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Development as Diffusion: Manufacturing Productivity and Africa's Missing Middle

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Abstract and Keywords

This chapter considers economic development of sub-Saharan Africa from the perspective of slow convergence of productivity, both across sectors and across firms within sectors. Why have “productivity enclaves,” islands of high productivity in a sea of smaller low-productivity firms, not diffused more rapidly? Three sets of factors are summarized and analyzed: first, the poor business climate, which constraints the allocation of production factors between sectors and firms. Second, the complex political economy of business-government relations in Africa's small economies. Third, the distribution of firm capabilities. The roots for these factors lie in Africa's geography and its distinctive history, including the legacy of its colonial period on state formation and market structure.

Keywords: productivity, manufacturing, dualism, firms, Africa

7.1 Introduction

THIS chapter considers the economic development of sub-Saharan Africa¹ from the perspective of slow convergence of productivity, both across sectors and across firms within sectors. Why have “productivity enclaves,” islands of high productivity in a sea of smaller low-productivity firms, not diffused more rapidly to create the “middle” so frequently observed to be missing in Africa's economies? Why have productive firms not led a process of equalizing growth, absorbing land and labor to employ a larger share of the workforce? At Africa's current rates of formal job creation, low-productivity service

and largely informal household businesses will need to keep absorbing workers indefinitely (Fox and Gaal 2008).

Development economists have long recognized that large cross-country differences in output per capita between rich and poor countries cannot be explained simply by varied accumulation of physical and human capital. Instead, they largely reflect differences in an unmeasured productivity residual, usually expressed as total factor productivity (TFP). Efforts to explain large differences in levels and change of this residual have moved beyond analysis at the aggregate level to include studies of productivity differences between sectors and, more recently, between heterogeneous firms within single sectors.

(p. 116) In a productivity-centered view of economic development, dating back at least to Clark (1940) and Lewis (1954), progress is marked by a process of convergence. Production factors, notably labor but also capital and land, migrate from “traditional” low-productivity sectors and firms towards “modern” or higher-productivity activities. In this chapter, we take stock of the literature and see how African economies have fared in this process. We focus on the manufacturing sector and on firms within the manufacturing sector, because its growth has long been argued to play a special role in this convergence process (Kaldor 1966; Cornwall 1977; Rodrik 2013). That does not mean, however, that firms in other high-productivity sectors, particularly services, should be neglected.

Seeing economic development simply as a process of factor allocation assigns a somewhat passive role to the firms and entrepreneurs expected to grow the modern parts of the economy. Convergence towards the upper end of the productivity spectrum can equally be seen as a process of *diffusion*, wherein the economic agents driving the high-productivity parts of the economy actively extend the reach and scope of their businesses until they encompass the bulk of the economy—and ultimately increase economic growth and output per capita. Who are these agents? How do they obtain the capital and the capabilities, including skills, knowledge, and management capacity to build and grow high-productivity firms? How do the business environment and the political economy of state–business relations in Africa affect their incentives to compete, grow, and invest—domestically and across borders in Africa? Can these factors help explain the “missing middle” of Africa’s economies?

We approach these questions with a mix of firm survey results, country case studies, and more anecdotal evidence. Section 2 provides an overview of literature relating economic development to productivity convergence across both sectors and firms. Section 3 considers factors from the literature in the context of Africa. While every country is different, some features are widely shared. In particular, many economies in Africa are still poor, unequal, and slow to initiate a process of convergence at the sector level.

Across firms, we find that the manufacturing sector tends to have a high dispersion of labor productivity.

Section 4 considers three sets of factors that have contributed to slow productivity convergence. They are interrelated, with roots in Africa's distinctive geography as well as the historical processes that have shaped the polities and economies of today.

First, we analyze distortions caused by a poor business climate, which can constrain the allocation of factors between sectors and firms in ways that can delay productivity convergence. In extreme cases, an economy can be reduced to a combination of subsistence activities and a few high-productivity enclaves, such as offshore oil wells that operate within their own security and regulatory environments.

Second, we address the political economy of the complex and often difficult relations between government and business in small concentrated African economies. In this context, we consider the incentives to reform the business climate. On the side of government, one strand of analysis argues that the distinctive historical process of African state formation has not created strong incentives for states to develop the social contracts needed to underpin effective states or to acquire the capabilities needed for effective management of the economy. As a compounding factor, the small size of most African economies has led to high concentrations of market power and to powerful groups, often with close relationships to governments and an interest in preserving the status quo. This has resulted in high de facto barriers to entry and expansion and has thus slowed efforts to reform.

(p. 117) A third influence on convergence is "agency," the characteristics of the few leading firms and the processes through which they have acquired their knowledge of market opportunities and production. History has left many African countries with a highly unequal distribution of domestic management and commercial expertise that is often heavily concentrated within particular groups. This imbalance has further complicated state-business relations and slowed the diffusion of modern business methods and technologies.

Section 5 concludes.

7.2 Literature Review

The consensus view in development economics is that the large cross-country differences in output per worker, most commonly measured in gross domestic product (GDP) per

capita, cannot fully be explained by the accumulation of physical and human capital. The remaining productivity residual has been approached at three levels: at the macroeconomic level, through examining sectoral patterns, and by considering the causes of productivity differences between individual firms.

At the macroeconomic level, the standard neo-classical growth framework attributes the remaining output differences to an unmeasured residual called TFP or multi-factor productivity (MFP). The relative importance of factor accumulation and productive efficiency in explaining whether a country is rich or poor has been the subject of much debate.² The change and levels of this “measure of our ignorance” (Abramovitz 1956: 11) has been conceptualized in a range of different models, including as the adoption of new production technology, international knowledge spillovers, and technological diffusion (Grossmann and Helpmann 1991; Aghion and Howitt 1992; Parente and Prescott 1994).³

By comparing cross-sectoral differences between poor and rich countries, we can relate the productivity literature to classic models of structural change, in which output and employment slowly shift away from the primary sectors (traditional agriculture, fishing, and mining) into the manufacturing sector and finally into services (Clark 1940; Lewis 1954; Chenery 1960; Kuznets 1966; Baumol and Bowen 1966). The characteristics of this process can be summarized by a few well-established empirical facts.⁴ The share of agriculture in (p. 118) economic output or employment tends to decrease with economic development; that of services tends to increase. The output and employment shares of the manufacturing sector tend to follow an inverse U-shaped curve, first increasing and then falling as income rises. The movement of economic activity from agriculture to higher-productivity manufacturing tends to be associated with episodes of faster economic growth.

In this process of structural transformation, the composition of a country's exports plays an important role. Johnson et al. (2010) compared African countries today with historical cases of countries that were similarly poor or institutionally weak, but managed to sustain rapid growth. In almost all cases, they found that growth is associated with an increase in manufactured exports. The potential importance of the manufacturing-export link is mirrored in Hausmann et al. (2007), who measured the productivity level associated with a country's export basket and found a positive relationship between the initial level of export sophistication relative to income and the subsequent rate of economic growth. Lederman and Maloney (2012) have challenged the interpretation of this result as supporting highly selective policy, arguing that including the share of investment in GDP or a measure of export concentration eliminates the impact of export sophistication on growth. Nevertheless, the confluence of these factors suggests that

increasing shares of progressively more advanced manufactured exports has been associated with sustained growth processes.

Considering countries at higher income levels, where service sector growth dominates, Bernard and Jones (1996a, b) examined the role of intersector productivity differences in aggregate productivity convergence. In 14 OECD countries, they find significant differences in TFP growth rates between sectors. They argued that productivity convergence in the service sector, combined with a declining share of manufacturing in total value added, likely contributes to aggregate productivity convergence.

Even within narrowly defined industries, productivity differences across firms and across countries appear to be large and persistent, and more recent research has relaxed the assumption of homogenous firms within sectors. Baily and Solow (2001) summarized studies of industrialized countries conducted by the McKinsey Global Institute, which found a large degree of variation even within narrow manufacturing industries across six countries. For the USA, Syverson (2004) found that even at the narrow four-digit Standard Industrial Classification level, total factor productivity for plants at the 90th percentile of the productivity distribution is on average almost two times as high as for plants at the 10th percentile. Bartelsman et al. (2013) analyzed firm-level data from the USA and seven other countries in Western and Central Europe. They confirm large within-industry dispersion in total factor productivity and establish an even larger dispersion in labor productivity.⁵

Research has started to bridge the gap between firm-level productivity differences and aggregate TFP.⁶ Restuccia and Rogerson (2008) modeled how distortions in the allocation of production factors across heterogeneous firms can have an impact on aggregate output. Hsieh and Klenow (2009) argued that the higher dispersion of productivity across firms in single industries in China and India reflects greater misallocation of resources relative to the USA. The dispersion in allocative efficiency across firms can be an important (p. 119) driver of aggregate productivity because factors are essentially “bottled up” within less productive firms.

Drawing on the seminal contribution of Lucas (1978), which considers the effect of different levels of entrepreneurial and management “talent” on the size of firms, Bartelsman et al. (2013) analyzed the relationship between firm size and productivity and the impact of firm-level distortions on aggregate output. In the absence of firm-specific distortions, factors of production will be allocated to the most productive firms. The largest firms in an industry will be the most productive, causing the weighted average level of productivity to be greater than average firm-level productivity. The size-productivity relationship is stronger in more advanced countries, which they suggest is a

result of a less distorted business environment. If, however, policy-induced distortions are abundant, they will impede the factor allocation process and affect aggregate productivity through firm selection.

Distortions have an even stronger negative impact if they are correlated with firm size and visibility, encouraging productive firms to “fly beneath the radar screen.” However, if some firms with privileged positions can negotiate special deals that reduce distortions, the result could also be a “missing middle” with smaller, less productive firms coexisting with a set of more productive, yet constrained firms.

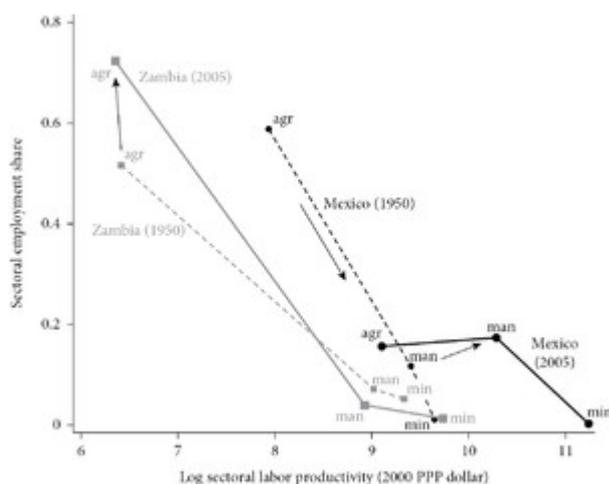
The literature suggests several factors that resonate with conditions in Africa's manufacturing sector and that could hold back a more rapid convergence of productivity. We turn to some of them now.

7.3 Is Africa Different?

Africa does not lack productive sectors and firms, even in its low-income economies. Some are in the extractive sectors and reflect specific natural resource endowments of mineral and hydrocarbon deposits. Some other sectors with high labor productivity, such as public utilities and finance, have low employment generation potential. However, Kenya's agribusiness firms rank among the world's most competitive—in an industry that requires sophisticated production technology and logistics. The country's M-Pesa payments system has become a world leader in cell-phone banking. Even economies with very problematic business environments have a limited number of highly productive firms. The SAB-Miller beer factory in South Sudan is reportedly very efficient and employs a workforce of over 400, almost all South Sudanese nationals. It is also the only larger-scale private firm in the whole country. As further described, in many countries firms with apparently high productivity (apparently because measured productivity may partly reflect monopoly profits) coexist with sectors and subsistence enterprises with very low productivity.⁷

Most of Africa's economies still have large shares of output and employment in the agricultural sector, which has far lower average productivity than the agricultural sector in rich countries (Timmer et al. 1988). Global agricultural productivity growth has accelerated (p. 120) over the last decades (Block 2010) but Africa's overall agricultural productivity has lagged far behind the rest of the world. Over the last decades, emerging economies such as Brazil, Mexico, and Indonesia have experienced positive structural change where large increases in agricultural labor productivity coincided with a falling share of agricultural employment. With the exception of South Africa, many economies in

Africa have seen their average agricultural labor productivity either increase slowly or stagnate (Senegal and Zambia). Agriculture's employment share increased in Zambia and Nigeria between 1990 and 2005 (McMillan and Rodrik 2011). The gap in agricultural labor productivity to the rest of the world has increased even further.



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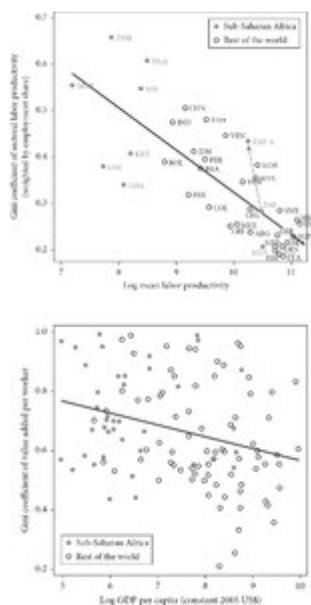
Figure 7.1 Labor productivity and employment share for selected sectors, Zambia and Mexico.

Notes: agr = agriculture; man = manufacturing; min = minerals.

Source: Authors' calculations, based on McMillan and Rodrik (2011).

Despite the reforms that African countries have undergone since the structural adjustment phase of the late 1980s, McMillan and Rodrik (2011) found that between 1990 and 2005, Africa's structural change ran counter to the expected pattern of structural convergence. In contrast to rapidly growing Asian countries, labor moved from high- to low-productivity activities. They also show that economies with a revealed comparative advantage in

extractives are at a disadvantage. The larger the share of natural resources in exports, the smaller is the scope of productivity-enhancing structural change. Even though "enclave" extractive sectors may have high labor productivity relative to the rest, they cannot absorb the surplus labor from agriculture; much of this has thus moved into low-productivity services. More recent data suggest that there may be a turnaround, with a positive growth contribution from structural change over 2005–2010 (McMillan 2013). Even so, over the long term, globalization appears not to have fostered a desirable pattern of structural change in Africa. Figure 7.1 illustrates the diverging longer-term trajectories of sectoral productivity and employment shares in Zambia and Mexico.



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Figure 7.2 Gini coefficient of weighted productivity distribution vs. average productivity based on macro data (upper panel); Gini coefficient of value added per worker and GDP per capita based on firm survey data (lower panel).

Note: Point ZAF-A calculated by adjusting South Africa's productivity distribution for unemployment, assuming zero labor productivity for the unemployed.

Source: Authors' calculations, based on McMillan and Rodrik (2011), Statistics South Africa, and World Bank Enterprise Surveys.

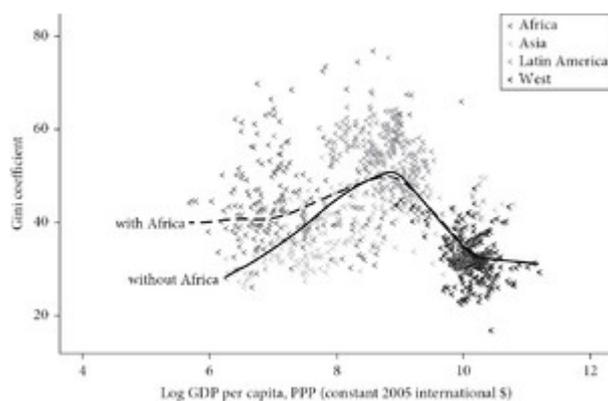
This convergence failure has left African countries with high levels of inequality in intersectoral productivity. To estimate the dispersion in sectoral labor productivity, we calculate a Gini coefficient of sectoral productivity based on national accounts data, weighted by sector employment shares. We find a high sectoral dispersion in Africa. Excluding Mauritius, the Gini coefficient averaged about 0.5 in 2005, relative to about 0.35 for other regions.⁸ Figure 7.2 (upper panel) illustrates the strong negative correlation between economy-wide productivity and inequality of intersectoral productivity.

Comparable firm-level data on the evolution of productivity distributions over long periods of time is lacking for African countries, but cross-sectional comparisons based on recent data suggest a high degree of dispersion, both within the formal manufacturing sector and between the formal manufacturing sector and the rest of the economy. As an indication of the dispersion within the formal sector, we use firm-level data from the World Bank Enterprise Surveys project to calculate a Gini coefficient of value added per worker.⁹ As would be expected, intrasectoral dispersion is lower than intersectoral dispersion, but firm-level productivity Gini coefficients are still relatively high for the surveyed African (p. 121) countries (Figure 7.2, lower panel).¹⁰ To a large extent, Africa's formal manufacturing sector appears to be dominated by a limited number of larger firms with higher labor productivity that coexist with a "long tail" of lower-productivity firms.

Further evidence of productivity dispersion comes from comparing manufacturing labor productivity and labor cost per employee with overall levels of income, measured by GDP

per capita. Given their low levels of income, we would expect African economies to exhibit both low labor productivity levels and low levels of labor costs relative to richer comparators. We find that this is generally the case, and especially in Ethiopia where labor costs are low relative to other African countries. At the same time, firm-level survey data suggest that formal manufacturing firms in Africa are generally both more productive in terms of value-added per employee and higher paying than firms in other regions after adjusting for levels of GDP per capita.¹¹ Kenya and (p. 122) (p. 123) Bangladesh, for example, are not too dissimilar in their levels of GDP per capita, but both labor productivity and labor cost per employee are far higher in Kenyan firms than in those in Bangladesh.¹²

Söderbom and Teal (2004) considered a similar question for Ghana. They show that firms face a steeply upward-sloping labor cost schedule as they grow larger. This constrains their growth and forces workers to find employment in small informal firms, which in turn contributes to a more dualistic economy. One explanation could be the scarcity of skills needed to work in large firms; another could be a tacit agreement to share part of the productivity rents with employees to maintain industrial peace. Gelb et al. (2013) did not find a distinctive size-labor-cost effect when comparing formal African manufacturing firms with those in comparator countries, but find that employee costs increase somewhat faster in response to increased labor productivity in African countries than in others. This, together with generally high levels of manufacturing labor productivity in Africa relative to GDP per capita, confirms the general thrust of the Söderbom-Teal hypothesis that the manufacturing sector (or at least parts of it) demonstrates productivity enclave-like characteristics.¹³ This is confirmed by Iacovone, Ramachandran, and Schmidt (2013) who found that African manufacturing firms, at any age, tend to be about 20-24 percent smaller than firms in other regions of the world. African firms that start small remain small, rather than converging towards the "missing middle."¹⁴



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Figure 7.3 Gini coefficients of income and consumption inequality vs. GDP per capita (1950–2011).

Note: All years shown; Eastern Europe excluded. Line is a locallyweighted regression plot (bandwidth = 0.6).

Data source: Milanovic 2013.

High firm productivity dispersion should, *ceteris paribus*, be reflected in the labor market through wages.¹⁵ In the absence of strongly redistributive fiscal policy, high wage dispersion could then lead to higher measured income (and consumption) inequality. At the macro-level, this association seems to hold for Africa. Cross-section data on inequality conform reasonably well to an inverted U-shaped curve when African countries are

excluded. Inequality is higher in middle-income countries, notably those in Latin America, than in either rich or poor countries. Africa does not conform well to this global pattern. Measured inequality is higher than in other low-income countries, with Gini coefficients comparable to those in Latin America despite Africa's far lower income levels (Figure 7.3).^{16,17}

(p. 124) 7.4 Why Do Factors of Production Not Move to Reduce Productivity Imbalances in Africa?

We consider three sets of factors that slow the diffusion of productivity. We start with the business climate, which imposes high external costs that may not be uniformly distributed across firms. Then we move on to an examination of the often complex business–government relations in Africa's small markets. Finally, we consider the role of firm ownership structures and the unequal distribution of management and technical capacity.

7.4.1 The business climate

Empirical research, anecdotal evidence, and the perceptions of firm owners and managers suggest that the business climate matters to productivity, as well as to the survival and growth of firms.

(p. 125) Constraints imposed by the business climate such as power outages and the burden of regulation are recognized as “major” or “serious” by most African firms. Self-reported losses associated with power outages can amount to more than 10 percent of sales in some countries. Concern over power supply is no less in larger firms because of the very high cost of self-generated power. Behind power, bad transport networks emerge as a second infrastructure concern. Around one third of firms cite transportation as a major or severe constraint. Firms also report having to pay bribes to get things done. On average across firm surveys in Africa, around 40 percent of firms confirmed that these practices were common, with fewer in South Africa and more in other countries, including Kenya where the share exceeded 60 percent.

Transport costs not only reflect problems in the supply of physical infrastructure, but also more complex political economy issues related to the business environment. In many African ports, cargo dwell times are about two weeks, compared to under a week in Asia, Europe, and Latin America (Beuran et al. 2012). Long dwell times are not just the result of port inefficiency but may be linked to businesses' inventory management practices: cargo is sometimes purposely left at the port when the cost of clearing it immediately is high. There are storage-cost savings, especially when firms cannot immediately sell their imported goods. Terminal operators may also benefit from longer dwell times by receiving informal payments. Positive examples exist: in Durban, a strong domestic private sector with global trade interests and a government willing to support the business sector have helped to reduce dwell times.

Several studies indicate the adverse impact of business climate distortions for productivity. Eifert et al. (2008) distinguished between “factory-floor” productivity and overall productivity. They define “gross” value added as sales less the cost of raw materials, and “net” value added excluding external costs such as power, transport, licensing fees, and bribes. African firms appear substantially less productive, relative to firms in comparator countries, when these “indirect costs” are included. Kenyan firms, for example, have about the same factory floor productivity as firms in China but only about half of the overall productivity. Harrison et al. (2012) concluded similarly that the productivity of African firms is not less than that of firms in other countries once allowance is made for the quality of the business climate. All of these studies should be

qualified to the extent that, as already discussed and in the next section, many larger firms probably reap monopoly rents because of high shares in small domestic markets.

Costly business climates, if they impact similarly on all firms, will reduce investment and growth in general, both for small and large firms and for all sectors. They can be very costly, but there is no reason why they should create significant differences between firms. The long-run equilibrium productivity and size distributions could be either less dispersed or more dispersed. However, to the extent that inputs of non-traded goods reflect difficulties in providing essentials like power, transport, security, and enforceable contracts, Africa could be relatively worse at producing non-traded goods and services than other regions. Transactions-intensive firms are therefore crowded out. When costs imposed by the business climate are very high, there is a tendency for economies to degenerate into a large number of subsistence enterprises and very few productive enclaves that are able to survive. One extreme example for this would be Equatorial Guinea, which ranks 166 out of 189 in the 2014 World Bank's Doing Business composite (p. 126) index but has a highly dynamic offshore oil sector that is not dependent on non-traded goods and services.¹⁸

Policy uncertainty may be as problematic a factor for firms as the average level of the business climate. Hallward-Driemeier et al. (2010) found high degrees of variability in firm-level responses to business surveys, suggesting that intracountry variation in business conditions can be larger than intercountry differences. Rather than dealing with predictable—if costly—de jure or de facto policies, firms face a series of unpredictable deals that create high levels of uncertainty and reduce growth. Smaller firms are less likely than large firms to believe that the implementation of policies is consistent and predictable. Firms with the capacity to become large or more capital intensive are therefore likely to do so if they have preferential access to deals to accommodate the uncertainty of policy implementation.

In sum, the burden of a bad business climate does not fall uniformly on all sectors or businesses within sectors. The manufacturing sector is more crowded out than other sectors that are less dependent on non-traded inputs. Within the manufacturing sector, it appears that there is a “missing middle” as well. Subsistence firms are immune while very big firms have the capacity and bargaining power to “deal”. To the extent that this is the case, the formal middle will be squeezed out.¹⁹

7.4.2 Business-government relations in Africa's small markets

Africa's often ambivalent relations between business and government have been shaped by factors with interrelated roots in its geography and history. Populations are sparse,

with inhabitants often scattered far from the coast. Its small economies are still sparser, with output per square kilometer only about 8 percent that of India or China.²⁰

Africa's states are also relatively new, with artificial borders set in the colonial period. Following the decision of the Organization of African Unity to endorse existing borders rather than open up a contentious process of redrawing them, they have been maintained almost without exception since independence. Herbst (2000) argued that the process of African state formation, a very different one from the classic European model as set out by Tilly (1990) and others, has reduced incentives to invest in state capacity. Throughout a thousand-year struggle to survive, European states had to develop effective institutions to raise fiscal revenue to fund armies and defend their territory. Taxation led to representation (p. 127) and social contracts of mutual accountability between states and their citizens. With low population density, open land frontiers, and frozen borders, African states have not faced such a Darwinian struggle to survive and so have not developed comparable institutions to underpin state capacity and accountability.

While the nuances in this thesis can be debated, including the contributions of their respective colonial experiences (Acemoglu et al. 2001; Robinson 2002), the combination of small market size and low capacity has reduced the attractiveness of African countries to potential investors outside resource sectors. Combining rankings for GDP and business climate (measured by the Doing Business composite index), only eight African states make it into the top 100 of 173 countries. Of the bottom 50, 38 are African; the rest are mostly microstates or countries with very problematic governance conditions and special circumstances such as Afghanistan.

Not surprisingly, competition is limited in many African product markets. In World Bank Enterprise Survey data for the formal sector in Kenya, the five largest firms accounted for 58 percent of total value added. In the Mozambique survey, even after excluding the five largest firms in the sample, the next five accounted for 47 percent of residual value added. Older Enterprise Survey data asked firms to classify themselves as "influential" or "not influential" in terms of their relationships with government. The former self-reported market shares for their main products as around 40 percent but even the latter group reported substantial market shares, probably because of limited market integration within individual countries. Detailed enterprise maps constructed for Tanzania, Zambia, Ghana, and Ethiopia (Sutton and Kellow 2010; Sutton and Kpentey 2012; Sutton and Olomi 2012; Sutton and Langmead 2013) analyzed the origins of key capabilities by focusing on the 50 most significant firms in the economy. Typically, each sub-sector is dominated by a handful of firms with a very small number responsible for the bulk of exports in every significant product category.

Weak capacity and monopoly power bear on the question raised by Bräutigam et al. (2002) of why business-government partnerships to foster growth are so rare in Africa. Echoing the conclusion of Himbara (1994) for Kenya, they found that the capabilities of the state matter a great deal for the ability to implement a pro-growth strategy. Even a pro-business, democratically elected government in Zambia in the early 1990s did little to improve business-government relations, while in Zimbabwe the presence of an authoritarian government meant that only "state elites" could survive in the private sector.²¹

It is not clear that consultative mechanisms have helped to improve business climate conditions for firms in general. Page (2013) offers an assessment of the Presidential Investors' Advisory Councils established in 2001 with the support of the World Bank and International Monetary Fund (IMF). These public-private coordination mechanisms were expected to let leaders hear from successful businesses, identify constraints to investment, generate recommendations for action, and reinforce and accelerate policy reform. While the assessment is not entirely negative, on balance the Councils have advanced little in their main objectives, failing to secure sufficient engagement and initiative from either the government or investor side. In those few cases where the process led to specific recommendations, these have not been taken up.

(p. 128) These studies suggest that many countries have been locked into a low-level business climate equilibrium sustained by the incentives faced by key participants. On the side of firms, small markets and monopoly rents confer an additional advantage on the big players, with bargaining power reinforcing the asymmetry of the business climate. "Influential" firms, including many that have benefited from decades of import substitution policy, are more prone to lobby governments, including to preserve local market power. Larger firms also have rents to share between owners, employees, and public officials. Even apparently profitable larger firms will not grow rapidly in small markets and they may find it hard to surmount the "export productivity hurdle" because measures of their productivity are exaggerated by monopoly profits on domestic sales (van Biesebroeck 2005).

On the side of governments, as explained below in many countries the business sector does not have strong natural political constituencies. Emery (2003) noted that the regulatory system is often used to control the productive sectors and is structured to ensure that most firms are in violation of at least some regulation. Nugent (1995) described the example of successive Ghanaian regimes that were open to foreign investment but significantly less enthusiastic about the creation of a broad-based, indigenous private sector because wealthy indigenous businessmen were viewed as potential political rivals. The government's ambiguity about private sector development

was also reflected in public opinion polls that showed Ghanaians to be enthusiastic about democracy but less positive on market-based reforms (Bratton et al. 2001). Business has thus been left more vulnerable to swings in public policy and dependent on maintaining close relationships with government, eroding the impact of already weak competition policy.²²

7.4.3 Firm ownership and management capacity

A number of factors that constrain the convergence of productivity operate at the firm level. We focus on the ownership of larger-scale manufacturing firms, including the role of entrepreneurship and business networks, and on management capacity.²³ History has bequeathed Africa a distinctive legacy in these areas, although naturally there are variations across countries and over time. In some countries, the private sector has been seen as “alive, doing well, and owned by the government.”²⁴ In many others, foreign investors and ethnic minorities of European, Asian, or Middle Eastern descent play a dominant role in the leading firms or sectors, a pattern of concentrated ownership with a long historical basis that in some cases predates the colonial period.

Ethnically based business networks are of course not an exclusively African phenomenon; they are prominent in many countries, including in emerging industrial powers in Asia. Nevertheless, the dominance of minority-owned business in commodities trade was recognized early on by Bauer (1954).²⁵ Several studies, including Himbara (1994) for Kenya (p. 129) and Fafchamps (2001), address the question for industry, as do a number of enterprise surveys of the formal manufacturing sector. These show that a few minority-owned firms often account for a disproportionately large share of overall value added. Surveys for 14 countries showed that minority-owned firms produced 50 percent or more of total value added, and more than 80 percent in Guinea, Tanzania, and Kenya.²⁶ Sutton's enterprise maps for four countries show how modest the role of indigenous private owners is in the more advanced parts of industry. Only 51 of 200 leading firms started up as domestic privately owned firms, 57 evolved from trading enterprises, 63 were foreign-owned (in some cases with state participation), and 29 were state enterprises. Especially in East Africa, the domestic private business sector appears to be overwhelmingly dominated by non-African minorities, and while the picture is somewhat more balanced in Ethiopia²⁷ and Ghana, on average only about 17 percent of firms appear to be owned by indigenous African entrepreneurs.

Significant differences exist between minority-owned and indigenous firms. The latter are significantly smaller at start-up and grow more slowly than those owned by minority entrepreneurs.²⁸ Minority entrepreneurs show an advantage over indigenous

entrepreneurs in terms of education and work experience, as well as social background: surveys show that Asian entrepreneurs were between five and 10 times more likely to have parents in the same line of business as indigenous African entrepreneurs (Ramachandran et al. 2009). Minority entrepreneurs often belong to communities that have dominated external trade and commercial relationships for generations and that have built networks and credit relationships spanning countries and sometimes continents. Some operate within family-owned groups that have diversified across sectors, partly in response to the limits to growth created by small market size. Many of Africa's firms have come about through the transformation of "merchant capital" into "industrial capital". Africa, unlike China, has largely not benefited from diaspora-driven investment in technology and management expertise.²⁹

Minority entrepreneurs play a positive role in the growth of the local private sector. They bring in skills, financial resources, networking channels, and knowledge of products and markets.³⁰ They benefit from trust-based network relationships that can compensate for shortcomings in the business climate to provide finance and knowledge and substitute for weak contract enforcement. Like multinationals, family groups can diversify against country risk more easily than indigenous investors. These are powerful advantages—and as (p. 130) emphasized by Hausmann et al. (2008), agents facing less binding constraints are more likely to survive and thrive. On the other hand, beyond some point minority ownership can have negative side-effects. An ownership structure dominated by a few industrial-trading groups can further reduce competition in small markets, engender public distrust, and stir populist policies that increase country risk and deter investment and entry. The absence of a natural political constituency for these investors also makes the emergence of a secure broad-based business coalition more difficult.

Patterns of ownership and control can also impact on convergence through their effect on the management practices of firms. While Lucas (1978) modeled the distribution of firm size and productivity as reflecting differences in entrepreneurial skills, until recently it has not been possible to test the model because of the lack of an index of management capability that did not directly draw on measures of firm performance. Bloom and van Reenen (2007) addressed this gap with a survey tool that measures management practices in 18 dimensions covering operations, monitoring, targets, and incentives.³¹ They found that average management scores vary greatly across countries, and that they are correlated with income and aggregate productivity. Management scores also differ across firms within individual industries and countries and account for about 25 percent of productivity differences holding a number of other variables constant. Through a controlled experiment, firms that were helped to improve management scores achieved substantial productivity gains, suggesting a causal relationship (Bloom et al. 2013). Detailed Africa-specific results are not yet available, but average management scores for

Ethiopia, Ghana, Kenya, Tanzania, and Zambia fall substantially below the score for India, which itself scores far lower than high-income countries.

Several factors make it less likely that poorly managed firms will be forced out of business. Low levels of competition, measured economy-wide as well as reported by firm managers, are associated with poorer management practices. More restrictive labor market practices affect management quality by placing constraints on human resource management as well as by causing frictions in the hiring and firing of managers themselves. Government-owned firms are poorly managed, often being shielded from competitive pressures through subsidies, preferential regulatory treatment, or preferential access to value chains. Family, rather than professional, management also plays a role in reducing management quality and productivity, even for family-owned firms. Weak rule of law makes it less likely that managerial positions will be given to non-family members, effectively limiting the span of management control. This in turn constrains the expansion of productive firms and allows low-productivity firms to survive. These factors, as set out by Bloom and van Reenen (2007), are all relevant for most African economies.

7.5 Conclusion

Just as Africa can learn from developing regions that have experienced more widespread structural transformation, the African development experience offers insights (p. 131) that may be valuable for other parts of the developing world and the discipline of Economics.

Africa's slow rate of productivity growth and structural transformation partly reflects slow productivity convergence both at sector and at firm level. Some of the research surveyed in this chapter is still in the process of being applied to Africa. The available evidence suggests that a number of factors are responsible, and that while every country has its particularities, there are common threads that characterize most experiences. They have roots in Africa's geography and its distinctive history, including the legacy of its colonial period on state formation and market structure, as well as on the highly uneven distribution of human capital among its population. These factors have contributed to a political economy that has sustained a poor- and high-cost business climate which has both constrained the productivity of individual firms and slowed productivity convergence.

None of these factors are immutable. Both history and geography are evolving in response to demographic, technological, and regulatory changes. Rapid population

growth and urbanization are reducing land-to-labor ratios. That puts pressure on African governments to shift their economies towards manufacturing industry for better jobs and growth. The rapid spread of information and communication technology is breaking down distance barriers, at least in some dimensions. Trade reform and progress on regional economic integration, though slow, is helping to break down market barriers.

The political economy of the private sector is also evolving, with growth in larger-scale African entrepreneurship, including a number of emerging trans-Africa businesses. This can help to complement foreign investment as well as strengthen the power of domestic business constituencies. Given the political power of established interests, it may be that a two-track policy along the lines of those implemented by Malaysia or Mauritius is more feasible for some African countries than across-the-board reforms. Any approach will need to open up opportunities for indigenous businesses as well as for foreign and minority firms, and be complemented by measures to strengthen the business climate and access to skills and management capacity.

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Notes:

(¹) Throughout the rest of this chapter, "Africa" refers to sub-Saharan Africa.

(²) The consensus view appears to be that the productivity residual typically accounts for 50 percent or more of cross-country differences. Hall and Jones (1999) decompose differences in the level of output per worker between the United States and Niger in 1988 and largely attribute the 35-fold difference to a productivity residual. More recently, Jones and Romer (2010) revisited the "Kaldor facts" (Kaldor 1961) and found that less

than half of cross-country differences in per capita GDP can be explained by measured inputs.

(³) Klenow and Rodríguez-Clare (1997) summarized some of the literature that has emerged in response to the “neo-classical revival”, most importantly following the seminal empirical contribution by Mankiw, Romer, and Weil (1992), who found that a Solow model augmented with human capital can explain 78 percent of income per capita differences across countries. Easterly and Levine (2001) review the growth accounting literature and establish central empirical facts. Caselli's (2005) development accounting exercise offers an excellent literature survey and provides a useful analytical framework. Finally, Hsieh and Klenow (2010) pointed to some of the open questions in the literature.

(⁴) Herrendorf, Rogerson, and Valentinyi (2013) offer a recent synthesis of the structural transformation literature.

(⁵) Syverson (2011) surveys the empirical literature on measured productivity differences across firms.

(⁶) Restuccia and Rogerson (2013) provide a recent survey of the literature that links aggregate productivity to the allocation of production factors across firms.

(⁷) Modern, high-productivity business is not confined to manufacturing. Tourism, for example, has been Africa's fastest-growing export. The obstacles to its growth resemble those for the manufacturing sector, including costly logistics, heavy regulation, and limited access to land (Christie et al. 2013).

(⁸) Africa's Gini would be even higher if allowance is made for the exceptionally high level of unemployment in South Africa; including the unemployed as a zero-productivity sector boosts South Africa's productivity Gini from below 0.3 to over 0.4, relatively high for a middle-income country (see Figure 7.2, upper panel, point ZAF-A). Data for these calculations comes from McMillan and Rodrik (2011).

(⁹) Calculations in this paragraph are based on a harmonized data set of 15,108 firms in 41 countries across sub-Saharan Africa, surveyed between the years 2006 and 2011. Data comes from the World Bank Enterprise Survey project and covers formal manufacturing firms with more than five employees.

(¹⁰) While the pattern conforms to a general tendency for productivity dispersion to be higher for manufacturing sectors in lower-income countries, much of that tendency is due to the overwhelming concentration of African countries in the low-income range. African Gini coefficients remain high after removing a number of countries where outlier

observations of implausibly high-productivity firms might have caused the Gini to be excessively large.

(¹¹) See Gelb et al. (2013) for further details. They find that labor costs are 84 percent higher than expected on the basis of GDP per capita and including a range of size and sector dummies. Introducing labor productivity as an additional variable reduces the “Africa effect” by half but still leaves a substantial and significant markup relative to other developing regions.

(¹²) The difference in real employee costs per worker relative to poorer comparators reduces somewhat when account is taken of the higher price levels in Africa as shown by purchasing power parity indices, but this still leaves the formal manufacturing sector as a productivity and pay enclave relative to the rest of the economy.

(¹³) These patterns could of course reflect large sampling differences between the Enterprise Surveys in African and other countries, if the former selected larger firms. However, in every size category the average African firm is smaller than its counterpart abroad. It is therefore unlikely that this constitutes the reason for the observed differences.

(¹⁴) Firm-level survey responses on the business environment, including access to finance and land, and the availability of power supply and skilled labor, have some explanatory power in explaining this difference, as do foreign ownership, export status of the firm, startup size and the size of the market. However, even after controlling for these variables, about 60 percent of the size gap between African firms and those in other countries remains unexplained.

(¹⁵) Faggio, Salvanes, and van Reenen (2010) provide a recent empirical study of the link between wage inequality and productivity dispersion for a panel of firms in the United Kingdom.

(¹⁶) African distributions are also usually measured on the basis of consumption expenditures, which tend to reduce levels of inequality relative to measures based on income as in Latin America.

(¹⁷) Even South Africa, with its large formal economy, is notably unequal. Its formal economy coexists with a very low productivity “survivalist” informal economy and unemployment estimated at around 30 percent of the labor force. Its structural characteristics are reflected in very high levels of income inequality, especially when measured on the basis of pre-tax market income and excluding highly redistributive transfers that account for about 3 percent of GDP and two thirds of the income of the poorest quintile of the population (Woolard, 2010). Its market income Gini coefficient has

been estimated at 0.77 (Finn et al. 2012), above comparably measured Ginis for other countries known for their high inequality.

(¹⁸) Within the formal manufacturing sector, there is also a tendency for the ratio of value added to sales to be higher in Africa, suggesting that firms are less able to use the market to improve efficiency through subcontracting and outsourcing.

(¹⁹) This is not only true for the manufacturing sector. Services similarly may have a missing middle: "Investment in [Zambian] tourism has been stifled by high costs in terms of both time and money and the lack of predictability of licensing and administrative requirements to open and operate a tourism business. [As a result] two thirds of hospitality establishments remain unclassified and many inhabit the informal economy" (Cattaneo 2007: 214).

(²⁰) Even in small, densely populated countries like Rwanda or Burundi income density does not approach that of India or China. It is of course higher in small island economies like Mauritius and Cape Verde.

(²¹) Bräutigam et al. (2002) note the counter-example of Mauritius, where business and government came together to boost economic performance. For a survey of state-business relationships and the (limited) empirical research on Africa, see contributions in te Velde (2010) and (2013).

(²²) For an in-depth study of the state of competition and particular policies and cases, see Ellis and Singh (2010).

(²³) We do not discuss human capital as labor input in the production process and its impact on firm productivity or aggregate outcomes.

(²⁴) The words of a USAID mission analyzing Malawi's private sector, cited in Harrigan (2001: 38).

(²⁵) In this context, we consider minority groups that are originating from outside the continent. In countries like Vietnam, in the Andean region, or in parts of Southern Africa, indigenous minorities are in fact highly disadvantaged.

(²⁶) Indigenous firms are those that are black African-owned, including by black African majority shareholders or black Africans from other countries in Africa (Ramachandran et al. 2009). For Kenya, anecdotal evidence on top incomes supports the proposition that economic opportunities are unequally distributed; many of the richest Kenyans appear to be from ethnic minority groups or connected to the families of Kenya's presidents.

(²⁷) Ethiopia is distinctive, with a higher proportion of indigenous ownership; nevertheless, the ownership structure of its industrial firms is highly unbalanced in terms of ethnicity (Mengistae 2001). Page (2013) notes the “history of deep distrust between [Ethiopian] business and government” (p. 29).

(²⁸) The picture is different for the few indigenous firms that reach the stage of being able to diversify into other African countries; they also grow more rapidly than local indigenous firms.

(²⁹) For China, Dinh et al. (2013) note the central role of Chinese expatriate investors in building the capacity of domestic firms (p. 472).

(³⁰) Bräutigam (2003), relying on anecdotal evidence, argues that Chinese business networks have generated positive spillovers in Mauritius.

(³¹) The surveys initially covered firms in France, Germany, the United States, and the United Kingdom, but now include detailed data from about 15,000 firms in 30 countries including developing countries in Asia, Latin America, and sub-Saharan Africa. Background material and full survey data is available from worldmanagementsurvey.org.

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