

MADE *in* AFRICA

Learning to Compete in Industry

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Preface and Acknowledgments

Africa is rising. Since 1995 it has grown faster than many other parts of the developing world. Per capita income has been increasing steadily, and with six of the world's ten fastest-growing economies of the last decade, Africa has been branded the developing world's next "frontier market" by Wall Street and the World Bank. Yet Africa's experience with industrialization has been

disappointing. In 2012 sub-Saharan Africa's average share of manufacturing value added in GDP was about 10 percent, the same as in the 1970s.

This book presents the main results of Learning to Compete (L2C), a research program jointly sponsored by the African Development Bank, the Brookings Institution, and the United Nations University World Institute for Development Economics Research (UNU-WIDER). The L2C program tried to answer a seemingly simple but puzzling question: Why is there so little industry in Africa? Given Africa's recent economic success, one may reasonably wonder why we chose to focus on industrialization, an area in which the Continent has not performed well. It is not because we wanted to return to the “Afro-pessimism” of earlier decades. Rather, it is because we want to see growth in Africa sustain itself. One worry that motivated us to undertake the project was that since 1995, growth in Africa has taken place without the changes in economic structure that normally occur as incomes per person rise. This raised concerns in our minds about the durability of the “African growth miracle.”

When we began Learning to Compete in 2010, not many observers of Africa—academics and policymakers alike—were concerned with its lack of structural change. That certainly has changed. Over the last five years, the African Development Bank, the UN Economic Commission for Africa, and the African Union have all voiced concerns with the pattern and pace of structural change. A new Africa Center for Economic Transformation, led by one of the region's most distinguished economists, K. Y. Amoako, has been established in Accra and has published its first “Africa Transformation Report.” At the urging of African nations, the new Sustainable Development Goals of the United Nations appear likely to contain structural change, employment generation, and industrialization as global development objectives. This book is in part our contribution to that ongoing discussion.

Historically, industry has been a driving force behind structural change, but Africa has abundant land and natural resources. Perhaps it does not need to industrialize to maintain the pace of economic progress. While it is certainly possible for economies to grow based on modern agriculture or natural resources, we are convinced that there is something special about the role of industry in low-income countries. At the most basic level industry is a high-productivity sector into which a large number of workers can flow. This is good for growth, for job creation, and for poverty reduction. It is also the only sector in which poor countries are catching up to rich country productivity levels, regardless of geography, institutions, or policies. This makes industry a potentially powerful driver of economywide productivity growth. All of these good things depend on the size and the rate of growth of industry. That is why we have written this book.

We have subtitled it *Learning to Compete in Industry* because setting out a new agenda for industrial development in Africa is our key objective. Yet, for Africa to succeed, it is critical to understand why few manufactured goods have been made in Africa for the last forty years. To understand this better

we asked national researchers to undertake eleven detailed country case studies—eight from sub-Saharan Africa, one from North Africa, and two from emerging Asia. The eight sub-Saharan studies document industrialization efforts and outcomes in Ethiopia, Ghana, Kenya, Mozambique, Nigeria, Senegal, Tanzania, and Uganda. Tunisia was included both to extend the coverage of the research to the Continent as a whole and because—in light of the events of the Arab Spring—it is of considerable interest in its own right. The emerging Asian countries—Cambodia and Vietnam—were chosen because they are East Asia's newest industrializers. They also had per capita income levels and structural characteristics similar to the African economies studied, as recently as 2005 in the case of Cambodia and 2001 in the case of Vietnam.¹

Made in Africa is mainly a story about firms. For Africa to industrialize its firms must be able to compete in global markets. Successful industrializers have been those that over time have managed to raise the productivity of the “typical” firm. For this reason we wanted to understand better what makes firms more productive in low-income countries. We were particularly interested in the roles of exports and industrial agglomerations in firm-level productivity. To address these questions the research team carried out a total of seventeen econometric studies of the drivers of firm-level productivity using statistical data from our eleven case study countries. Much of this book is based on that research.

We were also interested in the role of foreign direct investment (FDI). There is an extensive literature—most of it based on studies of middle-income countries—which suggests that foreign firms can be an important source of knowledge for industrial development. We wanted to understand the interactions between foreign-owned and domestic firms in low-income countries. To address this question we carried out qualitative surveys in Africa and emerging Asia in which we asked the owners and managers of foreign and domestic firms how they interacted and whether they explicitly or implicitly transferred knowledge to their purchasers or suppliers.

We are not alone in our concern that Africa has failed to industrialize. At the same time we carried out our research two other important research projects were taking a close look at African industrialization. The first project, spearheaded by Justin Lin, then chief economist of the World Bank, studied light manufacturing in Africa. The second, led by Professor John Sutton and sponsored by the International Growth Centre, produced a number of Enterprise Maps for African countries. Both projects add substantially to our knowledge of African industry, and we have drawn on them.

This book is an attempt to persuade African policymakers, aid practitioners, and those interested in Africa's future that Africa can industrialize. For that reason we have tried to write a book that is accessible to a wide range of readers. While a mass of technical research—ours and that of others—underpins the writing, we have tried here to minimize the use of

technique and jargon. Those interested in the finer technical details can find them in the publications and working papers to which we refer.

The book is organized in four major parts. [Chapter 1](#) takes up the question of why industry matters. [Part II](#) (including chapters [2](#) and [3](#)) provides a brief history of industrial development in Africa, gives our assessment of past industrialization efforts and outcomes in the countries we studied intensively, and outlines the challenges faced by African economies in breaking into the global market for industrial goods today. [Part III](#) (chapters [4](#), [5](#), and [6](#)) presents the main results of Learning to Compete. The three chapters discuss the key drivers of firm-level productivity in low-income countries—exports and competition, firm capabilities, and industrial agglomerations—and their relevance to Africa's industrial development.

In [Part IV](#) (chapters [7](#), [8](#), and [9](#)) the focus shifts to policy. While traditional concerns such as infrastructure, skills, and the regulatory environment are important, our research suggests that addressing these factors alone will not be sufficient. [Chapter 7](#) presents a new industrialization strategy for Africa, grounded in that research, while [chapter 8](#) takes up the question of industrialization in Africa's growing number of resource-abundant countries. In [chapter 9](#) we suggest changes in donor priorities and practices to support the new approach to industrialization.

Before closing, a final note: the idea that governments can successfully develop and implement strategies for industrial development is at the heart of the decades-long controversy over industrial policy. Often overlooked in that debate over “picking winners” or “leveling the playing field” is the reality that governments make industrial policy every day through the public expenditure program, institutional and regulatory changes, and international economic policy. These choices—sometimes inadvertently—favor some enterprises or sectors at the expense of others, and in Africa they often lack a coherent strategic focus. The relevant question is not: will governments make choices? It is: will they make the right choices? We wrote this book with a view to helping to inform those choices.

Many people worked with us during the five years of Learning to Compete's implementation. Our greatest debt is to the country-based research teams who carried out much of the case study and quantitative research that underpins this book. They are:

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The country studies are available as Brookings Learning to Compete Working Papers (www.brookings.edu/about/projects/africa-growth/learning-to-compete) and as WIDER Working Papers (www.wider.unu.edu/research/current-programme/en_GB/L2C-2010/).

2. See (www1.wider.unu.edu/L2Cconf/) for a summary of the conference proceedings.

PART I

WHY INDUSTRY MATTERS *for* AFRICA

CHAPTER 1

Why Industry Matters for Africa

Economic growth in Africa has been on an accelerating trend for more than thirty years. The average annual growth rate of real output increased from 1.8 percent in the period 1980–89 to 2.6 percent in 1990–99 and 5.3 percent in 2000–09. Since 2010 it has remained in the range of 4.5 to 5.5 percent per year. One of the enduring “stylized facts” of economic development is that structural change—the movement of labor from low productivity sectors into higher productivity employment—is a key driver of growth, especially in lower income countries.¹ Despite two decades of solid economic growth, however, Africa has experienced relatively little structural change.² The region's growth turnaround beginning in 1995 was largely due to making fewer economic policy mistakes, rising commodity prices, and natural resource discoveries.³

In both theory and history, industry has been a key driver of structural change, but it has only played a minor role in recent structural change in Africa. Since 2000, a growing share of African workers have been leaving agriculture and moving to higher productivity sectors. This positive structural change has contributed to overall growth, but the shift in employment has primarily been from agriculture into services for domestic consumers. Only about one in five African workers leaving agriculture has moved into the industrial sector.⁴ To us, these trends raise the question: How important is industry to Africa?

As we attempt to answer this question, the definition of “industry” is critical. When the economic statistics used today were first drawn up in the 1950s, there was little confusion over what industry meant. At the broadest level it encompassed mining, manufacturing, utilities, and construction. Of these, manufacturing—“smokestack industry”—was the subject of central interest. However, changes in transport costs and information and communications technology have shifted the boundaries of industry. A wide range of services and agro-industrial products have become tradable and have many features in common with manufacturing.⁵ Like manufacturing, they benefit from technological change and productivity growth. Some exhibit tendencies for scale and agglomeration economies.⁶ For that reason we take a broad view of what constitutes industry today. It is manufacturing and those tradable services and agro-industrial value chains that share the firm-level characteristics that are the subject of this book. Put more straightforwardly, we are interested in industry both with and without smokestacks.

In an attempt to understand industry's importance to Africa, we begin this chapter with a snapshot of the magnitude of Africa's industrialization challenge. We compare the structure of Africa's economies with a number of benchmarks and with the cross-country patterns relating the size of the industrial sector to the level of per capita income. The output and employment structure of a “typical” African economy is quite different from these comparators. The main gaps lie in the much smaller shares of output and employment in industry.

Although the numbers suggest that Africa has too little industry, it has managed to grow without industrialization for nearly two decades. Perhaps it does not need to industrialize. In this chapter we make the case that industry matters for Africa. We show that the slow pace of industrialization is at least partly responsible for the region's disappointing performance in translating growth into good jobs and poverty reduction. Lack of industrial development may also have closed off important opportunities to raise women's welfare. We end by arguing that industrialization has some special characteristics that can sustain growth.

Africa's “Manufacturing Deficit”

Most African countries have national visions that call for achieving middle-income status over the next decade. One measure of the extent of structural change that might be needed for the transition to middle income can be found by comparing Africa's current economic structure with that of a “benchmark” middle-income country.⁷ The World Bank defines lower-middle-income status as falling in the range US\$1,045–4,125 in 2012 purchasing power parity (PPP) prices.⁸ The lower bound of this range would seem to be a reasonable target for Africa's national visions.

We constructed a benchmark economy by identifying a group of currently middle-income countries that have crossed the US\$1,045 threshold.⁹ We selected the following benchmark countries and years: China (2000), India (2007), Indonesia (2004), Korea (1968), Malaysia (1968), Philippines (1976), and Thailand (1987). The economic structure of the benchmark is simply the average of the shares of value added and employment in four broad sectors—agriculture, manufacturing, other industry, and services—for these seven countries in the relevant year.

The differences between Africa and the benchmark are substantial ([table 1-1](#)). The largest difference is in industry. The manufacturing value added and the labor shares in low-income African countries are about half of the benchmark values. Even Mauritius and South Africa, the middle-income countries represented and arguably sub-Saharan Africa's two most successful industrializers, fall short of the benchmark in terms of the share of manufacturing value added in GDP. This is the region's “manufacturing deficit” relative to other lower-middle-income countries.

[Table 1-2](#) gives another view of the manufacturing deficit. It compares selected indicators of industrial development for Africa with other developing countries in 2010, the last year for which we have reasonably comprehensive data. By any measure Africa's industrial sector is small relative to the average for the developing world as a whole. The share of manufacturing in GDP is less than one-half of the average for all developing countries, and in contrast with developing countries as a whole, it is declining. Manufacturing output per capita is about 10 percent of the global developing country average. Per capita manufactured exports are slightly more than 10 percent of the developing country average, and the share of manufactured exports in total exports is strikingly low. Moreover, these measures have changed little since the 1990s.¹⁰

Because economic structure reflects an economy's level of development, it is possible that the “manufacturing deficit” reflects nothing more than the lower per capita incomes of African countries. This is where cross-country patterns make a useful reference point. The relationship between manufacturing and per capita income has an inverted U shape. In the early stages of development when most economies are concentrated in agriculture, growth in income is associated with very rapid increases of the share of manufacturing in total output. As incomes and real wages rise and skills develop, the relative importance of manufacturing peaks and countries

moving toward upper-middle-income levels diversify into more skill-intensive activities, including services.

Table 1-1. *Africa's Manufacturing Deficit, 2010*

	Value added share				Labor s	
	Agriculture	Other industry	Manufacturing	Services	Agriculture	Other industry
Benchmark middle-income country	21.7	12.2	21.9	44.2	45.2	6.6
Africa low-income country	27.8	11.8	11.1	49.3	63.1	5.1
Africa middle-income country	4.8	10.9	17.1	67.2	8.6	11.9

Sources: McMillan and Rodrik (2011) database; World Bank World Development Indicators (WDI) database; de Vries, Timmer, and de Vries (2013). Authors' calculations.

Notes: Middle-income benchmark as described in text.

Africa low-income sample ETH, MWI, GHA, KEN, MAD, MOZ, SEN, TZA.

Africa middle-income sample MUS, ZAF.

Table 1-2. *Selected Indicators of Industrial Development, 2000–10*

Region	Manufacturing value added				Manufa
	Share of GDP 2000 (percent)	Share of GDP 2010 (percent)	Per capita 2010 (US\$2,000)	Per capita growth 2000–10 (percent)	Share in total exports 2010 (percent)
Sub-Saharan Africa average	8.1	7.0	36.7	2.69	30.0
Developing countries average	20.5	21.0	400.2	3.01	74.0

Sources: UNIDO (2009); UNIDO (2013); UNIDO Industrial Development database. Authors' calculations.

Notes: Sub-Saharan Africa average excludes South Africa.

Globally, the share of manufacturing in total output rises with per capita income until countries reach upper-middle-income status and then declines. While African economies generally conform to this global pattern, the vast majority are below the global average in terms of the relationship between per capita income and the share of manufacturing in GDP. Only Madagascar, Mozambique, Lesotho, and the Ivory Coast have shares of manufacturing in total output that exceed the predicted values for their levels of income. Many of the region's recent growth success stories—Ethiopia, Ghana, Kenya, Tanzania, and Uganda, for example—have shares of manufacturing in GDP that are well below their predicted values. Controlling for the level of income,

Africa faces a larger deficit in terms of manufacturing than other countries at the same level of development.¹¹

Structural Change, Industry, and Growth

Because developing economies are characterized by large differences in output per worker across sectors, there is a substantial growth payoff when factors of production move from lower productivity to higher productivity sectors. Africa is the developing region with the most to gain from structural change. It has the greatest differences across sectors in output per worker. The average ratio of highest to lowest productivity sectors in Africa is more than twice that for Latin America and Asia.¹² This shows the large potential for structural change to boost growth of income per person in Africa, although recent research finds that this potential has not been fully tapped.¹³

Economywide changes in output per worker over time can be decomposed into two components.¹⁴ The first component reflects productivity growth within individual sectors. It is the weighted sum of changes in labor productivity in each sector of the economy, where the weights are the employment shares of each sector in the beginning period. Not surprisingly, it has come to be labeled the “within sector component” of productivity change. The second component captures the change in economywide labor productivity of labor reallocations across different sectors. It is the product of individual sector productivity levels in the end period with the change in employment shares across sectors. This is the “structural change component.” Among developing countries and across regions, the contributions of these two components to overall productivity change are strikingly different.

Between 1990 and 2010 the movement of workers from lower to higher productivity sectors—mainly industry—in Asia added substantially to economywide growth of output per worker. In this sense structural change was growth enhancing. Latin America was the polar opposite: there structural change was growth reducing. The share of workers in low productivity employment increased between 1990 and 2010, offsetting productivity improvements within sectors and reducing overall productivity growth.¹⁵

Africa's record of structural change is mixed. From 1990 through 1999 Africa looked more like Latin America. Output per worker increased within sectors while the share of workers employed in high productivity sectors declined. Up until the turn of the twenty-first century, structural change in Africa reduced growth of income per person.¹⁶

After 2000 labor in Africa began to move out of agriculture into more productive employment, but not into industry. Eight out of ten African workers who left agriculture ended up employed in the “market” services sector, mainly in trade, restaurants, and personal services.¹⁷ This amounted

to movement from very low productivity employment to only slightly higher productivity jobs. Output per worker in services in Africa is only about two times higher than output per worker in agriculture. Average labor productivity in manufacturing is more than six times that in agriculture.¹⁸

Africa has a rapidly growing labor force, but employment in manufacturing and in other activities with high value added per worker is growing slowly. This pattern of structural change has some important implications for job creation and poverty reduction (as we explore in the next section). In addition, there is a risk that structural change in Africa will run out of steam. Services have been absorbing workers faster than the services sector has been increasing output. The relative productivity level of market services fell from 3.0 times the total economy average in 1990 to 1.8 times in 2010, suggesting that the marginal productivity of new services workers is low and possibly negative.¹⁹ This raises the risk that without a more robust growth of industry, the structural change component of growth in Africa may diminish or once again turn negative.

Jobs and Poverty Reduction

Africa has enjoyed twenty years of sustained economic growth. Yet there are many worrying signs that this has not resulted in robust growth of “good” jobs—those offering higher wages and better working conditions—and rapid reductions in poverty.²⁰ Africa's structural pattern of growth during the last two decades is at least partly responsible. The sources of growth in the region's most rapidly growing economies have not been employment intensive. Lack of employment-intensive growth, together with the absence of progress in transforming traditional agriculture, are largely at the root of the region's slow pace of poverty reduction. Industrial development offers a high employment, high productivity path for job creation, and evidence suggests that it can accelerate the pace of poverty reduction.

Industry and Africa's “Employment Problem”

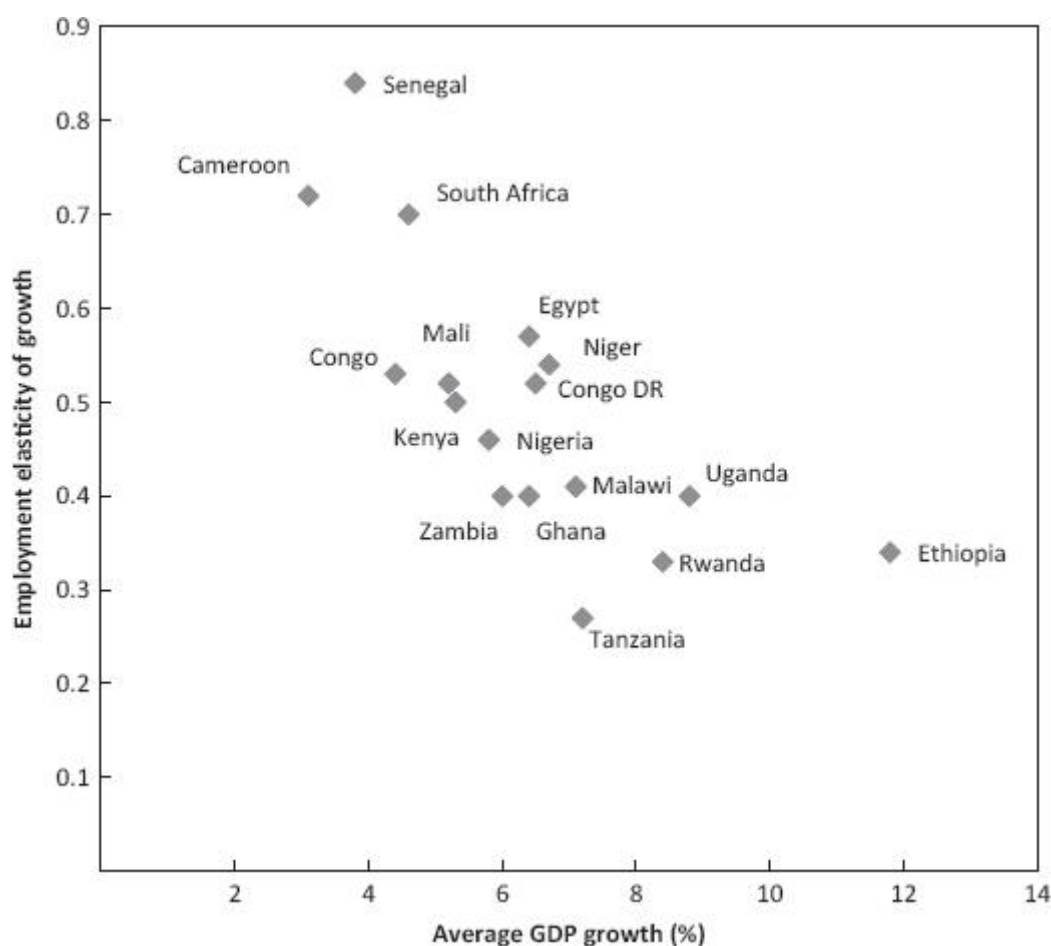
On the face of it, sub-Saharan Africa does not have a severe “employment problem.” In 2013 the overall unemployment rate for the region was 7.6 percent, compared with a global average of about 6 percent, and youth unemployment rates in many sub-Saharan countries are relatively low compared to world averages.²¹ Unemployment is low in Africa's lower income countries—falling in the range of 1 to 5 percent for countries such as Ethiopia, Ghana, Tanzania, and Uganda. But the averages are misleading. For the great majority of Africans the employment problem is more about the quality of the job than the absence of a job. Low unemployment frequently signals poor quality employment.

When an African worker finds a job it is likely to be of low quality in terms of wages, benefits, and job security. Where unemployment in Africa is low the informal sector is large, and many workers are forced into household, family, or self-employment because of the absence of a wage-paying job. The International Labor Organization (ILO) estimates that three out of four jobs in sub-Saharan Africa can be labeled “vulnerable” due to workers working on their own account or as unpaid family workers. In 2011 nearly 82 percent of workers in Africa were classified as working poor, compared to the world average of about 39 percent. The overwhelming majority of young workers in both rural and urban areas are engaged in informal self-employment. Fewer than one in five of Africa's young workers find places in wage employment.²²

Africa's poor employment outcomes largely reflect the reality that the region's fastest-growing economies—Ethiopia, Rwanda, Tanzania, and Uganda, among them—have the lowest responsiveness of formal employment to growth ([figure 1-1](#)). In fact, there is no statistical relationship in Africa between economywide growth and the rate of growth of formal employment.²³ This is a highly unusual finding. Globally, there is a statistically significant relationship between growth of GDP and employment growth. Between 1991 and 2003, for every 1 percentage point of additional GDP growth, total employment grew between 0.3 and 0.38 percentage points.²⁴

The case of Tanzania, one of the countries we studied under our Learning to Compete (L2C) program, makes the point more concretely. Tanzania has a young and rapidly growing population. Approximately 800,000 new workers enter the domestic labor market every year. The economy, however, is not creating that number of “good” jobs. In fact, Tanzania's performance in job creation has been among the most disappointing of the region's “growth miracle” economies. As the supply of workers seeking nonfarm employment has outpaced demand in the wage sector, many labor force participants have been left with no choice but to create their own jobs. Today, 5 million nonfarm businesses operate in Tanzania. This is one of the highest rates of business formation in the world (one for every four people), four times higher than in the United States and ten times higher than in France.²⁵

Figure 1-1. *Employment Elasticities and Growth in Africa, 2010*



Source: Page and Shimeles (2015).

The vast majority of these enterprises are in the household sector. Between 2000 and 2006, employment in the household enterprise sector grew by 13 percent, exceeding the overall growth in the labor force and the growth of wage employment. These are tiny firms consisting of a single entrepreneur, perhaps working with unpaid workers who are likely to be family members. The vast majority of household business owners tend to be subsistence entrepreneurs who have minimal business skills. More than two-thirds of household enterprises in urban areas were formed because of lack of any other job opportunities.²⁶

It is perhaps no surprise, then, that the political conversation in Africa often turns to the problem of “jobless growth.” Industry, including manufacturing, tradable services, and agro-industry, is a high productivity, employment-intensive sector into which labor can potentially flow. As we shall see in [chapter 2](#), it is a sector that has been growing more slowly than the economy as a whole for more than twenty years. The failure to industrialize is clearly a major part of Africa's employment problem.

*