surveyed, is the migration of rural workers to urban jobs in export sectors. If wages were higher in such jobs, then average wages would be rising, as would employment and incomes. Then the impact on poverty could be substantial.

THE PROBLEM OF LOW LABOR DEMAND AND THE IMPORTANCE OF EXPORTS FOR JOB CREATION

One of the key problems in labor makers in Africa is the uniformly low demand for labor in the formal sector, with job creation failing to keep pace with labor force growth. In almost all African economies, most employment expansion has occurred in the informal, nonexport, low-wage sector. This growth has not provided the kind of jobs that could rapidly reduce poverty. To create well-paid jobs, manufacturing exports need to increase.

Exports are critical to economic growth in Africa, because most domestic markets are very small and demand for manufactured goods is low. The value added of the largest economy in Sub-Saharan Africa, Nigeria, is less than that of Norway; the economies close to the Sub-Saharan Africa median (Botswana, Zambia) are 40 percent smaller than the economy of Luxembourg. Moreover, among the least developed countries, Engel effects (changes in commodity preferences as people's incomes rise) favor basic subsistence needs over sophisticated manufactured goods (Tybout 2000). For these reasons, African industry must orient a substantial share of its output toward exporting if it is to promote development, create new jobs, and reduce poverty.

Exporting is the most promising route to growth and development in Africa for a variety of reasons:

- The empirical link between exports and growth seems indisputable (even if the reasons for this link are poorly understood).
- Africa currently accounts for just a tiny fraction of world trade, suggesting that the potential for expansion is significant.
- Experience in Ghana and Uganda suggests that export recovery can generate substantial gains quickly.
- The export potential in the industrial sector, particularly manufacturing, is high. Moreover, investment in this sector increases demand for unskilled labor and therefore has the most direct impact on poverty.

Further evidence of the positive effects of exporting comes from individual case studies. Mauritius has enjoyed spectacular success as a result of exports. Madagascar has also increased per capita GDP through this route (box 1).

Box 1: Boosting Exports through an Export Processing Zone: the Madagascar Success Story

Exports from Madagascar increased significantly in recent years, largely as the result of two types of policy interventions. The first was the establishment, in December 1989, of an export processing zone (EPZ), within which enterprises enjoy benefits including tax holidays from corporate income tax of 2–15 years (and pay a fixed level of 10 percent thereafter), exemptions from import duties and taxes, and free access to and movement of foreign exchange. To be eligible for EPZ benefits, firms need to export at least 95 percent of their production. The second was the signing of international agreements on trading preferences, including the Africa Growth and Opportunity Act with the United States and the Everything But Arms agreement with the European Union. These initiatives grant the poorest developing countries freer access to developed countries' markets.

As a result of these interventions, export earnings, foreign investment, and employment in Madagascar's EPZ increased dramatically. 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 (World Bank 2004a). Indirect employment of the EPZ has been estimated at 300,000 workers (Razafindrakoto and Roubaud 2002). Net foreign direct investment increased from $14 million in 1997 to $112 million in 2001. Between 1996 and 2001, the EPZ sector grew at an average annual rate of 22 percent, and EPZ exports contributed to about 40 percent of total exports in 2001.

Critics of the EPZ argue that the government of Madagascar does not benefit from it, as its enterprises are not taxed. Moreover, these firms create unfair competition with local firms, exploit local labor, and are weakly integrated into the local economy (Razafindrakoto and Roubaud 2002; Kusago and Tzannatos 1998). However, salaries and working conditions are significantly better than in other sectors (Roubaud, and Randrianasolo 2004.and Razafindrakoto and Roubaud 2002).

The establishment of the EPZ has been an economic success story in Madagascar. However, improvements will need to be made if growth is to continue. These include increasing competitiveness by raising labor productivity, reducing the cost of industrial facilities, lowering transport costs, improving the functioning of the custom services, and integrating vertically along the value chain (World Bank 2004a).

Expansion of manufactured exports requires relatively large firms, using relatively large amounts of labor to capital, combined with technical knowledge to exploit export opportunities. Some countries in Africa have succeeded in boosting exports, but success has remained too rare to improve the well-being of most Africans. Private formal sector employment has grown, but it has not grown as rapidly as the labor force. Private wage employment in the formal sector is the surest route to income security for African households. The challenge of labor demand in Sub-Saharan Africa must be seen as the need to expand formal sector employment opportunities.

THE POTENTIAL OF INDUSTRY AND MANUFACTURING TO RAISE WAGES

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 industrial output has been a key element in the successful transformation of most economies that have seen a sustained rise in per capita income (the most recent example is the newly industrialized countries). The ability of the industrial sector to grow dictates the rate at which new jobs can be created in this sector.

Examination of the share of industry value added in GDP in 12 African countries reveals several important patterns.[3] First, there is substantial heterogeneity in industrial intensity across countries. Botswana had by far the highest share of industry in total value added in 2002 (48 percent)—almost 20 percentage points higher than the Sub-Saharan Africa or world average. At the other end of the spectrum, industry accounted for just 13 percent of value added in Madagascar in 2002. The share of industry is relatively high in Mauritius and South Africa and relatively low in Kenya and Tanzania. Industrial intensity appears to be higher among countries with relatively high incomes, an issue addressed below.

Second, the share of industry is very volatile in some countries and strikingly stable in others. Countries relying heavily on the processing of natural resources are exposed to world market fluctuations in the prices and demand for such products.

Third, while in most countries the share of industry fell over the past decade; both Ghana and Uganda saw long-term increases in the share of industry in total value added. Madagascar and Mozambique appeared to be at turning points.

African performance has been particularly poor in manufacturing over the past few decades.[4] In 2001 the average share of industry value added in GDP in Sub-Saharan Africa was roughly five percentage points lower than the world average. There is considerable heterogeneity, however, with the highest share of manufacturing in total value added (Mauritius, at 23 percent) exceeding the world average, and the lowest share (Nigeria, at a mere 4 percent) well below it. Botswana's share of manufacturing is only 5 percent, confirming that its industrial sector is made up mainly of nonmanufacturing activities (mostly mining).

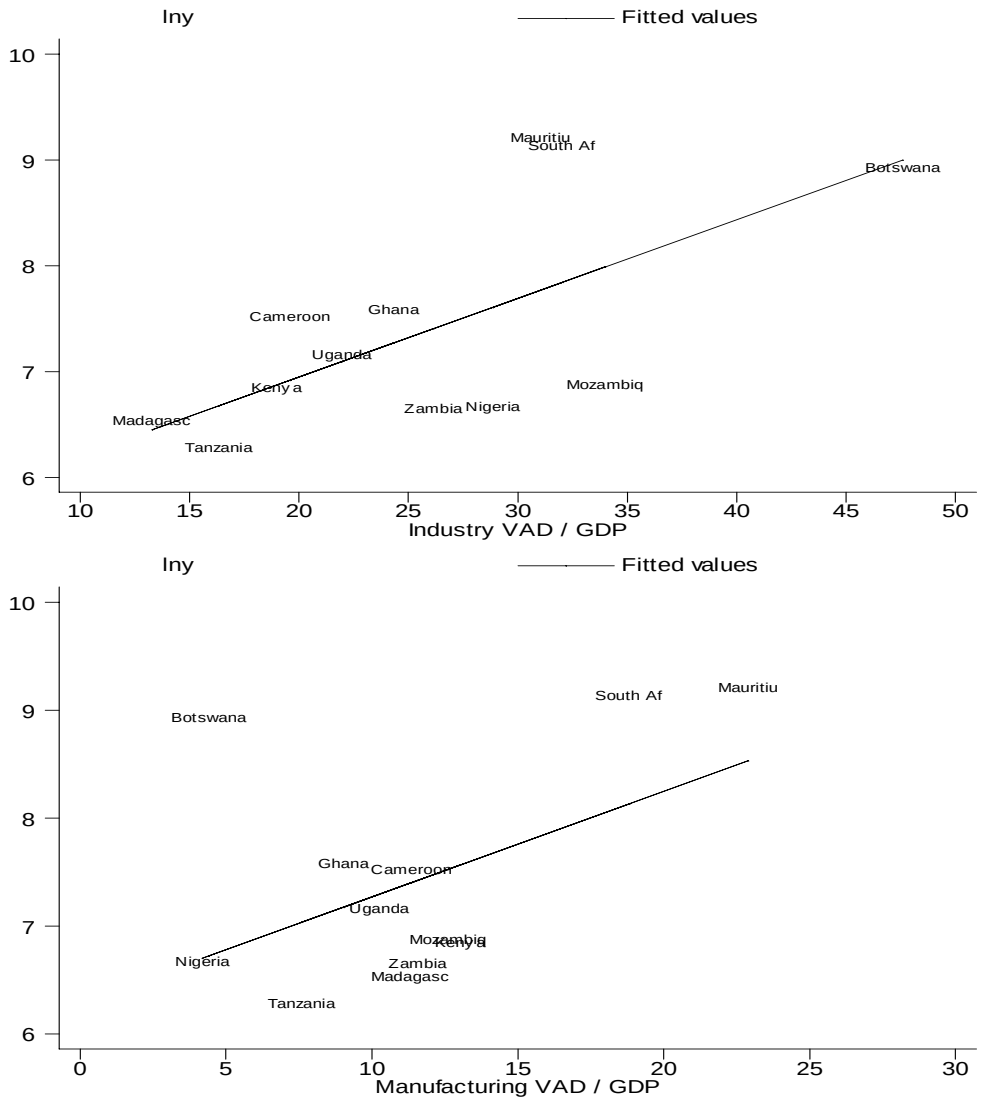
Countries vary widely in the relative size of their industry and manufacturing sectors. Does this proportion affect income? The relative size of both industry and manufacturing are positively correlated with per capita income (figure 3)**.** The sample is very small, and the correlation cannot be interpreted as indicating a causal effect. But it is nevertheless striking that a nonnegligible share of the variation in per capita income

[3] Industry includes mining, manufacturing, construction, electricity, water, and gas. The counties studied are Bostwana, Cameroon, Ghana, Kenya, Madagascar, Mauritius, Mozambique, Nigeria, South Africa, Tanzania, Uganda, and Zambia.

[4] Although the average manufacturing shares are low and declining in most of the sample countries, it is rising in a few. In Uganda the manufacturing share rose from 6 percent in 1990 to 10 percent in 2002; in Madagascar and Mozambique the share grew from 8 percent in 1994 to more than 11 percent in 2002.

across this set of countries is systematically related to the variation across the countries in these shares: the *R*-squared is 0.43 in the industry regression and 0.24 in the manufacturing regression (dropping Botswana from the sample, the *R*-squared in the manufacturing regression rises to 0.69).

Figure 3. The Intensity of Industry and Manufacturing Rises with National Income.



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

2. THE CONSTRAINTS ON EXPORT-LED GROWTH AND WELL-PAID JOBS

Labor markets in many Sub-Saharan African countries failed to create well-paid jobs in the 1990s. The result was rising open unemployment or a rapid expansion of the informal sector. Was a lack of labor market flexibility to blame? Did real wages fail to adjust over time in response to the excess supply of labor or macroeconomic shocks?[5] Were wages unresponsive to high levels of unemployment? Or was the problem the low productivity of workers or a mismatch between graduates' skills and employers' needs? Were constraints on economic growth the real damper on the growth of well-paid employment? This section examines three types of constraints to export-led growth and job creation: wage constraints, educational constraints, and investment constraints.

WAGE CONSTRAINTS

Two principal constraints on wages in African labor markets concern, first, the flexibility with which wages can be adjusted over time to take account of changes in the supply of and demand for labor and, second, the differences in wage levels across different sectors (especially the formal versus informal sectors) and different kinds of enterprises (especially the large versus small firms).

Lack of flexibility

In a flexible labor market with high open unemployment, aggregate real wages decline over time. Views differ over whether African labor markets can be considered flexible in this sense of the term.

Reviewing the Kenyan experience through the two oil shocks, a severe drought in 1984, and subsequent stabilization programs, Milne and Neizert (1994) conclude that wages were flexible: "Through the adjustment phase, real wages in all modern sectors fell, although the drop in the public sector was more pronounced. Indeed, real wage rates seem to have provided the major part of the adjustment, as there do not appear to have been major changes in the urban unemployment rate" (p. 454).

Beaudry and Sowa (1994) note that wage differentials between sectors in Ghana were fairly quick to respond to demand shifts (toward agriculture and industry, away from services) brought about by structural adjustment and that "a flexible labor market probably helped achieve the macroeconomic improvements observed in Ghana during the 1980s" (p. 402).

Rama (2000) concludes that wages in the CFA franc economies showed some evidence of rigidity, in that they closely tracked public sector wages and consumer price indexes. He finds that between 1985 and 1993 wages in these countries remained considerably higher than could be explained by the countries' level of development,

[5] The need for downward flexibility of real wages to achieve full employment in response to budget cuts and other demand reductions was a crucial feature of structural adjustment programs, as noted by Horton, Mazumdar, and Kanbur (1994).

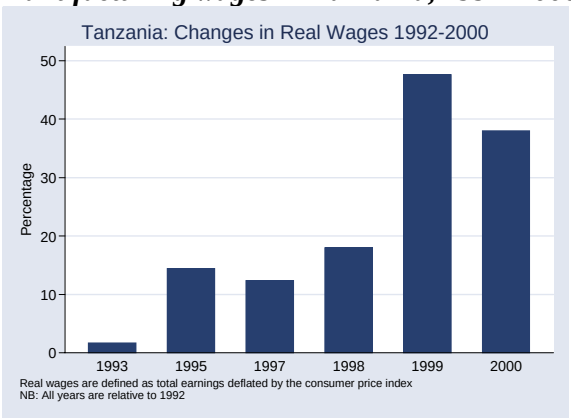
urbanization, industrialization, or human capital intensity. Krishnan, Dercon, and Selassie (1998) show that real wages in the urban Ethiopian labor market have been surprisingly unresponsive to downward pressure from economic reforms, even amid high rates of open unemployment.

Changes in real wages in the manufacturing sectors of Ghana and Tanzania were erratic during the 1990s (figure 4). Manufacturing wages in Ghana fell 30 percent between 1990 and 1995, before rising to end the decade only slightly below their 1992 level. No explanation for this roller coaster ride in real wages has been put forth. In Tanzania the manufacturing sector grew rapidly, with wages in the sector some 40 percent above their 1992 level by 2000.

Figure 4. Real Wages in the Manufacturing Sectors of Ghana and Tanzania Changed Erratically during the 1990s.

A. Real manufacturing wages in Ghana, 1992–99

B. Real manufacturing wages in Tanzania, 1992–2000



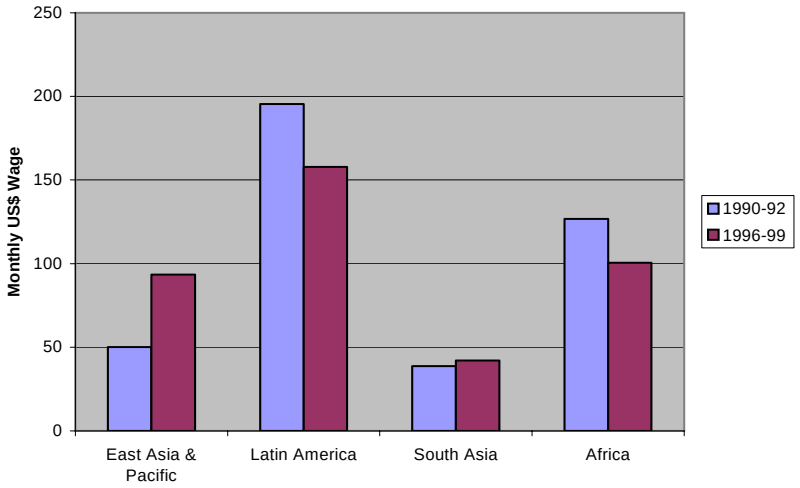
Note: Real wages are defined as total earnings deflated by the consumer price index. Data for Ghana in all years are relative to 1991; data for Tanzania are relative to 1992.
Source:

Thus, African labor markets have been surprisingly flexible, with wages rising and falling erratically at times in the last decade. The fact that very substantial changes in real wages within the manufacturing sector have been observed suggests that any notion

of a fixed real wage is not a useful way of modeling outcomes. It does not rule out the possibility that workers within a firm can resist pressures for declines in wages in the long run. The declines in Ghana occurred in the context of a highly variable rate of inflation. It is possible that the changes in real wages reflect not the flexibility that comes from excess supply pushing down prices but rather the mistakes made by workers in setting their nominal wages when they cannot accurately predict the rate of inflation. Longer time series are needed to confirm whether this is in fact the case.

Comparisons between Africa and other regions reveal that, while average wages in Africa fell during the 1990s, they remain above those in East Asia and the gap increased during the 1990s (Freeman and Oostendorp 2000) (figure 5). These data suggest that average wages in Sub-Saharan Africa remain high relative to the East Asian competitors.

Figure 5. Unskilled Wages Remain much Higher in Africa than in East or South Asia.



Note: Data are based on population-weighted means, which ensures that the data for East Asia are dominated by China.
Source: Freeman and Oostendorp (2000), OWW Database.

Large differences across sectors and firms

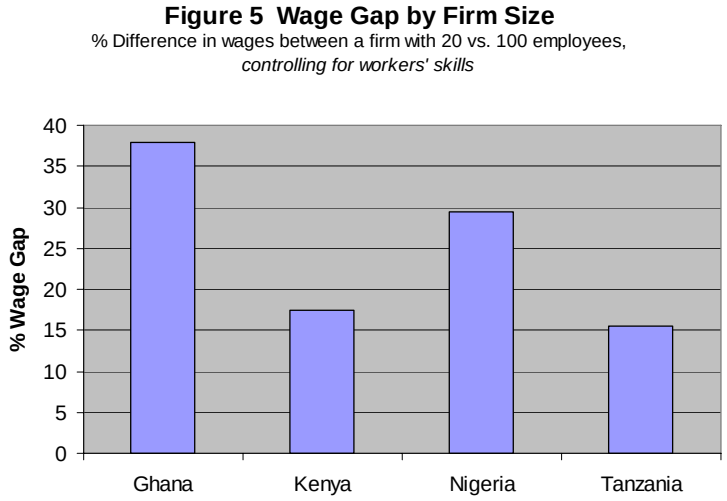
How important is the distinction between the formal and informal sector or between large and small firms for understanding the pattern of wage differentials in African labor markets? The *informal sector* refers to a large range of activities, from urban self-employment through household enterprises to wage employment in small firms.

Lachaud (1995) computed formal sector earnings premia of 60.3 percent for Cameroon, 57.1 percent for Burkina Faso, 40.9 percent for Côte d'Ivoire, and 9.6 percent for Mali (the technique applied takes into account differences in personal characteristics, to rule out the possibility that differences between formal and informal sector wages simply reflect skill differences in each sector). Miller and Vallée (1995) and Vallée and

Thomas (1994) confirm these orders of magnitude for Cameroon; Vijverberg and van der Gaag (1993) confirm them for Côte d'Ivoire. Kingdon and Knight (2004) find that 50–64 percent of the large earnings difference between the formal and informal sectors in South Africa remain after controlling for characteristics.

A closely related approach is to compare the wages of similar workers in establishments of varying size. Firm size can provide a clearer basis for comparison than the formal-informal distinction, which is often inconsistently defined across studies. Figure 6 shows the differential between the wages earned by a production worker with a given set of human capital characteristics who works for a firm with 20 employees and a similar worker who works for a firm with 100 employees. It reveals that wage differences between large- and small-firm sectors are uniformly large across the four countries examined. These differentials significantly exceed those observed in developed economies.

Figure 6. Workers with Similar Skills Earn more at Large Firms



Note: Figure shows percentage difference in wages between workers with comparable skills in firms with 20 and firms with 100 employees.

Söderbom, Teal, and Wambugu (forthcoming) show that this size effect is due only in small part to unobserved skills. Controlling for all time-invariant aspects of both the firm and the worker, changes in the size of the firm lead to increases in earnings. This firm-size effect on wages is consistent with a wide range of possible explanations, including aspects of efficiency wages and bargaining. Several of these possible explanations are examined below.

In their analysis of wage gaps in Cameroon, Thomas and Vallée (1996) list six possible causes of labor market segmentation in Africa (that is, high formal sector wages that are not explained by workers' skills and productivity):

- Trade unions may be present in the formal sector.
- Minimum wages and other labor regulations may dictate wage levels in the formal sector.

- Monopoly rents accrue to formal sector firms, which are insulated from competition by the regulatory structure; these rents may be shared with employees through a bargaining process.
- Productivity may be higher in the formal sector, because it may be worthwhile for only the most able managers to bear the expense of formal sector registration.
- Because larger size is often associated with higher turnover and monitoring costs, formal firms may pay efficiency wages to retain employees and increase productivity.
- Firms may discriminate based on criteria that are not related to productivity, such as gender or ethnicity.

The source of wage differentials and labor market segmentation is a matter of contentious debate, because of the implications for policy. If high formal sector wages simply reflect the greater human capital and productivity of workers who secure these jobs, then the lack of formal sector labor demand in many African economies can be directly attributed to a shortage of skilled labor. If high wages in the formal sector are attributable to unions or government regulations, stimulating labor demand will require not an increase in skills but reforms in labor market institutions. Possible factors—the effects of trade unions, minimum wage rates, hiring and firing restrictions, rent-seeking, organizational structure, and efficiency wages—are examined below.

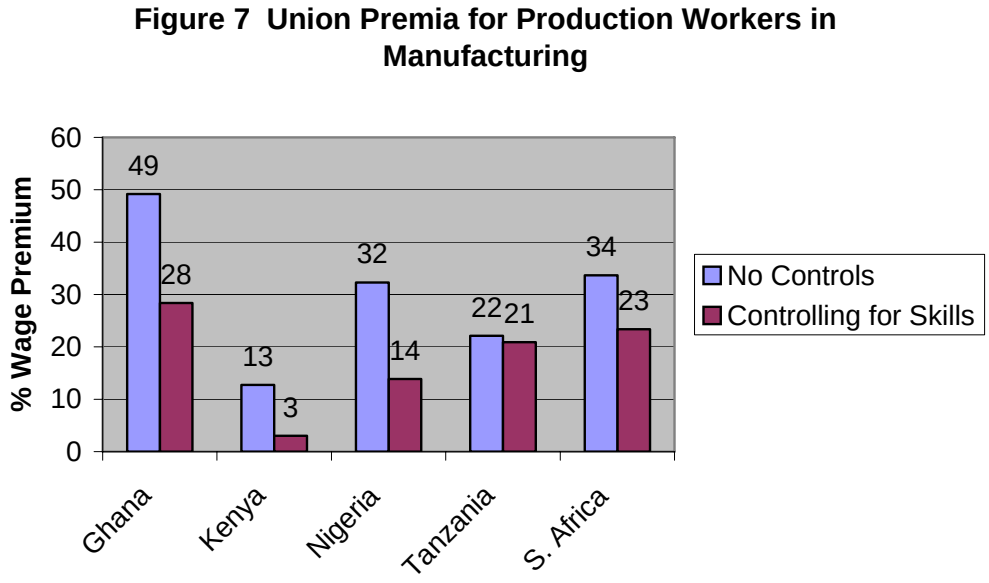
In sum, the tendency for large, export-oriented firms to face significantly higher labor costs than their smaller, informal counterparts is a source of severe allocative inefficiency. More important, this wage gap is a major obstacle to export-oriented growth on the continent.

Trade unions. Unions could affect two separate dimensions of labor flexibility: wage adjustments over time and labor segmentation between sectors. In his analysis of wage misalignment in CFA countries, Rama (2000) concludes that "private sector unions… seemed more instrumental in achieving wage moderation than wage drift. Their members usually had lower wages than similar, nonunionized workers, which probably reflects the 'subordinate' nature of the labor movement." His observation is based on his review of studies measuring union wage premia, several of which report a negative union wage premium in CFA countries.

Can unions explain labor market segmentation between firms or sectors? Schultz and Mwabu (1998) suggest that union premium rose markedly between 1995 and 1999. Even controlling for industry, the union premium in 1999 was 54 percent, far higher than that observed in OECD countries. Controlling for firm size, Blunch and Verner (2004) do not find a significant wage effect from unionization for workers as a whole, although they find a 34 percent premium for workers in the ^{t} tenth percentile.

Research based on surveys carried out in Africa's manufacturing sector shows that the union premia are very large by international standards (figure 7). These results suggest that unions play an important role in accounting for difference between the wages of workers with similar levels of human capital. Systematic identification of the effect of unions is complicated, however, and further research in this area should focus on disentangling potentially correlated factors, as union status, regulatory coverage, firm size, worker skills, and capital intensity.

Figure 7. Manufacturing workers who belong to unions earn more than workers who do not.



Minimum wage requirements. Many African governments used minimum wage to raise urban wages immediately after independence. Their relevance to wage-setting behavior has declined considerably in recent decades. Minimum wages have generally been flexible in Africa, with periods of real wage decline outnumbering periods of real wage increases for a subset of countries. For the CFA countries, Rama (2000) finds that minimum wages were downwardly flexible and failed to account for wage misalignment during the 1990s.

Hiring and firing restrictions. In addition to producing wage rigidity, labor market regulations may lead to inflexibility in employment. Job security regulations limiting the ability of firms to lay off workers during an economic downturn transform labor into a long-term investment. Fallon and Lucas (1993) find no significant effect of legislation on the speed of adjustment, wages, or hours worked in India and Zimbabwe. Rather, the main impact seems to fall on the level of labor demand, with the new regulations reducing the number of workers employed in a sizable share of the industries observed.

It is important to keep in mind that average numbers mask large differences in the labor market conditions faced by firms of varying size, ownership, and location. In Ghana, the largest firms tend to be more encumbered by regulation in general and layoff restrictions in particular.

Efficiency wages, organizational structure, and rent-seeking. In efficiency wage models, a link between wages and effort or productivity may arise for a variety of reasons, including the increased fear of dismissal when wages are high (Shapiro and Stiglitz 1974) and a tendency for better-paid workers to be better nourished and in better health (Dasgupta and Ray 1986).

One implication of efficiency wages is that labor management may be a more acute problem for African firms than their competitors elsewhere. Fafchamps and Söderbom (2004) find that the wage elasticity of effort is about 0.45, much lower than the 0.74 in Morocco. A second implication is that the high wages observed in formal sector firms need not depend on labor market institutions, but may instead be a necessary result of the firms' organizational structure, therefore breaking the link between labor market "flexibility" and job creation.

Rent-seeking models attribute wage differentials to a process of bargaining. Evidence of rent-sharing effects on wages has been found for a wide range of countries, including Ghana (Teal 1996) and Zimbabwe (Velenchik 1997). Furthermore, Blanchflower and others (1994) indicate a role for bargaining even in the absence of unions.

EDUCATION CONSTRAINTS

Possibly the central fact about labor markets in Africa, and the fact most often used to explain low wages, is Africa's low skill levels. The percentage of educated workers in Africa is lower than in any other region of the world. In 1990 only 25 percent of the African population 15 or older had completed primary school (the comparable figures are 32 percent in South Asia and 85 percent in East Asia). At the secondary level, the gap is even larger: in 1990 only 4 percent of the African population 15 and older had completed secondary education (the comparable figures are 10 percent in South Asia and 50 percent in East Asia (Söderbom and Teal 2003).

High returns only at high levels

Even though African skill levels may be relatively low in international terms, there will not be a skill shortage—and consequent skill premia in wages—unless the demand for skills exceeds the supply. These skill premia can be observed from two complementary perspectives: the additional earnings accruing to skilled workers and the contribution of workers' skills to firm productivity.

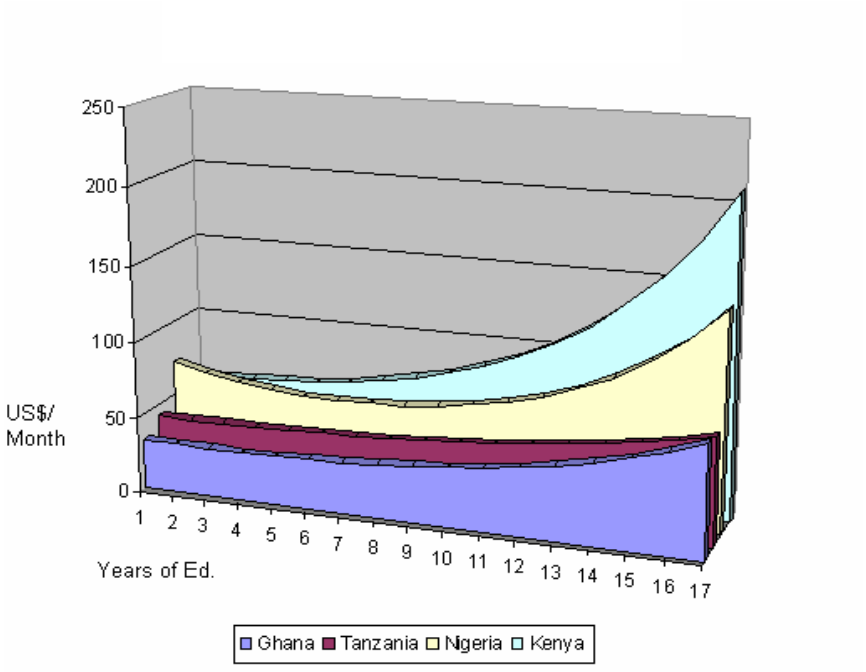
For most individuals in Sub-Saharan Africa, investments in education bring high returns only at the highest levels of education. By some measures, the skill premia paid to individuals have been falling over part of the skill spectrum. Appleton, Hoddinott, and MacKinnon (1996) conclude that the returns to education rise with its level.[6] This is consistent with the notion that the supply of skills in Africa is higher than the demand for the skills acquired in primary education.

This same pattern of increasing returns is observed in data on manufacturing workers collected by the Regional Program on Enterprise Development and the Center for the Study of African Economies (figure 8). The returns are convex in each country,

[6] Other studies that find increasing returns to education include van der Gaag and Vijverberg (1989) for Côte d'Ivoire; Moll (1992) and Fallon and Lucas (1996) for South Africa; Mazumdar (1994) for Kenya, Zambia, and Zimbabwe; Jensen and Westergaard-Nielsen (1996) for Zambia; Velenchik (1994) for Zimbabwe; and Söderbom and others (2003) for Kenya and Tanzania. Schultz (2004) reports that most of the annual returns for primary education are in the single-digit range and are monotonically increasing for almost every subgroup.

particularly in Kenya and Nigeria, where higher levels of education reap large returns in the manufacturing labor market. The private wage return to the first six years of schooling is nearly zero.

Figure 8. Education Yields Significant Private Returns only after Completion of Secondary School



What are the policy implications of the emerging consensus that the private returns to education in Africa are low in the early years of schooling and increase with the level of education? First, this evidence shows that the market for human capital is central in explaining the wages of the highest-income workers. However, at the low skill levels observed among production workers in manufacturing and other industries, skill differences appear to play a relatively small role in explaining wage differentials. This is not to say that educational expansion is not an important ingredient in raising overall productivity and wages. It means simply that educational differences cannot explain away the distortions in labor costs between firms.

Second, the policy recommendation that primary education should be the priority in poor countries is often based on the idea that a plotted curve of earnings against years of schooling will be concave, with a rapidly rising payoff to basic training. Evidence of convexity and low returns at low levels undermines this recommendation. The implication is not that poor countries should invest less in primary education. A large literature documents the nonpecuniary benefits of primary education in developing countries, particularly for girls. Moreover, only with sound primary education will students be able to proceed to the levels of education associated with higher returns—the educational level that meets the demand expressed by manufacturing firms. Convexity, however, does imply that the effect of education policies designed to motivate children

who otherwise would have no or little education to obtain only a modestly higher amount will have a small aggregate effect on income and poverty.

One of the puzzles in the development literature is why the expansion of education in Africa during the past two decades has generated so little growth, while the average returns to education appear high. The convexity of returns to education reconciles these results if, as is probably the case, the expansion of education has occurred primarily on relatively flat segments of the earnings function.

Low demand for skilled labor

Like demand for labor, the demand for skills is a derived demand and depends ultimately on the production decisions of firms. The most direct way to evaluate the presence of skill shortages in Africa is by analyzing firm-level production. Workers' skills can be treated as a factor input, whose return is directly comparable with the returns to other factors, including physical capital.

This is the approach pursued by Bigsten and others (2000), who estimate firm-level production functions using panel data from the manufacturing sectors in Cameroon, Ghana, Kenya, Zambia, and Zimbabwe. They find only 5 percent average rates of return to education in the production function. This is somewhat lower than the average of 9 percent they find using an individual-based Mincerian specification, but it is still well below the average return to physical capital in these five countries of about 30 percent. Teal (2000) finds evidence that the demand for skilled labor in Ghanain firms is falling, a result wholly consistent with the low investment levels documented for such firms.

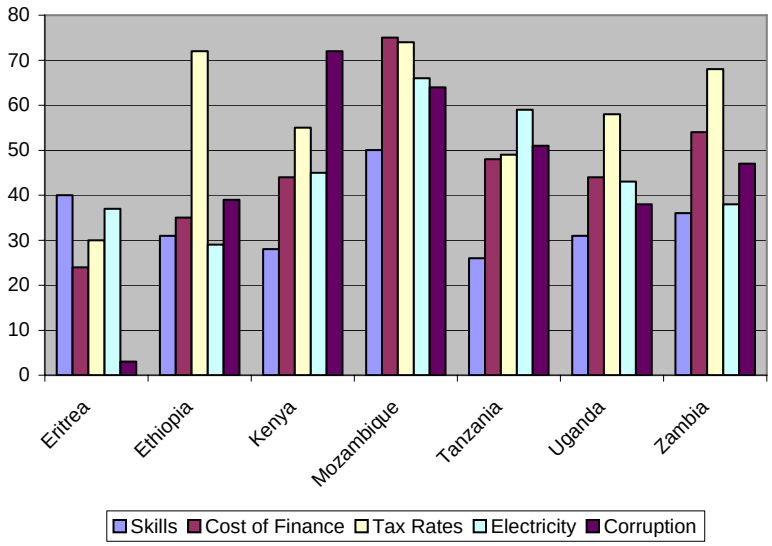
Low quality of schools

The discussion of returns to education implicitly assumes that an additional year of schooling yields some given quantity of additional skills or human capital. In fact, the quality of education varies dramatically across countries and across schools within countries or regions. Macro evidence, such as that presented by Hanushek and Kimbo (2000), shows that output-based measures of schooling quality (such as standardized test scores) can be directly linked to countries' economic growth. Using data from Ghana, Glewwe (1996) estimates returns to improving school quality at 24–29 percent for wage earners.

Low relevance of skills

Skills are only one of several dimensions of productivity and labor competitiveness. Eifert and Ramachandran (2004) find that in almost every African country surveyed firms report skill constraints as the least severe obstacles they face, after the access to reliable infrastructure, the cost of finance, and the tax burden (figure 9). Thus while changing skills is one way to improve productivity, it would be unwise to focus exclusively on skills. Moreover, achieving productivity gains through skills increases will not necessarily increase the demand for low-skill labor.

Figure 9. Lack of Skills is a Constraint in Africa, but other Obstacles—such as Corruption and High Tax Rates—are more severe.



INVESTMENT CONSTRAINTS

In recent years, interest has grown in documenting the role of the investment climate[7] (Batra, Kaufmann, and Stone 2003). The basic link to job creation is that a poor investment climate erodes the return on investment, dissuading firms from making investments that would have generated new jobs.

This section examines 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 countries are spectacular success stories, as well as mediocre economic performers, relatively large economies and very small ones, countries that have experienced political turmoil and countries that have seen long-term political stability, countries in which rapid economic and political change is taking place and countries in which the status quo is firmly entrenched. The section draws heavily on firm-level data, which are available for about half of these countries. The reason is simple: studying the firm is the best way to identify constraints to investment and key obstacles to job creation.

[7]Constructing and improving data on the quality of the investment climate is a very active area of research. See the Foreign Investment Advisory Service (FIAS) website at www.fias.net/investment_climate.html.

Weak Regulatory Environment

The state of the regulatory environment is reflected in three indicators: protection of investors, enforcement of contracts, and access to credit (table 1). The first measure focuses on disclosure of ownership and financial information to current and potential investors. The index ranges from 0 to 7, with higher values indicating more disclosure.[8] The average score for Sub-Saharan Africa is 2.1—far lower than the average of 5.6 for countries in the Organisation for Economic Co-operation and Development (OECD). Disclosure appears to be particularly weak in Cameroon, Madagascar, Tanzania, and Zambia. Surprisingly, Nigeria and South Africa have higher scores than the OECD average.

Table 1. Indicators of the Regulatory Environment in Selected African Countries

Country	*Disclosure of ownership and financial information to current and potential investors*	*Days required to resolve contract disputes*	*Cost of creating collateral (percent of per capita income)*
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
Region			
Sub-Saharan Africa	2.1	434	41.8
OECD	5.6	229	5.2

The second variable measures the number of days it takes to resolve a business dispute in court, counted from the moment the plaintiff files a lawsuit in court until settlement or payment (see Djankov and others 2003). This indicator varies widely across the sample, and the average for Sub-Saharan Africa is almost twice as high as the average for the OECD. Bigsten and others (2000) show that African firms largely steer clear of the courts as a way of resolving business disputes, relying primarily on negotiation. Only large firms file lawsuits—and only after negotiations have failed.

The third variable in table 1 refers to the cost of creating the collateral to secure formal loans, expressed as a percentage of per capita income (the higher this percentage, the less accessible formal credit is). This indicator is based on collateral and insolvency laws and responses to a survey on secured transactions laws. Costs include taxes, notary fees, and duties associated with creating a security right and registering it in the collateral registry (where such a registry exists). The Sub-Saharan Africa average is eight times that of the OECD, indicating that access to formal credit is indeed associated with high costs.

[8] The methodology is developed in Djankov and others (forthcoming).

Inadequate Infrastructure

Infrastructure includes a range of services important for business, such as transportation, telecommunications, waste disposal, and the supply of electricity and water. Despite a high ratio of public expenditure to GDP in most African countries, Africa's infrastructure remains poor (Collier and Gunning 1999). Transport costs are considerably higher than in other regions, electricity costs are high, and water supplies are less reliable. As can be observed in table 2, there is substantial variation in the state of infrastructure across the countries, as the comparison of Mauritius and Uganda illustrates.

Table 2. Indicators of Infrastructure in Selected African Countries, 1996–2000

Country	*Electric power transmission and distribution losses (percent of output)*	*Telephone mainlines (per 1,000 people)*	*Paved roads (kilometers per million people)*	*Paved roads (percent of total roads)*	*Improved water source (percent of population with access)*	*Rail lines (kilometers per million people)*	*Percentage of firms ranking infra-structure as a moderate or major obstacle*
Botswana	—	66	3,119	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	1,578	96	100	—	—
Mozambique	24	5	339	19	57	—	—
Nigeria	37	4	452	28	62	28	98
South Africa	8	116	1,709	20	86	515	14
Tanzania	15	4	117	4	68	81	88
Uganda		3	80	7	52	11	70
Zambia	2	8	3,139	62	64	129	76
Region							
OECD	6	569	12,279	88	—	375	22
Sub-Saharan Africa	11	13	369	14	58	—	66

— Not available.

Note: The figures in the first six columns are mean values over the 1996–2000 period.

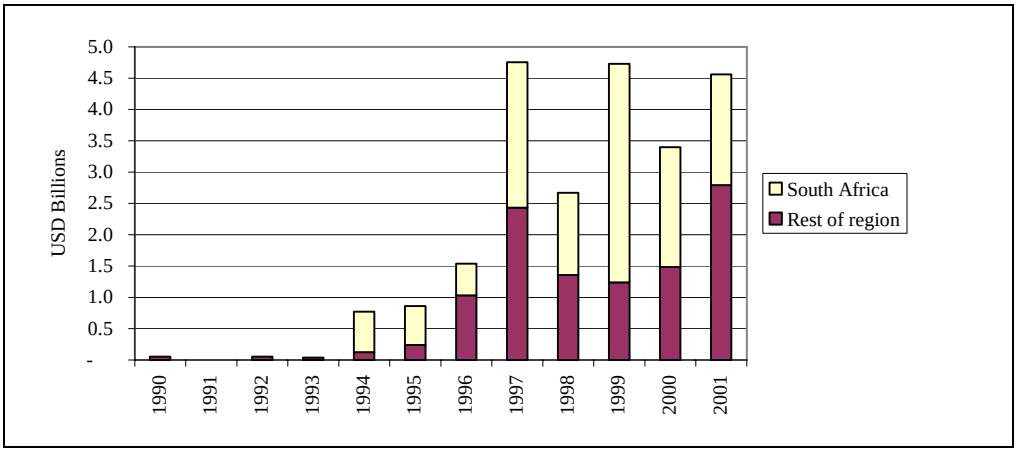
Source: Calculated from World Bank (2004b). The figures in the right-hand column are from Batra, Kaufmann, and Stone (2003).

Poor infrastructure is likely to be a major factor in explaining the poor economic performance of most African countries over the past few decades.[9] Industrial firms are particularly intensive users of infrastructure services, so this sector may have been particularly hampered by poor infrastructure. African firms rate infrastructure as one of the most significant constraints (Batra, Kaufmann, and Stone 2003). Entrepreneurs respond to deficient infrastructure by focusing on the local market and using inputs supplied locally. Therefore, a firms' ability to export is likely to suffer from poor infrastructure.

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 accounts for a large part of the declining trend in total factor productivity in manufacturing in Senegal. Lee and Anas (1992) suggest that unreliable and inaccessible public infrastructure raises unit costs in Nigerian manufacturing firms.

In 2001 the private sector invested about $4.6 billion in infrastructure in Sub-Saharan Africa—a modest $8 per capita—and most of that spending was in South Africa. Nevertheless, the trend is positive (figure 10). Private infrastructure investment has been concentrated in telecommunications, a sector in which incumbent state-owned operators have been divested and mobile licenses issued to private operators, who now supply a rapidly growing market.

Figure 10. Private Iinvestment in African Infrastructure Projects Rose during the 1990s.



[9] Cross-country regressions suggest a strong correlation between the availability of certain types of infrastructure (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) shows that total factor productivity is correlated with various investment climate indicators measuring the time or monetary cost of different bottlenecks .

Prohibitive Entry Costs

Entering the export market for the first time is likely to be costly (Roberts and Tybout 1997). It may, for example, be necessary to set up a marketing department to investigate marketing channels and meet export orders. It seems likely that the quality of the investment climate has a bearing on the magnitude of entry costs, but no rigorous empirical evidence supports this assertion. Roberts and Tybout argue that indirect evidence of costly entry can be obtained by testing for the 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 export market independently of whether they have exported in the past. If there are significant entry costs, however, 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. Testing their theory, Roberts and Tybout find strong evidence that previous exporters are more likely to export than nonexporters, suggesting the presence of significant fixed costs.

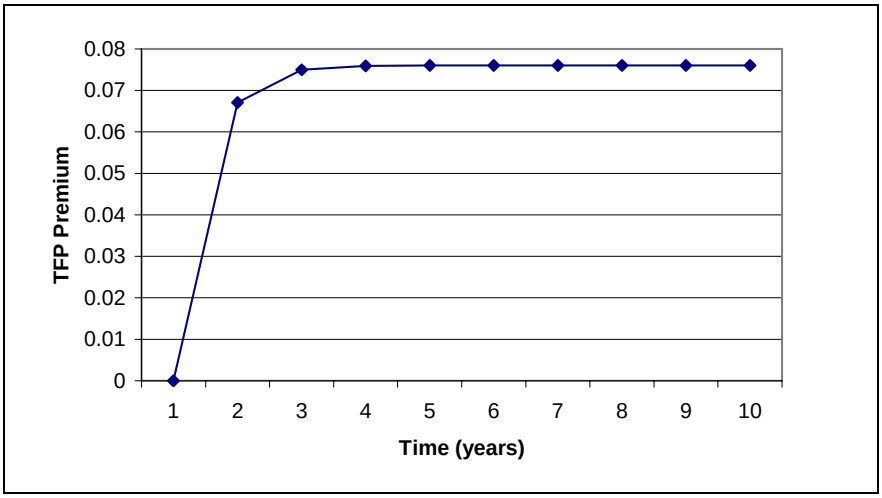
Bigsten and others (2004a) find that past export status has a significant effect on the propensity to export. The magnitude of this effect is large: for the average firm that did some exporting in the previous period, the likelihood of exporting in the current period is about 0.57, while the likelihood of exporting for an otherwise identical firm that did not export in the previous period is 0.18. This finding has at least two important policy implications. First, if firms can be induced to enter an export market (through incentives, for example); they are likely to export for some time. Second, large entry costs imply that some firms that are internationally competitive do not export. Reducing or eliminating entry costs would provide these firms with access to larger markets.

Lack of Cost Efficiency

A second factor that determines whether a firm will export is its cost efficiency. Clerides, Lach, and Tybout (1998) find that firms with marginal costs below some threshold choose to export, while firms with marginal costs above the threshold do not. They predict that relatively efficient firms will self-select into the export market. In Africa, however, the evidence of self-selection effects is relatively weak. Bigsten and others (2004a) suggest that causality runs in the other direction, that is, from exporting to efficiency.

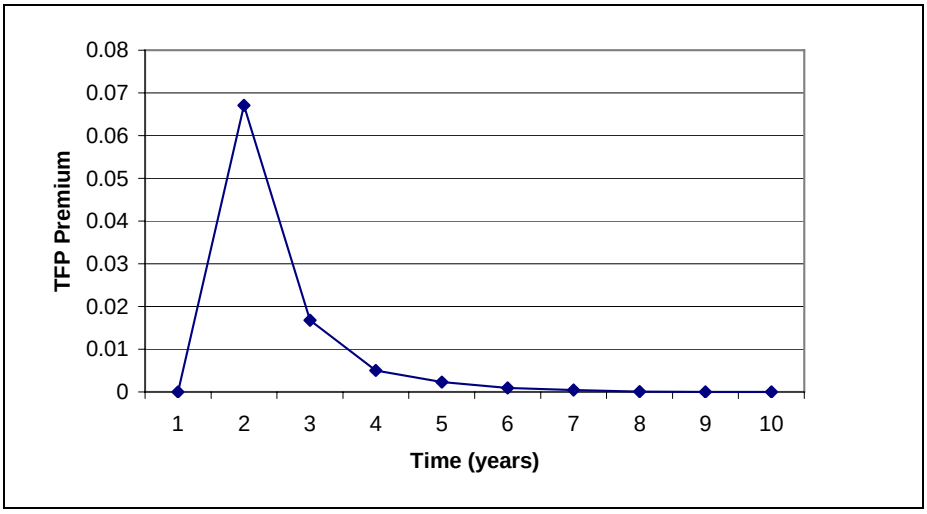
From a policy perspective, whether or not firms in developing countries “learn” from exporting is an important issue. If learning takes place, the competitiveness gap could be reduced endogenously through increased international trade. Bigsten and others (2004a) find relatively strong evidence of learning effects, with exporting leading to increases in total factor productivity of 7 percent in subsequent periods (figure 11). If the firm continues to export, total factor productivity increases 8 percent in the long run. Such a positive effect on productivity is likely to translate into a desire to invest. If the firm stops exporting after a single period, the gains in productivity brought about by the brief foray into the export market are completely eroded after six years (figure 12). One possible explanation for the effect of learning from exporting in Africa is that the potential gains from exporting are large there because of high trade restrictions in the past and a large technological gap with respect to developed countries.

Figure 11. Entering and Remaining in the Export Market causes Total Factor Productivity to Surge.



Source: Authors' calculations based on results in Bigsten and others (2004a).

Figure 12. Entering but then Exiting the Export Market has no Long-term effect on Total Factor Productivity.



Source: Authors' calculations based on results in Bigsten and others (2004a).

High Risk

Africa is a risky region for investors. One aspect of uncertainty is the risk of corporate payment default, as rated by Coface, France's export credit underwriter.[10] Grade C indicates that a "very unsteady political and economic environment could deteriorate an already bad payment record." Grade D indicates "the high risk profile of a country's economic and political environment will further worsen a generally very bad payment record." Seventy percent of the 54 African countries rated in the survey fall into category C or D, by far the highest proportion of any region, and corporate default risk in

[10] For details on the country rating methodology, see http://www.trading-safely.com.

Africa is higher than in any other region. The Institutional Investor index of the risk of default tells a similar story: between 1979 and 1996, Africa was the world's riskiest region (Collier and Pattillo 2000).

How does the high level of risk in Africa affect investment behavior? Theories of investment under uncertainty stress that, because capital expenditures are largely "sunk" or irreversible, firms facing a high level of risk may adopt a wait-and-see approach toward new investment projects. Models of investment under irreversibility predict that investment will be slower to respond to demand shocks if uncertainty is 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 Institutional Investor index.

Other studies, such as Aizenman and Marion (1999), Pattillo (1998), and Darku (2001) provide direct evidence that uncertainty has a negative effect on investment. 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 and others (1999) argue that this is indeed the case. Using data from the Regional Program on Enterprise Development on conditions in Cameroon, Ghana, Kenya, and Zimbabwe in the early and mid-1990s, they report average returns on capital that are much higher than returns in more developed countries. While there is a striking similarity in the average investment rates across all countries, the rates of returns on capital are much higher in Africa than in Europe. The authors infer from this that the cost of capital is relatively high in Africa, a result that is consistent with a negative effect of uncertainty on investment. Reducing uncertainty, or improving the market for second-hand fixed capital, is therefore likely to increase investment.

Fafchamps and Oostendorp (2002) argue that uncertainty is a plausible reason why investment has remained low in Zimbabwe, despite the changes introduced by the structural adjustment program there.

Credit Constraints

Development economists have long held that malfunctioning credit markets hamper growth. African credit markets are the least developed in the world. Firms with profitable investment projects are often unable to obtain external funds to finance their projects. Commonly cited reasons for the weaknesses of African credit markets are imperfect information, cumbersome contract enforcement, and lack of competition among lenders.

Although Africa's credit markets are indeed weak, credit markets become binding constraints only when firms want to invest. If profitable investment opportunities are not available, lack of credit cannot constrain investment. If such opportunities are lacking in Africa, reform of the credit market will not increase investment significantly in the short run.

Bigsten and others (2003) suggest that 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 the previous year. Among those that did apply, the majority obtained them.

Small firms were less likely than larger firms to apply for loans and to have an application approved (table 3).

Table 3. Demand for and Receipt of Credit by Firms in Selected African Countries, by Firm Size

(percentage of all firms in a size category)

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

Note: Data are based on survey data from Burundi, Cameroon, Côte d'Ivoire, Ghana, Kenya, and Zimbabwe.
Source: Bigsten and others (2003).

Of course, a firm may be credit constrained even if it does not apply for a loan. Aware that there are credit constraints, a firm may decide not to apply for a loan to avoid incurring the transactions costs of doing so. Based on information on why firms did not apply for loans, Bigsten and others (2003) identify three groups of firms: those without credit demand (55 percent of all firms), those with credit demand that are credit constrained (33 percent), and those with credit demand that are not credit constrained (12 percent). Across the size distribution, the differences are large. About two-thirds of the microenterprises but only 10 percent of large firms are credit constrained. About two-thirds of large firms and one-third of microenterprises choose not to participate in the credit market. 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, a result consistent with both bias by or higher transactions costs of banks. The size effect is substantial: for a microenterprise to have the same chance a large firm has of obtaining a loan, its return on fixed capital must exceed that of a large firm by more than 200 percentage points.

Habyarimana (2003) estimates that during the three years after the banking crisis, the average annual growth rate of employment among firms that lost a banking relationship was 2.3–4.0 percent lower than the average growth rate of unaffected firms, after controlling for fixed effects on that particular sector, year, and firm. Firms affected by the banking crisis were also more likely to report being credit constrained, suggesting that losing a banking relationship hampers investment. The general picture that emerges from the literature is that credit may not have been a severe constraint on investment in African manufacturing, probably because during this period few firms could identify investment opportunities. This does not mean that the reforms of the financial systems implemented in many African countries in the 1990s were unnecessary. When firms expand, the need for formal borrowing will increase, and the financial reforms may then turn out to have a higher payoff, in both higher investment and more jobs. With hindsight, however, priority should have been given to facilitating exports and productivity growth

rather than credit. This is one example of how getting the reform priorities right is important.

3. THE WAY FORWARD

Poverty reduction in Africa has been held back by decades of stagnant economic growth that has failed to generate enough well-paid jobs to lift the income of workers in Africa's rapidly growing labor force. Weak demand for labor among employers in the formal sector reflects a variety of constraints on wages, education, and investment, including the lack of flexibility in wages across sectors, the shortage of workers with the right skills, the low productivity of labor, the weak investment climate, and the poor quality of infrastructure in most African countries. Only by becoming internationally competitive and exporting more will Africa accelerate its economic growth and create enough formal sector jobs to reduce poverty. To become internationally competitive, African firms must increase productivity.

POLICY IMPLICATIONS

African governments could make a variety of specific policy changes to enable firms to increase productivity, become more competitive, and therefore increase formal sector employment:

- ***Adjust labor market regulations to enable firms to change wage rates in response to demand and productivity shocks***. Decreasing wage rigidity would help to create more jobs and narrow the differences in wage rates across sectors and firm sizes.
- ***Improve the investment climate and infrastructure***. Encouraging more investment to facilitate exports must be a key part of any reform of Africa's private sector:
    - ***Overhaul market institutions***, such as laws, courts, business associations, and lobbies, to better ensure quality control and competitiveness of products, to protect property rights, and to improve enforcement of contracts.
    - ***Encourage innovations in financial institutions***, not just commercial banks, but also insurance and merchant banking, for example, by permitting hire-purchase or leasing of equipment and vehicles and more use of letters of credit, corporate bonds, and hedging instruments to provide alternative forms of finance.
    - ***Improve commercial and business services***, including the provision of warehousing, transport, utilities, auditing, marketing, market prospecting, export promotion, product design, and maintenance.
- ***Focus on the region of the country with the highest potential***. Focusing growth efforts on a specific sector and location saves money and 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.
- ***Invest in manufacturing and agriculture.*** These sectors can produce for the export market, and the potential for positive consequences in related sectors appears significant in most countries.

Adopt new technology and orient investments toward new export markets. Fostering an outward orientation designed to improve competitiveness in global markets must be a key component of African industrial policy. In sum, African economies should pursue policies that increase the skills of the labor force and complement these measures with policies that would facilitate labor demand for such skills—.such as improving the investment climate and enabling wages to be aligned with productivity.

Africa's to-do list is long and may appear daunting. The good news is that not all reforms need to be adopted at once. A sound first step would be to bring down local production costs just enough to make African firms internationally competitive, something that can be accomplished by adopting just a few reforms. The fundamental point is that Africa must build on its strengths and relax the wage, education, and investment policies that are now constraining growth. African manufacturing firms have the potential to do well internationally. In recent years, while most firms may have experienced limited success, some have performed very well. These tended to be firms that do new things, with a scientific approach to business and state-of–the-art technology. They are often exporters. Policies that provide incentives and means to firms to adopt an export-oriented, scientific strategy are the most likely to succeed in enhancing competitiveness and generating more well-paid jobs in the formal sector. In contrast, continuing the status quo, in which firms simply aim to supply the small domestic market with basic and cheap products, will not generate the large number of new jobs needed to eradicate poverty.

FUTURE RESEARCH

The rapid increase in the number of firm and household datasets available to researchers over the past decade has improved the understanding of African labor markets. Important knowledge gaps remain, however. Questions for future research include the following:

- ***Why are wages so closely linked to firm size in Africa?*** Both efficiency wage and bargaining interpretations have been put forth to explain the correlation. Determining which of these explanations is correct has important policy implications.
- ***How and when do wages adjust in response to excess labor supply?*** As a first step, research should investigate how flexible other African labor markets are.
- ***What are the microeconomic determinants of flexible wage adjustment?*** 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 long time periods.
- ***What determines the premia on trade union wages?*** Why do these premia differ so much across countries, and how do they change over time? Answering these questions will require empirical analysis that disentangles individual worker attributes from firm and union effects. Doing so will require data that match firms and workers over time, tracking individuals remaining in a given job and those moving across firms.
- ***What are the dynamics of returns to skills?*** There is some evidence that the return to skills have been changing. Firm-level data suggest increasing convexity in the Mincerian returns to skills. Does this reflect falling returns at the lower end of the distribution or rapid rises at the upper end? Evidence is limited on this point, which is

critical to understanding how the increased supply of skilled labor is interacting with demand. Limited investment is likely to lead to limited growth in the demand for skilled labor. There are many other dimensions to these skills, but little is known about how these dimensions have been changing. The recently collected data on labor markets make it possible to investigate these issues.

- ***How does the business environment affect firm performance?*** Which aspects of the investment climate are the most important constraints? How important are these constraints relative to other factors, such as labor costs? Measurement and methodological problems—such as the discrepancy between objective and subjective measures—need to be analyzed.

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