

The potential of manufacturing and industrialization in Africa

Trends, opportunities, and strategies

Landry Signé

In collaboration with Chelsea Johnson

SEPTEMBER 2018

Prof. Landry Signé, Ph.D

David M. Rubenstein Fellow, Africa Growth Initiative, Brookings Institution
Distinguished Fellow, Center for African Studies, Stanford University
Andrew Carnegie Fellow, Carnegie Corporation of New York

In collaboration with

Chelsea Johnson, Fellow at the London School of Economics and Political Science

Acknowledgements

The author would like to express his sincere appreciation to the people who have made this work possible or provided improving feedback, including anonymous reviewers. Special thanks to Dr. Brahim S. Coulibaly, Dr. Eyerusalem Siba, Dr. Raoul Tamekou for their insightful comments. The author is also grateful to Merrell Tuck-Primdahl, Christina Golubski, Molli Ferrarello, David Batcheck, Dhruv Gandhi, Nirav Patel, Mariama Sow, Amy Copley, Christina Constantine, Zezhou Cai, and Wilfried Youmbi.

The Brookings Institution is a nonprofit organization devoted to independent research and policy solutions. Its mission is to conduct high-quality, independent research and, based on that research, to provide innovative, practical recommendations for policymakers and the public. The conclusions and recommendations of any Brookings publication are solely those of its author(s), and do not reflect the views of the Institution, its management, or its other scholars.

This paper was made possible in part by a grant from the Carnegie Corporation of New York (Andrew Carnegie fellowship) and the David M. Rubenstein fellowship at the Brookings Institution. The statements made and views expressed are solely the responsibility of the author.

Brookings recognizes that the value it provides is in its absolute commitment to quality, independence, and impact. Activities supported by its donors reflect this commitment and the analysis and recommendations are not determined or influenced by any donation.

Abstract

By 2030, business-to-business spending in manufacturing in Africa is projected to reach \$666.3 billion, \$201.28 billion more than in 2015. This report discussed the evolution and prospects of manufacturing and industrialization in Africa. It ultimately offers business leaders an overview of Africa's biggest opportunities in the manufacturing sector, discussing trends, drivers, perspectives, and strategies for effective investment by 2030. It provides policymakers with some options likely to attract private investors, accelerate manufacturing and industrial development, and contribute to growth and poverty alleviation, facilitating the fulfillment of the Sustainable Development Goals and the African Union's Agenda 2063. While policy solutions are likely to differ across countries, manufacturing and industrial development will be central to Africa's ability to meet its development goals.

Contents

1. Introduction	1
2. Evolution of manufacturing and industrialization in Africa: Facts and trends	3
3. The status of key drivers and policy constraints for manufacturing in Africa	7
4. Key players in Africa	12
5. Recurrent challenges	22
6. Effective strategies for investment	24
7. Looking to the future	27
References	29

1

Introduction

Among policymakers and scholars alike, a robust manufacturing sector is broadly understood as a fundamental path to economic growth and development.¹ The most recent illustration is the launch of the African Continental Free Trade Area (AfCFTA) in March 2018, a single market for goods and services in Africa that aims to unlock manufacturing potential and facilitate industrialization, driving sustainable growth and jobs among other objectives. The key boon of manufacturing is that it absorbs large swaths of workers and places them into productive and decent paying jobs. Throughout history, this exact recipe has transformed the

United States, United Kingdom, France, Japan, and Germany into some of the world's wealthiest nations. Most recently, a new age of industrialization has helped push China into one of the world's fastest growing economies boasting the largest middle class, with other Southeast Asian countries following closely behind. These are all examples of how industrialization can generate rapid structural change, drive development, and alleviate poverty and unemployment.

However, this narrative seems to exclude many African nations. Despite their manufacturing potential and promising trajectories, most African countries have remained relatively dearth of factories. This limited industrial development

¹ Clark (1940); Lewis (1954); Chenery (1960); Kaldor (1966); Kuznets (1966); Cornwall (1977).

represents a missed opportunity for economic transformation and quality employment generation that alleviates poverty.

The silver lining is the potential. Business-to-business spending in manufacturing in Africa is projected to reach \$666.3 billion by 2030, \$201.28 billion more than that it did in 2015.² Irene Yuan Sun, author and consultant, considers Africa to be “the world’s next great manufacturing center,”³ potentially capturing part of the 100 million labor-intensive manufacturing jobs that will leave China by 2030.⁴ This trend creates a huge opportunity for the continent, not only for countries such as South Africa, Egypt, and Nigeria (all regional outperformers in the Global Manufacturing Competitiveness Index), but also for newer players such as Ethiopia, Morocco, Rwanda, and others (all of whom have recently adopted policies enabling manufacturing and industrial development).

Today, leaders are increasingly realizing that manufacturing is a major factor in helping Africa achieve their goals of successfully reaching the next stage of economic development. The African Union has put the sector front and center in its Agenda 2063. African governments are seeking new and innovative ways to attract investment and nurture industry, implementing strategies that involve targeted investment in infrastructure, improved regional integration, and the establishment of special economic zones (SEZs) for priority subsectors.

However, in order to reach its manufacturing and industrial potential, much needs to be done by the public and private sectors to increase Africa’s economic complexity, diversity, competitiveness, and productivity. This report explores some of the key structural constraints that have prevented Africa’s manufacturing sector from maturing and from launching the same kind of economic modernization process witnessed in other developing regions. It also conducts a cross-national comparison of the manufacturing sector in Africa, providing illustrative examples of countries that

are experiencing four unique trajectories of industrial development, and identifying specific opportunities in each country based on the size and level of competitiveness of their manufacturing markets. Finally, with special attention to current major transformations, the report draws conclusions about the future of the manufacturing sector in Africa.

The report ultimately offers business leaders an accessible overview of Africa’s biggest opportunities in the manufacturing sector, discussing trends and perspectives by 2030. It provides policymakers with some options likely to attract private investors, accelerate manufacturing and industrial development, and contribute to growth and poverty alleviation, facilitating the fulfillment of the SDGs and the African Union’s Agenda 2063. While policy solutions are likely to differ across countries, manufacturing will be central to Africa’s ability to meet its development goals.

2 Landry Signé, “Capturing Africa’s High Returns,” Brookings Institution, March 14, 2018.

3 Irene Yuan Sun, “The World’s Next Great Manufacturing Center,” Harvard Business Review, May-June Issue, 2017, pp.122-129.

4 John Page, interview with Brookings Cafeteria Podcast, January 22, 2016.

2

Evolution of manufacturing and industrialization in Africa: Facts and trends

Modern industry contributes significantly to the accumulation of physical and human capital. It provides relatively well-paid jobs for large numbers of unskilled or under-educated workers—particularly those who are not integrated in the formal economy—which increases household income and, hence, domestic demand. In this way, industry generates substantial backward and forward linkages with other sectors, providing a wealth of opportunities for suppliers, distributors, retailers, and business services.⁵ For example, the inputs needed for different kinds of industrial production generates demand for agriculture, mining, and other raw materials, as well as for energy and information technologies, while it increases the supply of products for consumer markets, construction, and other sectors. Moreover, in macroeconomic terms, a strong manufacturing sector is argued to improve a country's external account balance

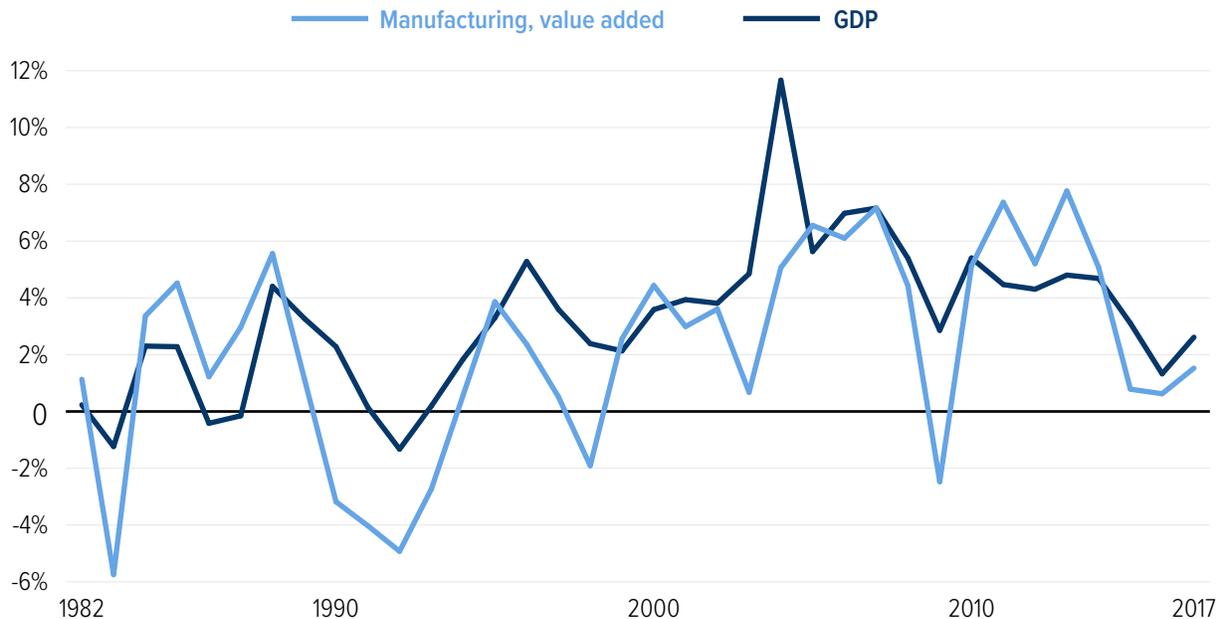
by decreasing imports and diversifying exports, thereby increasing resilience to external shocks as compared to reliance on primary commodities.⁶

Though African manufacturing grew in the immediate post-independence period, largely shaped by state-led and protectionist policies, by the mid-1980s, a series of external shocks—including oil price increases, commodity price decreases, real interest rate rises, withering public coffers, and the limitations of domestic markets—were major factors in industrial decline in the region. Though structural adjustment reforms like privatization of state-owned enterprises and trade liberalization, along with foreign aid, restarted African manufacturing in the 1990s, increased competition from foreign products and new pressures on African

5 Kusnets (1966); Tybout (2000); Yaw Ansu et al. (2016, p.7); Rodrik (2012).

6 KPMG (2013, p.1); Jostein Lohr H. (2015).

Figure 1. Annual GDP growth and growth in manufacturing output in sub-Saharan Africa, 1995-2016



Source: World Development Indicators.

currencies, such as devaluations,⁷ made these gains short-lived. By 2006 the share of manufacturing in GDP had declined to roughly 10 percent—the same as it had been in the mid-1960s.⁸ As Figure 1 illustrates, since the late-1990s economic growth rates in Africa reached impressively high levels (even during the 2008-2009 global financial crisis). Yet, until recently, growth in manufacturing has lagged behind that growth except in just a few exceptional markets.⁹ In 2017, manufacturing’s share of sub-Saharan Africa’s total GDP was just under 10 percent.

In terms of two other indicators of industrial development—manufacturing value added (MVA) and manufacturing exports—Africa lags far behind the rest of the world, even among developing countries. In 2017, sub-Saharan Africa’s MVA was only about \$145 billion dollars (see Figure 2). In contrast, developing countries in East Asia are far ahead and nearing OECD members.

Due to natural resource wealth in Africa, much of the region’s industrial production remains centered on resource-based manufacturing. Resource-based manufacturing accounts for approximately half of total MVA and manufacturing exports. Investment in manufacturing has also been uneven, with almost 70 percent of the continent’s manufacturing activities now concentrated in just four countries (see Figure 3).¹⁰ In fact, most of Africa’s total MVA is driven by the higher level of industrial development in North and South Africa.¹¹

Despite these worrying trends, manufacturing in Africa has grown 3.5 percent annually from 2005 to 2014—faster than it has in the rest of the world. Some countries, such as Nigeria and Angola, have experienced an increase in output of over 10 percent per year.¹² As a result, the value of

7 Kenneth B. Noble, “French Devaluation of African Currency Brings Wide Unrest”, *New York Times*, February 23, 1994, p.A6.

8 Yaw Ansu et al. (2016, pp. 1-2).

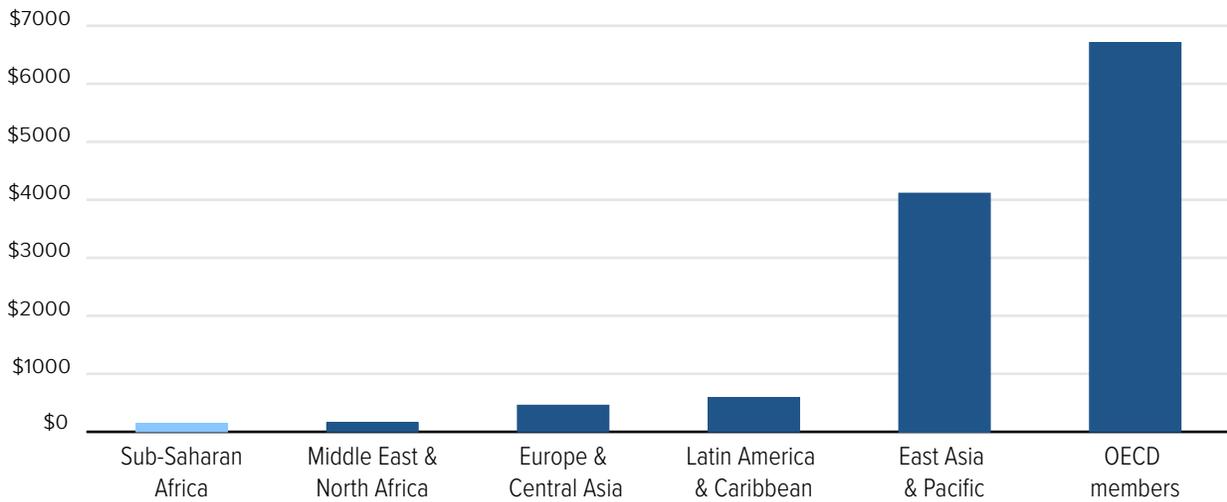
9 Outliers include Nigeria, Kenya, Tanzania, and Ethiopia, see ACET (2014, p.38).

10 KPMG (2015, p.6).

11 Taken as a whole though, the regional economic community of East Africa (EAC) surpasses the Southern Africa Development Community (SADC) in terms of manufactured good’s share of total trade, at 54% and 51% respectively, and both substantially exceed the rates in the Community of Sahel-Saharan States (34%) and the Economic Community of West African States (26%). (Conde Carlos et al., 2015, pp.2-4).

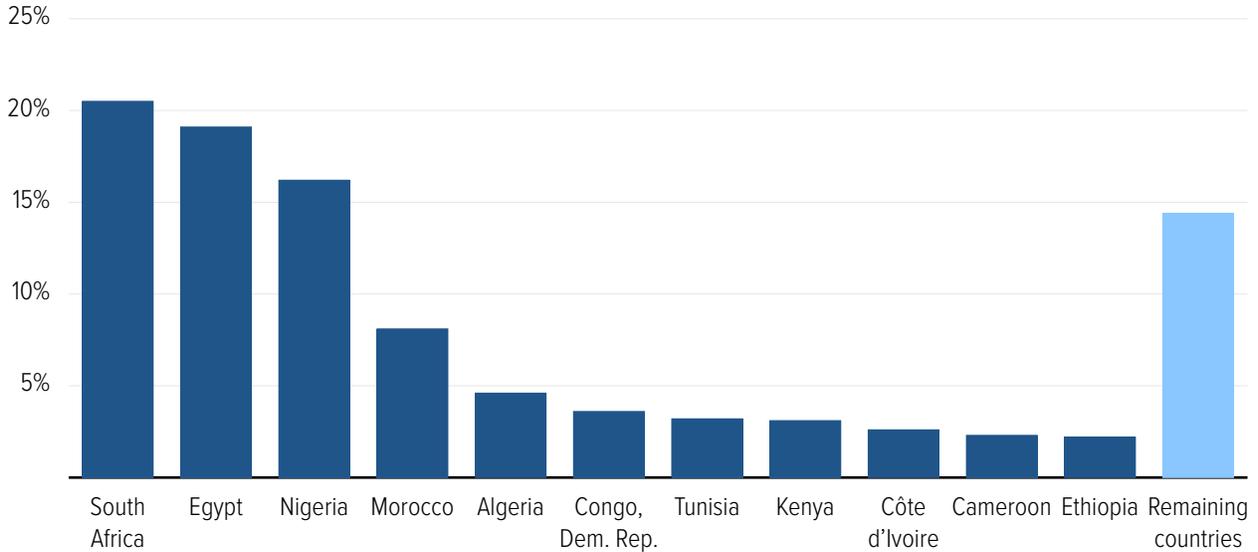
12 Balchin et al. (2016, p.7); Balchin et al. (2016, p.5); KPMG (2015, p.6).

Figure 2. Regional comparison of manufacturing value added, 2017



Source: World Development Indicators. For comparative purposes, high-income countries are excluded from all regional aggregates other than OECD. OECD data are 2016. All data are current USD.

Figure 3. Share of manufacturing value added in selected African countries



Source: World Development Indicators. All data are from 2017 except for Morocco, Tunisia, Cameroon, Swaziland, Mozambique, DRC, Lesotho, Chad, Mauritania, Burundi, Seychelles, and Liberia, which are 2016, and Gabon, Central African Republic, and Comoros, which are 2015. Angola, Eritrea, Madagascar, Mali, Somalia, South Sudan, Sudan, and Libya are omitted due to lack of recent data.

production in sub-Saharan Africa has increased, from \$75 billion in 2005 to over \$130 billion in 2016. Moreover, manufacturing exports have increased even more rapidly than total output, at a compound annual growth rate of 9.5 percent, with shipments of heavy manufactures—such as transport vehicles, appliances, electronics, and industrial equipment—expanding by an impressive 14 percent.¹³ Along with upstream and downstream sectors like construction and extraction, manufacturing is now among the top sectors for investment flows into Africa, accounting for 22 percent of total foreign direct investment (FDI) in 2015.¹⁴

Thus, there is still significant room for growth in African manufacturing within the continent. Intra-African trade in manufactured goods has already increased from 10 percent of total trade in 2000 to about 16 percent in 2014. In order to support that growth, African regional bodies and governments are breaking down trade barriers, improving financial structures, and investing public resources in much-needed infrastructure—especially transport and energy networks and the Internet.¹⁵

The proposed AfCFTA is key to this strategy. It creates a single continental market for goods and services as well as a customs union with free movement of capital and business travelers. The AfCFTA will accelerate continental integration. By promoting intra-African trade, the AfCFTA will also foster a more competitive manufacturing sector and promote economic diversification. The removal of tariffs will create a continental market that allows companies to benefit from the economies of scale. If successful, Africa's manufacturing sector is predicted to double in size, with annual output increasing from \$500 billion in 2015 to \$1 trillion in 2025 and creating an additional 14 million stable, well-paid jobs.¹⁶ If all 55 countries join, this will be one of the world's largest free-trade areas in terms of the number of countries, covering more than 1.2 billion people and over \$4 trillion in combined consumer and business spending. The potential for the CFTA is big for both structural transformation and poverty alleviation in Africa.

Some studies show that by creating a pan-African market, the CFTA could increase intra-Africa trade by about 52 percent, resulting in an increase of African manufacturing exports. Right now, on average, manufacturing only represents about 10 percent of total GDP in Africa, lagging behind other developing regions. A successful CFTA could play a large role in reducing this gap.

13 Bokaly (2011).

14 FDI Intelligence (2016, p.8).

15 Africa Union Commission (2015, p.5).

16 McKinsey & Company (2016, pp.1, 8-9).

3

The status of key drivers and policy constraints for manufacturing in Africa

While most developing regions' industrialization has started to plateau, Africa contains a wealth of favorable factors—particularly the availability of low-cost labor and an abundance of natural resources and raw materials—that signal a revolution in manufacturing is imminent. A recent survey from the Global Manufacturing Competitiveness Index indicates that the most crucial drivers of growth and investment in manufacturing are, in descending order: human capital (talent and productivity), cost, supplier networks, and domestic demand.¹⁷ This section addresses the role of each of these factors as determinants of industrialization, as well as discussing their current and future trajectories with empirical data from Africa.

Human capital. At its most basic level, and particularly for labor-intensive subsectors, industry is only as healthy as the population that comprises

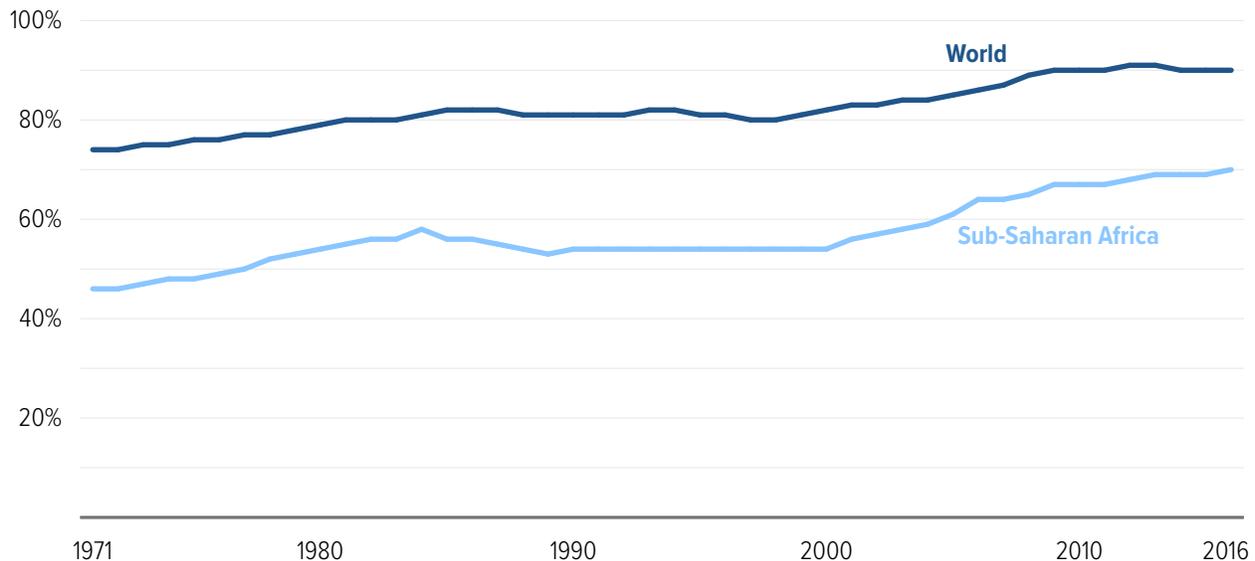
its labor supply. The quality of a country's workforce, or its stock of human capital, is related to the country's flexibility, productivity, and ability to innovate.¹⁸ Illiteracy, low education levels, and poor health conditions among the population hinder an individual factory's productivity and its ability to absorb new technologies, creating a negative impact on the diversification of manufactured goods in the whole economy. Moreover, only through continuous innovation, either in formal product development or management process improvement—which need quality human capital—, can growth be achieved over the long term.¹⁹

¹⁷ Deloitte (2016, p.1).

¹⁸ Richard Nelson and Edmund Phelps (1966); Robert Evenson and Westphal (1995); Wolfgang Keller (1996); Tybout (2000).

¹⁹ O'Regan, Ghobadian, and Gallear (2006); Schumpeter; Narayanan (2001); Bessant and Tidd (2007); Prakash and Gupta (2008); Wheelen and Hunger (1999); Bessant and Tidd (2007).

Figure 4. Primary school completion rate for 15-24 year olds



Source: World Development Indicators December 2017.

The evidence supports the impact of human capital stock on manufacturing growth in Africa. For example, an estimated 40 billion work hours are lost each year in Africa due to something as simple as a lack of fresh running water in the household.²⁰ Obstacles like this, combined with the cost and limited availability of safe medicines or health facilities, make disease and illness a constant constraint on the productivity of the African workforce.²¹ Education and experience are particular constraints to growth among small and medium sized enterprises (SMEs). In Ghana, for example, owners and workers of SMEs have, on average, five years of work experience—just half that of owners and workers in large firms.

At the same time, however, The Economist recently concluded that Africa “is well on its way to developing the human capital that is required to industrialize.”²² Standards of education on the continent are improving, and the share of the population completing a primary education has risen continuously over the past 40 years—although it has remained roughly 20 percent lower than the global average (Figure 4). This is crucial because a

number of studies have found that more-educated entrepreneurs and managers in Kenya and Zimbabwe have firms that grow more rapidly.²³ Moreover, many emerging markets in Africa already rank much higher in terms of innovative capacity than their education indicators would predict, such as South Africa and Kenya (33rd and 34th in the world for innovation, respectively). Others, like Morocco (129th in the world), still have a long way to go, and improvement in its innovative capacity will hinge on progress in education.²⁴

In order to tap the full potential of Africa’s human capital, policymakers should adjust education curricula to ensure that skills are adapted to the market. Policymakers should revisit curricula to focus on skills acquisition. They should also build capacity for entrepreneurship and self-employment through three main streams: (1) business training at an early age and skills upgrading at an advanced one; (2) better promotion of science, technology, engineering, entrepreneurship, and mathematics; and (3) vocational and on-the-job trainings.

20 KPMG (2014, p.4).

21 UNIDO (2015, p.3).

22 The Economist (2016).

23 McPherson (1991); Mead and Liedholm (1998); Parker (1995). Note that the findings apply to secondary education attainment, while primary education is shown to have no effect.

24 KPMG (2013, p.8).

In addition, policymakers should also favor the continental migration of highly skilled workers as an immediate solution for pressing human capital needs.

Cost. Cost effectiveness is widely viewed as the primary constraint on growth in manufacturing for firms of all sizes, but particularly for SMEs.²⁵ For example, Radelet and Sachs (1998) have produced a wealth of research linking shipping costs to a country's prospects for growth in manufactured exports, as well as to its overall economic growth. These transport costs are largely determined by structural constraints, such as access to seaports, but also by macroeconomic policies, bureaucratic red tape, and the quality of infrastructure.²⁶ Thus, governments play a substantial role in determining the costs of doing business in any country. However, due to weak capacity, governments in many developing countries cannot reduce the costs of doing business. Therefore, firms will always seek to find ways to compensate for high transport costs in order to compete in world markets, which can result in managers paying lower wages or focusing on e-commerce.²⁷

Like other developing regions, Africa has long been associated with substantial gaps in port, road, and power infrastructure. Not to mention its notoriously high levels of corruption and bureaucratic restrictions, which increase the cost of distribution.²⁸ On the other hand, Africa is an increasingly cost-effective location for manufacturers, especially in light of current demographic trends.²⁹ The population living on the continent will be larger than that of either India or China by mid-century, with approximately 1.2 billion people, and Africa's share of the global working-age population (15-64 years) is projected to double to roughly 20 percent by 2050.³⁰ Meanwhile, improvements in bureaucratic and tax regulations, increasing public (and private) investment in infrastructure, and the wave of technology sweeping across the continent are all helping reduce the cost of doing business in Africa.

25 O'regan et al. (2006)

26 Tybout (2000); Brunetti, Kisunko, and Weder (1997); World Bank (1994).

27 O'regan et al. (2006).

28 Brunetti et al. (1997).

29 The Economist (2016).

30 ACET (2014, p.14); McKinsey & Company (2016, p.36).

In particular, the exponential growth in mobile technologies has enabled African businesses to "leapfrog" previous technologies in order to access consumers and improve business-to-business networks. While a tiny fraction of African households are connected with the traditional landline telephones for communication, the penetration of smartphones is expected to increase rapidly, from 18 percent in 2015 to 50 percent in 2020.³¹ In fact, there are parts of Africa that still lack running water or electricity but already have reliable access to the internet.³² This mobile ecosystem is estimated to contribute at least 7 to 8 percent to Africa's GDP in the coming years, as the recent rise of e-commerce, e-banking, and mobile and internet communication is helping to facilitate business-to-business transactions along the supply chain.³³

In terms of the role of governments, many countries in Africa are working to establish special economic zones (SEZs)³⁴ to empower manufacturing companies to capitalize on higher quality infrastructure, tax benefits, protection from import competition, and duty-free movement of goods. Given country-level differences in natural endowments, these zones encourage countries to nurture certain industrial subsectors in order to take advantage of their own competitive advantage and drive growth.³⁵ Countries as diverse as Ethiopia (since 2015), Zambia (2006), and Nigeria (1992) have exhibited strong political commitment to implementing their SEZs, although there has been variation in terms of coordination and resource mobilization. For example, in all three countries, SEZs are part of national development strategies, and an SEZ policy framework and dedicated institutions for managing the SEZ program are in place. However, only in Ethiopia and Zambia, SEZs have been consistently inaugurated at the Head of State and government level and are regularly visited and promoted by high-level

31 Ernst & Young (2014, p.14); McKinsey & Company (2016, p.7); Business Sweden (2016, p.3).

32 Ernst & Young (2014, p.42).

33 McKinsey & Company (2016, p.7).

34 As per Foreign Investment Advisory Service (FIAS), SEZs are generally defined as geographically delimited areas administered by a single body, offering certain incentives (generally duty-free importing and streamlined customs procedures, for instance) to businesses which physically locate within the zone.

35 IPRCC & UNDP (2015, pp.10-11).

government officials. In Nigeria, however, coordination challenges occur between the federal and state levels of government.

Supply networks. A third factor affecting growth in manufacturing relates to the quality and availability of inputs in the local market, such as raw materials and equipment. Although there is significant variation across countries, the African region as a whole has a wealth of natural resources that are vital inputs for various manufacturing subsectors. One example is coltan, which is used in the production of electronic goods and is rich in the Democratic Republic of Congo, Rwanda, and Mozambique.³⁶ However, as in other developing regions, the legacy of late-20th century protectionist industrialization policies—whether oriented towards producing for export or import substitution—has caused the sector to remain relatively insulated, despite increasing attempts to scale back trade barriers since the 1990s.³⁷ As a result, the availability of specialized machinery and equipment is relatively limited, and producers are often forced to rely on imperfect substitutes or import the necessary inputs at extra expense.³⁸

Contrary to common perceptions, however, Africa’s business-to-business market is already relatively well developed and growing rapidly, which signals that beneficial supply networks do exist currently. Domestic companies spent roughly \$2.6 trillion in 2015, half of this on materials, and the total expenditure is expected to rise to \$3.5 trillion by 2025.³⁹

Moreover, recognizing that backward integration—whereby a country sources foreign inputs for its own production—is among the largest contributors to increasing productivity and value added in exports, many African countries are seeking to increase the size of the supply market by easing trade restrictions.⁴⁰ Increasing integration into international trade networks allows countries to overcome the constraints of the domestic labor force by importing technologies of innovation and

encouraging knowledge transfer. Additionally, it increases countries’ ability to specialize—since necessary inputs can be sourced from neighboring markets, rather than being produced domestically—which is viewed as an essential determinant of growth in manufacturing for small and under-developed economies.⁴¹

As mentioned above, the proposed CFTA is an effort taken by African countries to create a continental market and bolster an international negotiation block. One of the CFTA’s goals is to “expand inter-Africa trade through better harmonization and coordination of trade liberalization and facilitation regimes and instruments across Regional Economic Communities (RECs) and across Africa in general.”⁴² Analysts predict that with the facilitation of the CFTA, the rapid expansion of intra-continental and regional trade over the next several decades, which accounts for just 11 percent of all African trade currently, will lead to a significant decrease in transit costs and an increase in the availability of intermediate inputs for production.⁴³

Domestic demand. The limited size of the domestic market for manufactured products is viewed as a significant constraint to growth in developing countries. Where income levels are low, household consumption is limited to basic subsistence needs, so all but the most essential manufactured products are exported to distant, wealthier markets.⁴⁴ At the same time, however, income levels and household spending patterns are improved by growth in manufacturing more than any other individual economic sector, since it helps to create a large number of stable and well-paying jobs among previously poor and underemployed demographic groups.⁴⁵

Income levels in Africa have already started to rise substantially, with household consumption projected to grow by an impressive 3.8 percent to reach nearly \$2.1 trillion per year by 2025; in some

36 The Economist (2016).

37 Maurice Schiff and Alberto Valdez (1992, ch. 2); Refik Erzan et al. (1989); Francis Ng (1996); Tybout (2000).

38 Tybout (2000).

39 McKinsey & Company (2016, p.12).

40 Conde Carlos et al. (2015, pp.2-4).

41 Chenery (1997); Ernst (2002).

42 African Union, “CFTA-Continental Free Trade Area,” (<https://au.int/en/ti/cfta/about>).

43 Ernst & Young (2014, p.42); KPMG (2013, p.4).

44 Conde Carlos et al. (2015, pp.4-5); Tybout (2000); Chenery (1997).

45 Kusnets (1966); Tybout (2000); Yaw Ansu et al. (2016, p.7); Rodrik (2012); Chenery (1997).

countries, such as Nigeria and Tunisia, incomes are increasing even more rapidly. Moreover, in the next 20 years the majority of Africa's rapidly growing population will live in sprawling urban areas; thus, nearly 600 million people on the continent will have daily access to formal markets and retail outlets.⁴⁶ This increasingly young and cash-conscious population is further generating a huge and untapped market for affordable, durable telecommunications goods—especially smart phones, but also tablets and computers—and most of the resources necessary to make these products are already extracted in Africa.

Because of these trends, most countries will experience rapid growth in demand for manufactured products in the near future, with the largest increases likely to occur in the processed food and beverages industry: Analysts predict that revenues will increase in this subsector by \$120 billion over the next decade. Meanwhile, “affluent” consumers are expected to spend an additional \$200 billion per year from now until 2025, with approximately one-in-five Africans spending more than 70 percent of their income on discretionary items by 2025, signaling growing demand for electronics, appliances, and labor-intensive goods like clothing and footwear.⁴⁷ The latter subsector alone is estimated to increase revenue streams by \$27 billion by 2025.⁴⁸ Meanwhile, because cement is necessary for factory construction and other infrastructural projects, revenues from cement production are likely to grow by up to 72 billion by 2025.⁴⁹

In summary, the current trends in cost effectiveness, supply networks, and domestic demand indicate that Africa is poised for rapid industrialization in the coming years. In the near future, the region will possess a more productive and cost-efficient workforce, improved transport infrastructure and regulations, larger and more developed supply networks, and consumer markets to support a range of manufacturing subsectors. In Côte d'Ivoire, for example, the impressive projection of about 7 percent annual GDP growth through 2020 is attributed to about a 10 percent increase in the

value of household consumption, growing access to markets across the Economic Community of West African States (ECOWAS), increasing public investment in infrastructure and agribusiness, and a shift in the workforce from farming (currently 70 percent of the workforce) to formal employment.⁵⁰

46 ACET (2014, p.14); McKinsey & Company (2016, p.36).

47 McKinsey & Company (2016, p.8).

48 McKinsey & Company (2016, p.16).

49 McKinsey & Company (2016, p.16).

50 Business Sweden (2016, p.6).

4

Key players in Africa

Due to the large amount of capital that is necessary for entering and operating in Africa's manufacturing sector, foreign businesses have tended to dominate the market since the colonial period. In absolute terms, Foreign Direct Investment (FDI) in manufacturing has been relatively low, but has begun to increase rapidly in recent years. In fact, manufacturing is now the "top business function in the region by capital investment," receiving roughly one-third of total FDI to the region, which is second to only the oil and gas sector.⁵¹ Moreover, despite the common perception that foreign manufacturers tend to avoid investing in sub-Saharan Africa, FDI has continued to increase steadily over the past two decades, even as MVA has stagnated (see Figure 5).

Many of the current FDI trends are occurring due to rising wages in East Asia, as many Asia-based companies are increasingly shifting manufacturing opportunities to Africa.⁵² FDI from Chinese firms has increased by nearly 200 percent in recent years, with a 106 percent increase in project numbers in 2016. In addition, African production for Chinese markets has increased by a compound annual growth rate of 20 percent per year since 1980, with the vast majority of this growth occurring over the last decade.⁵³ Singapore's Tolaram, for example, has ratcheted up interest in West Africa and currently has full ownership of the newly developing Lagos Free Trade Zone in Nigeria, while several SEZs under development in Zambia are funded by Malaysian and Japanese companies.⁵⁴

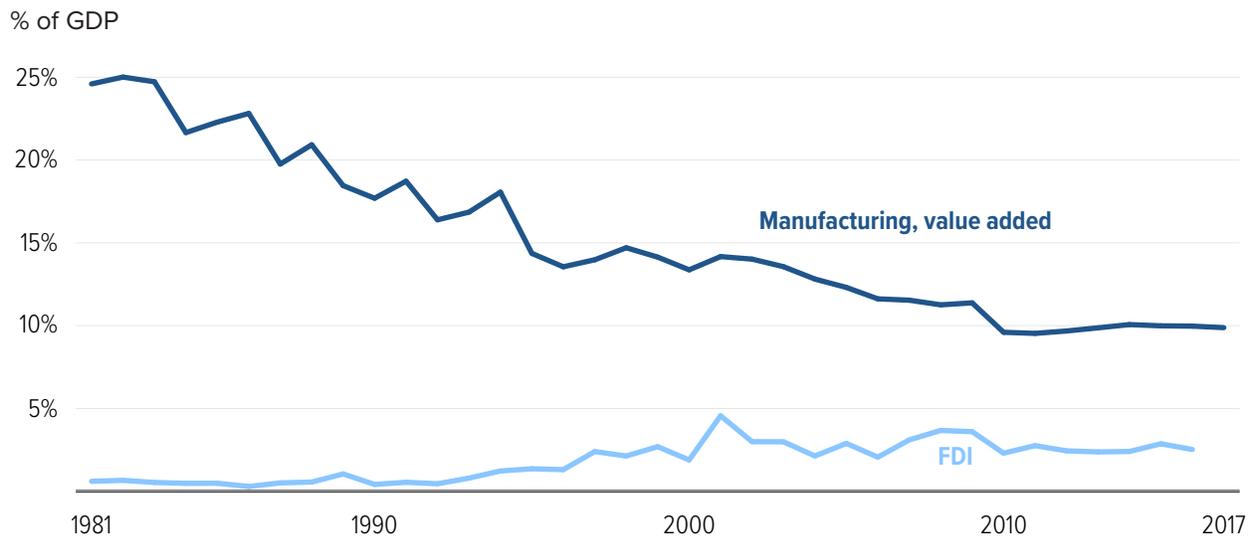
51 FDI Intelligence (2015, p.4).

52 The Economist (2016).

53 Ernst and Young (2014, p. 9); Ernst and Young (2014, p. 18).

54 IPRCC & UNDP (2015).

Figure 5. Manufacturing value added and foreign direct investment in sub-Saharan Africa



Source: World Development Indicators.

Despite rapidly increasing investment interest from the East, the primary source of manufacturing FDI in Africa has traditionally come from Europe and the OECD countries, especially the former colonizers (see Table 1). France was the number one source of FDI into Africa in 2014, with investment capital valued at \$18.3 billion, and remained among one of the top ten source countries in 2015 and 2016. Combined with the United Kingdom and Italy, the major colonial powers accounted for roughly 30 percent of the value of all FDI into Africa in 2015.⁵⁵

Like the increasing interest from Asia, new Western investors are turning to Africa due to its growing, youthful, and affordable workforce.⁵⁶ For example, Bosch recently launched its first foray into Africa with seven pilot projects, and European retailers Sweden's H&M and Ireland's Primark already source much of their clothing materials from countries like Ethiopia. FDI from the United States was up by nearly 50 percent in 2014, with 97 investment projects, and has been the most of any single country since 2014. American conglomerate General Electric is constructing a quarter-bil-

lion-dollar factory in Nigeria to produce electrical gear, and even luxury producers are starting to acknowledge opportunities for small-scale production in Africa, such as New York's Madecasse chocolatier, which recently increased its workforce in Madagascar by 650 employees.⁵⁷

At present, intra-African investment is becoming an increasingly significant source of FDI in the region—accounting for almost 40 percent of total manufacturing investment in Rwanda, for example. South African companies have traditionally been the largest source of intra-African investment, with \$4.8 billion and nearly 7,000 new manufacturing jobs created in 2014. Morocco is the fastest-growing investment investor, but it remains seventh overall among African countries.⁵⁸ Unlike foreign investors, African manufacturers more often target their operations toward production for the African market. For example, South African Seemhale Telecoms has plans to produce cheap and durable mobile phones, while Kenya's Mobius Motors is doing the same with cars.⁵⁹ On the other hand, small-scale African artisans—such as Kenya's Ali

55 FDI Intelligence (2016, p. 6).

56 FDI Intelligence (2015, p.14).

57 The Economist (2014).

58 FDI Intelligence (2015, p.6).

59 The Economist (2014).

Table 1a. Major sources of foreign direct investment in Africa's manufacturing sector in 2015

Country	Size of Investment (\$US billion)	Market share in Africa (%)	Number of investment projects in 2015
United States	6.8	10%	93
France	5.7	9%	53
United Kingdom	4.9	7%	76
United Arab Emirates	4.2	6%	45
Germany	2.6	4%	37
China	2.3	3%	32

Source: The Africa Investment Report. 2016. FDI Intelligence, p. 6.

Table 1b. Major sources of foreign direct investment in Africa's manufacturing sector in 2016

Country	Size of Investment (\$US billion)	Market share in Africa (%)	Number of investment projects in 2016
China	36.1	38.4%	66
United Arab Emirates	11.0	11.7%	35
Italy	4.0	4.3%	20
United States	3.6	3.9%	91
Japan	3.1	3.3%	27
United Kingdom	2.4	2.5%	41
France	2.1	2.2%	81

Source: EY'S Attractiveness Program Africa "Connectivity redefined". 2017. Ernst & Young, p. 20.

Lamu, which produces specialized handbags and textiles—are capitalizing on tourism and the internet to access new export markets.⁶⁰

FDI in Africa's manufacturing sector tends to be concentrated in just a handful of countries, and the total level of accumulated FDI is dominated by a few substantial investments (see Figure 6).⁶¹ Two-thirds of the value of African manufacturing production is located in Nigeria, South Africa, Egypt, and Morocco; this figure increases to more

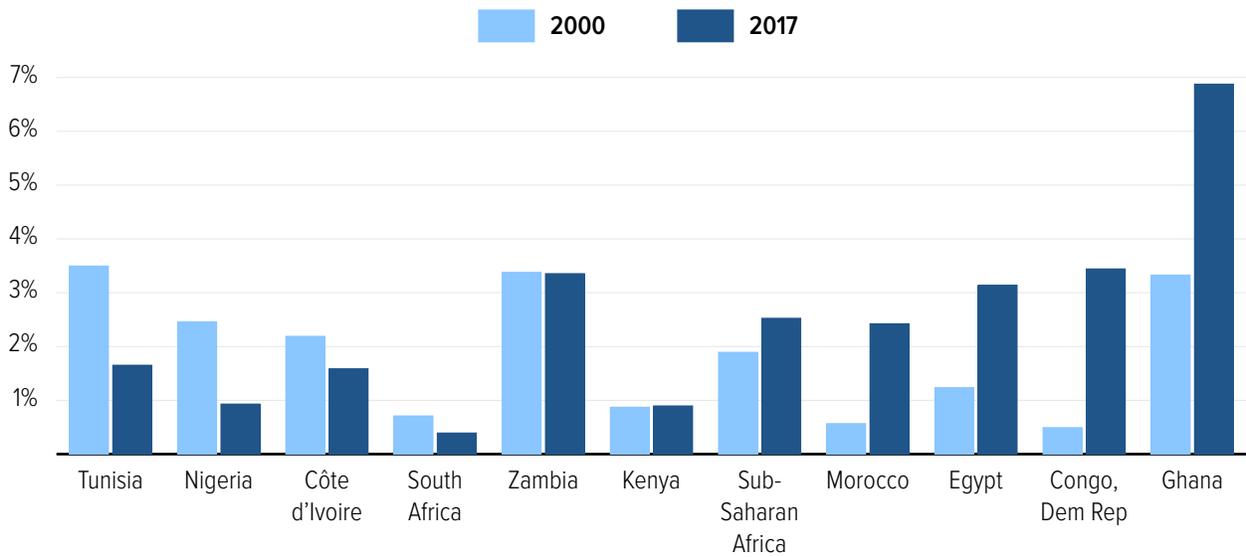
than 80 percent when Angola, Tunisia, Kenya, Côte d'Ivoire, Ghana, Zambia, and the Democratic Republic of the Congo (DRC) are included.⁶²

Many of these countries' economies are more often associated with mining and resource extraction, and as such, manufacturing activities have developed around the production of equipment and other industrial inputs necessary to support those sectors. In fact, the most rapid growth in manufacturing over the past decade has occurred in Angola (18.3 percent per year) and Nigeria (11.8 percent)—two notable resource-dependent countries. Angola's manufacturing sector, with

60 The Economist (2014).
61 Balchin et al. (2016, p.5).

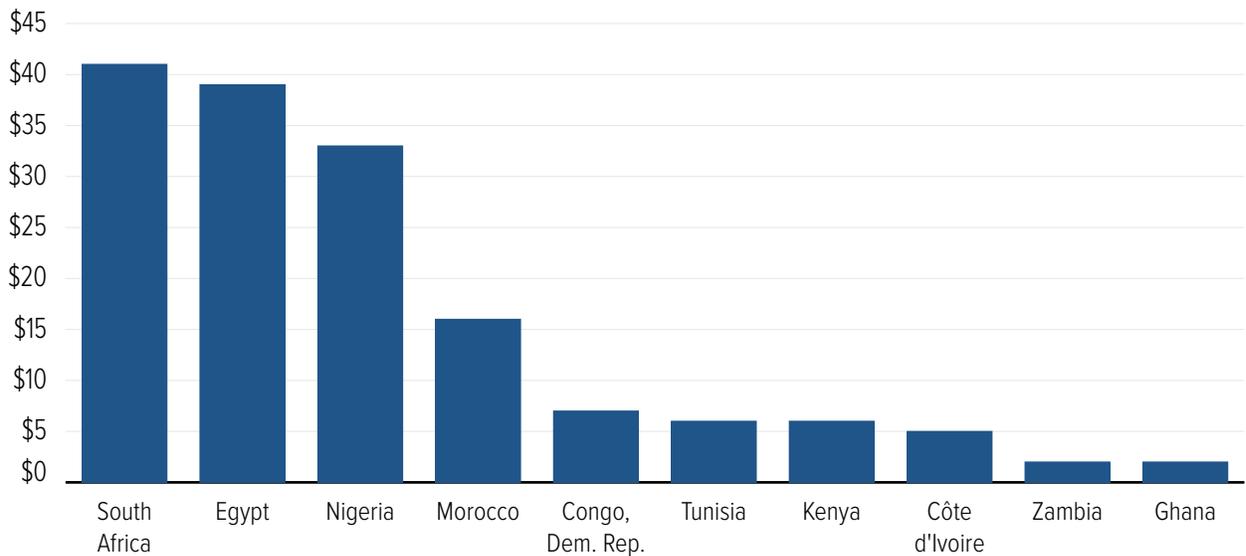
62 KPMG (2015, p.6).

Figure 6. Comparison of top FDI recipients, 2000 and 2017



Source: World Development Indicators. All data are 2017 except for Tunisia, Cote d'Ivoire, sub-Saharan Africa, and DRC, which are 2016.

Figure 7. Manufacturing value added for top producers in Africa, 2017



Source: World Development Indicators. All data are for 2017 except for Morocco and Tunisia, which are 2016.

its industrial share of GDP nearly doubling since the mid-2000s and \$16 billion in FDI reported in 2014, is now the fifth largest on the continent in output, having recently surpassed Tunisia. Companies from Portugal, its former colonizer, have traditionally dominated Angola's FDI and heavy manufacturing still makes up 40 percent of the country's imports bill. The government recently recognized the potential for production growth via diversification and import substitution as part of its Plano Nacional de Desenvolvimento (PND). As part of the plan, beginning in early 2015, cement imports were banned, and domestic production capacity for cement was expanded to 8 million tons per year (with prior demand at just 6.5 million tons).⁶³

The DRC is another extractive-based industrializer on the continent whose manufacturing accounts for more than 16 percent of its GDP, among the highest on the continent. However, light and heavy manufacturers account for just three percent of total export revenues, meaning that most of its domestic factory output is used for servicing domestic needs. Factory production has contributed little to economic growth because of poor linkages with local markets and overwhelming reliance on imports.

There are a growing number of successful industrial markets in Africa that are not directly related to extraction, such as leather in Ethiopia, garments in Lesotho, automobiles in South Africa, and pharmaceuticals in East Africa.⁶⁴ Already a major player in manufacturing on the continent, Egypt experienced the largest absolute increase in FDI in 2014, with nearly \$18 billion in new investments and 51 new manufacturing projects planned—a 42 percent increase since 2013. Although, the rate of increase in investment was even higher in Morocco (59 percent), Ethiopia (100 percent), and Mozambique (67 percent) for similar periods.

In fact, as Figure 7 illustrates, some of Africa's frontier markets for manufacturing have exhibited the greatest gains in FDI since 2000. Meanwhile, a number of well-known multinational producers have set up shop in Ghana, including Unilever

(consumer goods), PZ Cussons (health care products), Fan Milk (beverages), and Mahindra (vehicles). Even many factories that had been previously dormant, such as the Volta Aluminum Company, have relaunched production. With substantial opportunity for growth into the future, many of these mid-size markets are already rapidly climbing the rankings among the top manufacturing countries in Africa.

63 KPMG (2015, p.11).

64 UNIDO (2015, p.6); KPMG (2013, p.4).

4

Opportunities: Key sectors and countries

As we have described, Africa's competitive advantage in manufacturing is currently being driven by its demographic make-up and resource abundance. Therefore, prime opportunities for investment are currently concentrated in industries that are either labor-intensive or that require inputs of raw materials that can be sourced locally, such as minerals and agricultural products. Thus, the manufacturing sub-sectors that have benefited the most from the rise in FDI in recent years include software (up 72 percent), auto components (133 percent), industrial and business machinery (378 percent), and chemicals production (2000 percent).⁶⁵ At the same time, growth in manufacturing in the coming years will be driven by increasing linkages among African countries and with the rest of the world and growing consumer markets on the continent. Analysts predict that the fastest growth over the next decade will occur in

agro-processing (projected revenue increase of \$122 billion), cement production (\$72 billion), and clothing and footwear (\$27 billion) subsectors.⁶⁶ For companies looking to invest in Africa, therefore, consumer-facing and infrastructure-related industries look to be among the most valuable in terms of annual revenue by 2025.⁶⁷

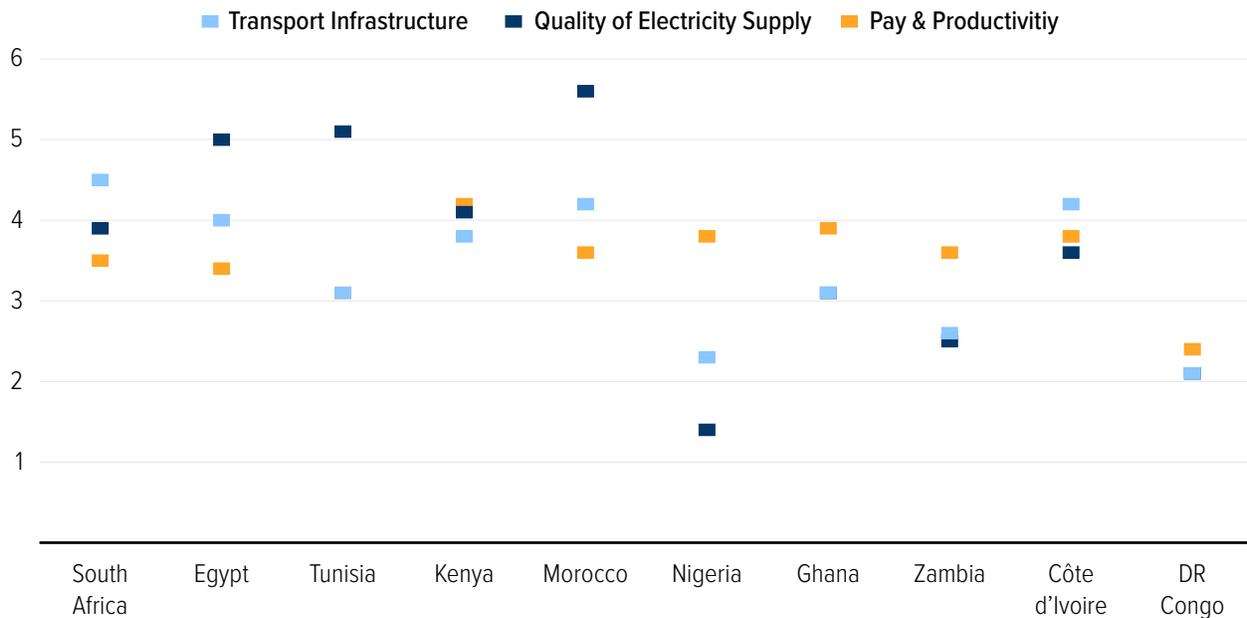
In terms of variation across countries, investment opportunities are largely shaped by structural factors such as resource endowments and the size of the domestic market—both in terms of consumer demand and labor supply. In addition, though, the favorability of manufacturing investment is often affected by the national policy on investment climate. South Africa, for example, has had marked success in attracting investment since adopting its Industrial Policy Action Plan (IPAP), which seeks

65 FDI Intelligence (2015, p.10).

66 McKinsey & Company (2016, pp.9, 16); Balchin Neil et al. (2016, p. 10).

67 McKinsey & Company (2010, p.1).

Figure 8. Global Competitiveness Index scores on key indicators for manufacturing investment



Source: Global Competitiveness Index 2017-18, World Economic Forum. Data for Cote d' Ivoire are from 2016-17.

to coordinate various ministries and policy areas and to subordinate trade and other economic goals to the exigencies of industrialization.⁶⁸ The Zuma administration created a number of SEZs in order to spur employment and bolster investment in specific, targeted subsectors, especially steel (Saldanha) and automotives (Gauteng and Eastern Cape).⁶⁹

In order to compare and highlight some specific manufacturing investment opportunities, we first provide an overview of the 10 largest manufacturing markets in Africa—in terms of the current value of manufacturing output—across key indicators of market competitiveness.⁷⁰ Figure 8 compares countries' scores for the pay versus productivity of the labor force,⁷¹ quality of electricity supply, and quality of transport infrastructure, which is an average of the individual scores for the

quality of roads, railroads, ports, and air transport infrastructure. Not surprisingly, those countries that score best across all three variables are also those with the largest and most well developed manufacturing sectors to date, namely South Africa, Egypt, Tunisia, Morocco, and Kenya. At the same time, though, several frontier markets exhibit strong foundations for manufacturing investment, especially in terms of the value of the workforce.

Using these data, we classify country cases in terms of the relative size of the manufacturing market and its competitiveness. The threshold for the size of the manufacturing market is drawn at about \$10 billion in annual output, while countries are considered to have highly competitive markets for investment if the average score across the three indicators summarized in Figure 8 is greater than or equal to three. The two-by-two categorization of these 10 countries is provided in Table 2. In the subsequent discussion, we select one country from each box—specifically, Morocco, Kenya, Zambia, and Nigeria—in order to discuss specific opportunities for investment in light of the unique structural and policy-related dynamics of each case.

68 Ngulube B. (2014, p.4).

69 KPMG (2015, p.9).

70 The data come from the World Economic Forum's Global Competitiveness Index (2017-18), which scores countries from 1-7 on each indicator. Note that Angola is excluded due to lack of data.

71 According to the World Economic Forum, this indicator means to what extent pay is related to employee productivity.

Table 2. Comparison of current market size and competitiveness of Africa's 10 largest manufacturing countries

	Large market	Small market
High competitiveness	Egypt South Africa Morocco	Tunisia Kenya Côte d'Ivoire Ghana
Low competitiveness	Nigeria	Zambia DR Congo

Morocco. Manufacturing already accounts for more than 15 percent of GDP and provides 10 percent of formal employment in Morocco, with roughly one-third of the sector concentrated in textiles. Some of the more traditional subsectors—including food, fertilizer, steel, and textiles and clothing—have struggled in recent years due to declining demand from the EU and increasing competition from Asian imports. While the manufacturing sector has exhibited real annual growth of only 2.4 percent in the past 10 years, growth in production volume has outpaced the rest of the North African region, and a few emerging subsectors have expanded rapidly as foreign investors have hastened to take advantage of Morocco's low wages and free trade zones.⁷² In response to positive reforms in bureaucratic regulations, such as reducing the length of time commercial disputes run through the courts, Morocco shot up the African FDI ranks from 14th in 2006 to 3rd in 2015.⁷³

Specifically, the aeronautics industry grew by 15-20 percent per year between 2008 and 2013. More than 100 aeronautics companies now operate in Morocco, many of which are concentrated in the Midparc Casablanca Free Zone including Boeing and Bombardier. The government has also responded to calls from the industry for investment in the human capital needed to support innovation and engineering by launching the Institut des Metiers de l'Aeronautique in 2011.

72 KPMG (2015, p.10).

73 FDI Intelligence (2015, p.4).

The production of automobile components was a traditionally strong subsector for the country—combining with electronics to account for 10-15 percent of manufactured exports. The government has recently further incentivized a shift toward automotive assembly by offering fiscal and tax incentives in certain free zones. The Greater Tanger-Med Industrial Platform contains six free trade zones connected by road and rail to the Tangiers port—already one of the busiest ports in Africa, with a capacity of eight million containers per year and ongoing expansion projects. The French car manufacturer Renault took advantage of these opportunities by opening a \$1.5 billion factory in Tanger Automotive City in 2012,⁷⁴ in addition to its older factory in Casablanca founded in 1959.⁷⁵ Other car manufacturers investing in Morocco's automotive industry include Japan's Nissan and India's Tata. Now, Morocco is the second-largest car producer in Africa, after South Africa, producing 156,000 vehicles in 2013.⁷⁶

Kenya. Industrial manufacturing is relatively strong in Kenya compared to countries at similar levels of economic development. Growing by an average of 4 percent per year over the past decade, it now accounts for nearly 20 percent of economic activity and provides 12.5 percent of all formal jobs in the economy, about 280,000 jobs. The most striking growth in production rates has occurred in dairy, chemicals, and fabricated metals production, all of which expanded by more than 50 percent between 2010 and 2013.⁷⁷ Other notable sectors include textiles, pharmaceuticals, furniture, leather goods, and motor vehicles, for which Kenya is the prime supplier to the rapidly urbanizing East African market.⁷⁸

Investors in Kenyan manufacturing have already benefited from SEZs, where downtime caused by electricity and other power interruptions are significantly less frequent than in other areas of the country. Almost 20 percent of all manufacturing jobs are located in Export Processing Zones

74 "The plant is revolutionary in that it emits very little carbon dioxide by optimizing energy consumption and using renewable energy. Compared to other plants of similar size, the Tangiers plant emits 98% less carbons, consumes 70% less water, and has zero industrial liquid discharges." (KPMG 2013, p.13).

75 Business Sweden (2016, p.5).

76 KPMG (2013, p.13).

77 KPMG (2015, p.12).

78 The Economist (2016).

(EPZs),⁷⁹ where Kenya's largest subsector—food and consumer goods processing—tends to operate. This includes especially flour and maize mills, meat and produce canning, sugar refining, and beer and soft drink production.

The government has also expressed a commitment to reclaiming Kenya's place as the region's top textiles producer by establishing three new SEZs: one near the Mombasa port, one at the new Lamu port, and one in Kisumu near Lake Victoria. Beyond Kenya's relatively high-skilled workforce and capacity for innovation, added incentives for global textile firms investing in Kenya's SEZs include deferment on value-added tax (VAT) and duty-free imports.

In partnership with the United Nations Industrial Development Organization (UNIDO), the Kenyan government recently launched a program to strengthen its pharmaceutical industry.⁸⁰ The program helps funnel resources toward building production capacities and ensure that the production of pharmaceutical meets World Health Organization (WHO) good manufacturing practice (GMP) quality and safety standards.⁸¹ The program is part of a broader strategy to improve local manufacturing infrastructure and to develop a high-quality manufacturing sector.

According to the World Economic Forum, Kenya is ranked 4th in Africa in terms of its competitive advantage on the international market, after the Seychelles, Ghana, and Zambia.⁸² Kenya's MVA per capita is already 50 percent higher than neighbor Tanzania and more than twice as high as Uganda and Rwanda. Kenya is also ranked the second highest in Africa (41st in the world in 2017, following South Africa which is ranked 39th in 2017) in terms of innovation and sophistication, an indication of a relatively high-skilled labor force.⁸³ Between 1990 and 2014, the share of its working-age population increased from 47 percent to 56 percent, and it is projected to have roughly

40 million available workers by 2030—up from 25.5 million currently.⁸⁴ In light of these expected trends, many analysts predict that Kenya will remain one of the top manufacturing exporters in the region over the medium to long term.⁸⁵

Zambia. Although it is a landlocked country, Zambia ranks 3rd on the continent, behind the Seychelles and Ghana, in the competitiveness of its manufactured goods on the world market. Its manufacturing sector grew by roughly 30 percent between 2009 and 2013. In addition, despite the overwhelming attention to Zambia's natural resource wealth (i.e., copper deposits), by 2013 the manufacturing sector received 25 percent of all FDI into Zambia. Currently, roughly two-thirds of the sector is involved in agro-processing and production of consumer goods, while the rest largely focuses on producing inputs for the local industrial sector.⁸⁶

The government has actively sought to diversify its export portfolio by providing tax incentives for investment in priority sectors and launching a Multi-Facility Economic Zone (MFEZ) program in 2005. Now the area around the capital Lusaka hosts six MFEZs, which eliminate VAT payments on manufacturing inputs and either discount or defer corporate tax payments. As of March 2015, 11 different companies have pledged to invest \$120 million in the Lusaka South MFEZ, the first government-run MFEZ pilot project with an area as large as 2,100 hectares.⁸⁷ Further plans are under way to improve the country's industrial investment climate as part of a five-year development plan—the “Revised Sixth National Development Plan”—in which a total of 11 SEZs are either in operation, under development, or being reviewed for approval.⁸⁸ In order to capitalize on the incentives offered by the SEZs, companies are required to prove that their activities will contribute to the diversification of the Zambian economy.

79 EPZ is a type of SEZ.

80 UNIDO (2015, p.6).

81 According to the WHO, GMP is a system for ensuring that products are consistently produced and controlled according to quality standards. It is designed to minimize the risks involved in any pharmaceutical production that cannot be eliminated through testing the final product.

82 KPMG (2015, p.12).

83 KPMG (2013, p.10).

84 The World Bank (2016, pp. 21-22).

85 KPMG (2013, p.10).

86 KPMG (2015, p.16).

87 IPRCC & UNDP (2015, p.35).

88 IPRCC & UNDP (2015, p.33-34).

Nigeria. The automotive industry in Nigeria is also expanding rapidly. Although nearly all of the automobiles sold in the country are imported—and just one company, Toyota, dominates 70 percent of the market—Nigerian automakers have exhibited a large increase in sales over the past few years, and the first domestically produced cars reached the market in 2015. With its New Automobile Industrial Policy Development launched in 2013, the government now seems committed to promoting this domestic industry by raising import tariffs, improving industrial infrastructure, and investing in vocational training. Companies that have since expressed plans to invest in Nigeria include Nissan, Skoda, and Mercedes-Benz.⁸⁹

Another promising opportunity is in the Lagos Free Trade Zone (LFTZ), first launched in 2002, which intends to be a trade and logistical hub for all of West Africa, especially the ECOWAS member states. It has since expanded from 215 to 850 hectares, and is expected to be fully operational in 2018, with a particular focus on petroleum refining, petrochemicals, and agro-processing. Companies are required to invest at least \$1 million in share capital to get access to the zone, which offers exemptions from taxes at all levels of government and from import/export licensing requirements. The first company to set up shop was palm oil refiner Raffles Oil with \$30 million invested since 2012, and then packaging company Insignia with roughly \$20 million. At least five more manufacturing companies already have plans to become capital shareholders in the LFTZ.⁹⁰

Industrialization has been one of the major catalysts of growth in Nigeria, and it is a priority strategy for the government in shifting away from its over-reliance on volatile primary commodity exports, especially oil. Overall, the manufacturing sector currently accounts for 9 percent of GDP, more than expected in past projections, with impressive annual growth rate of 18 percent between 2011 and 2013. Important subsectors include food, beverages, cigarettes, and textiles. Like Kenya, Nigeria's pharmaceutical sector is also booming

due to WHO certification of local manufacturers, with four companies now producing medicines for the world market.⁹¹

89 KPMG, 2012 (p.11-12).

90 IPRCC & UNDP (2015, pp.32-33).

91 KPMG (2015, p.7).

5

Recurrent challenges

Despite the recent, surprising expansion of its manufacturing sector described above, MVA per capita in Nigeria is still among the lowest in Africa, and its capacity utilization hovers below 60 percent on average. The problems experienced by manufacturers working in Nigeria are indicative of the challenges of investing in manufacturing elsewhere in Africa—specifically, the quality of human capital, infrastructure gaps, and policy and regulatory failures.⁹² In this section, we discuss some of these obstacles to doing business in Africa’s manufacturing sector and describe some empirical variation in these constraints across the continent.

First, although an abundance of low-cost, under-employed labor exists already, Africa’s workforce is perceived to be lacking in skills and efficiency, a major hindrance to investment,

especially in more specialized forms of production. Only two-thirds of 15-24 year olds in Africa have completed a primary education (see Figure 4), which is roughly 20 percent less than the world average, with less than one-in-five students continuing beyond primary school.⁹³ Only 10 African countries are ranked in the top half in the world for “Pay versus Productivity” in the World Economic Forum’s Global Competitiveness Index. Not coincidentally, these are the countries that have the most developed education systems in the region, namely Kenya, Rwanda, Seychelles, and Mauritius. For others—notably South Africa, Namibia, Egypt, and Morocco—the marginal value of labor is low compared to the average wage.⁹⁴ Unable to locate sufficiently qualified workers

92 KPMG (2013, p.2).

93 Yaw Ansu et al. (2016, pp. 2-3); Filmer and Fox (2014).

94 KPMG (2013, p.6).

in the local labor market, many companies have resorted to importing foreign workers or else investing in intensive training courses.⁹⁵

Second, although spending on infrastructure has more than doubled since the turn of the century, amounting to \$80 billion in 2015,⁹⁶ gaps in energy infrastructure continue to result in frequent power outages in many countries. The African Development Bank estimates that electricity costs three times more in Africa than in comparable developing regions, and most manufacturers operating in West and East Africa have to rely on expensive backup generators as a primary energy source, which adversely affects their profit margins.⁹⁷ At the same time, weak transportation networks hinder manufacturers' ability to capitalize on regional economies of scale. According to the World Bank, the number of railroads by total kilometers has actually declined since the 1980s, and only a minority of roads on the continent are paved or traversable year-round. Despite its population of 1 billion people, the continent currently has just 64 ports.⁹⁸

In the immediate post-independence period, Africa was largely comparable to East Asia in the quality and penetration of its roads, electricity, and telecommunications infrastructure. By the end of the century, it had fallen behind in every category. The region as a whole now lags 20 percent behind the average for low-income countries across all infrastructure indicators, with only five African countries above the global median for electricity supply and only 10 for the quality of transport infrastructure.⁹⁹ The few countries that rank in the top 90 in both categories—Morocco, Tunisia, Namibia, Seychelles, and Mauritius—are also those with the highest MVA per capita in the region. Access to utility services continues to pose a challenge even in many SEZs, although some countries are ratcheting up efforts to address these problems either by privatizing the electrical

sector (Nigeria) or by building massive hydropower plants (Ethiopia, DRC, Zambia) or solar/wind farms (Morocco).¹⁰⁰

Finally, burdensome port and tax bureaucracies in Africa have contributed to the highest direct and indirect costs of international trade in manufacturing in the world. It can take as many as 51 days and seven different documents to export a container from Zambia, compared to 10 days and four documents from Morocco.¹⁰¹ FDI agencies and other government ministries in African countries have been unable to effectively address issues of overlapping jurisdictions and uncoordinated personnel practices in order to improve the investment environment.¹⁰² Much of this is due to a lack of political commitment, since industrial, tax, and trade regulations offer significant opportunities for corruption.¹⁰³

95 IPRCC & UNDP (2015, pp.39-42).

96 McKinsey & Company (2016, p.24).

97 KPMG (2013, p.2).

98 The Economist (2016); McKinsey & Company (2016, p.24); KPMG (2014, p.4).

99 Yaw Ansu et al. (2016, pp. 2-3); Foster and BriceñoGarmendia (2010); KPMG (2013, p.5).

100 KPMG (2013, p.5).

101 Conde Carlos et al. (2015, p. 9).

102 Yaw Ansu et al. (2016, p.18).

103 Africa has the highest level of corruption in the world according to Transparency International's Corruption Perceptions Index.

6

Effective strategies for investment

In light of the preceding discussion, any investor looking toward Africa's manufacturing sector should consider the following factors: those related to the structure of a country's economy and those related to a country's policies. In order to reduce costs related to transport, import tariffs, and exchange rate fluctuations, investors should first consider where manufacturing inputs can be sourced locally. According to KPMG, Africa has a wealth of mineral and agricultural resources that could be used as manufacturing inputs that give African manufacturers a competitive edge in years to come.¹⁰⁴ However, local suppliers lack quality and availability, with only a handful of African countries performing well on cross-national indicators on the quality and the quantity of local suppliers in the World Economic Forum's Global Competitive Index. Specifically, among the largest manufacturing markets, South Africa,

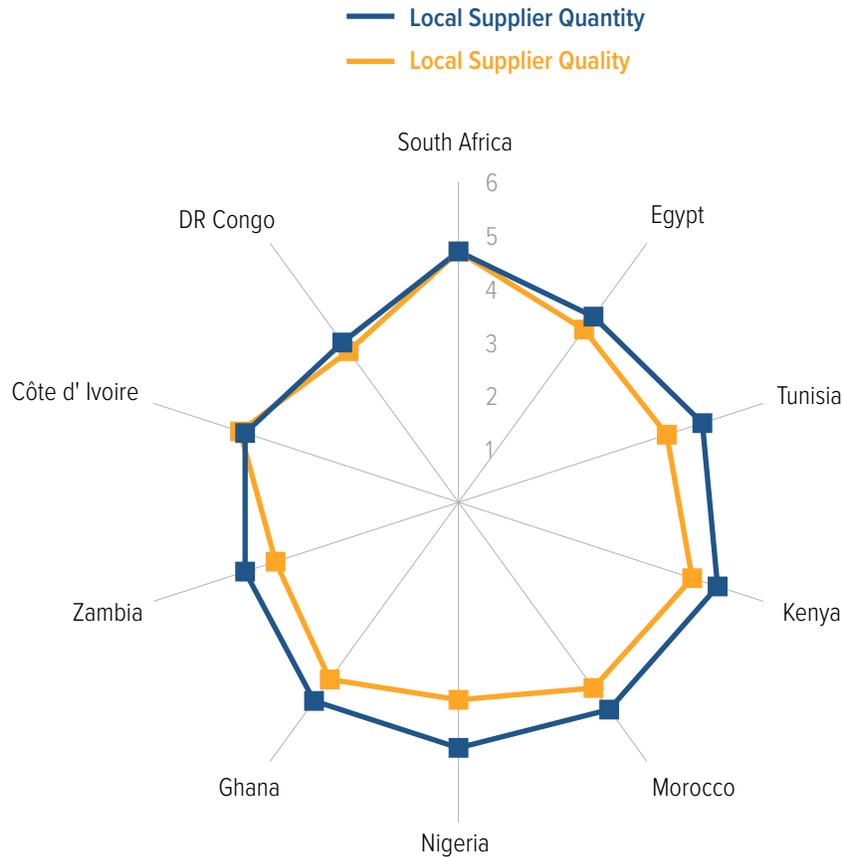
104 KPMG (2013, p.6).

Kenya, Morocco, and Côte d'Ivoire score highest across both indicators (see Figure 9), and a few smaller markets also perform relatively well in cross-national comparisons, such as Mauritius, Senegal, the Gambia, and Mali. However, many resource-rich manufacturing countries are also among the lowest ranked in terms of quality of governance and infrastructure, the burden of tax and trade regulations, and corruption, such as the DRC and Angola. In other words, it is hard to address supply- and policy-related constraints facing manufacturers at the same time in Africa.

Many governments in Africa have worked hard to grow their manufacturing sectors by reducing policy-related constraints, and even by implementing policy measures specifically intended to improve their attractiveness to investors, such as import restrictions for priority industries.¹⁰⁵ In Nigeria, for ex-

105 Yaw Ansu et al. (2016, p.18).

Figure 9. Comparison of the quality and quantity of local suppliers across 10 largest manufacturing markets in Africa



Source: Global Competitiveness Index 2017-18, World Economic Forum. Data for Cote d' Ivoire are from 2016-17, most recent available year.

ample, cement manufacturers have benefited from increased import duties and even the cessation of new import licenses in the sector. On the other hand, since Nigeria continues to be constrained by its political and regulatory environment—especially high levels of corruption, poverty, and bureaucratic red tape—investors might do well to look toward a similar, though more investor-friendly, policy climate in neighboring Ghana. Ghana has many challenges of its own, such as a recent bout of fiscal volatility caused by increasing government spending. However, it is currently ranked 67th in the world for its business climate according to the World Bank. Not to mention its recent discoveries of gas deposits and development of processing

facilities are likely to offset power shortages and reliance on electricity imports, making it one of the most promising places to invest in Africa.¹⁰⁶

In addition, the SEZs are considered a manageable and realistic option to overcome some of the policy-related constraints in developing countries in the short term. Due to its notable success in attracting investment and creating jobs, the concept of the SEZ as part of a national industrial development strategy has been adopted from the Chinese model. As China's experience shows, it is important that each SEZ model be adapted to the local context—i.e., endowments—and to a country's specific development goals. The govern-

¹⁰⁶ KPMG (2014, p.5).

ment should also actively engage in monitoring, infrastructural support, and long-term planning and revision. Moreover, since the size of country-level consumer markets is relatively constrained in Africa, as compared to China, more regional integration will be necessary in order to create a comparable context for growth in manufacturing.¹⁰⁷

At present, even in light of the cross-country variation described above, the best investment advice for manufacturers looking to invest in Africa is to identify optimal SEZs for the relevant subsector. These SEZs will be the first and priority recipients for government investment in infrastructural improvements; they have substantially lower barriers related to the time and cost of importing and exporting; and they confer initial tax benefits that help to offset start-up costs. For example, downtime related to electricity outages is much less frequent in Kenya's SEZs than it is for companies operating elsewhere in the country. It also takes the country fewer days to re-establish power and internet connections and to move goods across neighboring borders.¹⁰⁸ Identifying upcoming SEZs as they are in the planning and development phases will allow producers to benefit from a first-mover advantage and effectively scale up in the nascent market.

In this way, the strongest foundations for investment will be located in countries that demonstrate the necessary flexibility, coordination, and especially political commitment to full implementation of business-friendly regulations in SEZs, as well as simultaneous integration into regional economic communities (RECs). Such commitment appears relatively strong in South Africa and Zambia, where authority over SEZs has often been elevated to the highest levels of government. The commitment is less strong in Nigeria, again, where confusion between the national and state levels of government has led to coordination issues. However, a Federal Government Committee on Free Zone Reforms has been created in Nigeria in order to suggest policy recommendations for overcoming coordination issues and improving the administrative efficiency of SEZs.¹⁰⁹ It will remain

to be seen whether such commitment exists in Ethiopia, where it has only recently established its first SEZ —the Chinese-managed “Eastern Industrial Zone (EIZ),” which is located 35km southeast of Addis Ababa in Dukem, Oromia, and is connected to the capital, the Djibouti port, and other economic centers by both road and railway.¹¹⁰

107 IPRCC & UNDP (2015, p.57).

108 KPMG (2014, p.9).

109 IPRCC & UNDP (2015, pp.39-42).

110 IPRCC & UNDP (2015, p.20).

7

Looking to the future

A substantial amount of room remains for growth and expansion in Africa's manufacturing sector, and as the cost of labor is rising in other developing regions, the World Bank has suggested that these manufacturing jobs could migrate to Africa in the coming decades. Business-to-business spending in manufacturing in Africa will reach \$666.3 billion by 2030, an increase of \$201.28 billion from 2015. With the exception of a handful of countries,¹¹¹ however, industrialization in Africa remains a challenge, as the necessary economic and political foundations for the sector are just starting to take hold. In light of the region's relative deficiency of factories to date, some analysts have reached pessimistic conclusions about the potential for industrialization and, by extension, economic modernization in Africa.¹¹² Worryingly, exports of low-technology manufactured goods—a sector

in which the region should have a comparative advantage on the world market—actually declined between 2000 and 2010. Meanwhile, resource extraction-related industry continues to dominate the sector, depressing per capita value added in manufacturing and making the macroeconomic climate vulnerable to commodity price shocks.¹¹³

On the other hand, Africa's manufacturing output is now keeping pace with the impressive rates of growth observed across the rest of the economy, as manufacturing's share of GDP has remained relatively constant in recent years, between 10 and 14 percent (see Figure 1).¹¹⁴ Many countries are also making significant progress in improving the climate for doing business, across a range of indicators relevant to manufacturing. Currently, sub-Saharan Africa has the largest share of coun-

111 Namely, South Africa, Egypt, Morocco, and Tunisia.

112 Rodrik (2016).

113 Bokaly (2011).

114 The Economist (2014).

tries that are making progress among all world regions, according to the World Bank, with 45 out of 46 countries measured improving their business regulatory environments over the past decade.¹¹⁵ Citing these trends, some have suggested that Africa is likely to soon emulate the remarkable growth story of East Asia.¹¹⁶

Given its unique socioeconomic and demographic conditions, however, the Asian growth model cannot simply be transplanted in Africa.¹¹⁷ In the foreseeable future, the potential for Africa's manufacturing sector will be driven by the growing size of its low-cost workforce; its rapidly expanding and urbanizing consumer market; its untapped agricultural and resource endowments; growing economies of scale created by increasing integration of the RECs; and increasing public spending in education and infrastructure.¹¹⁸ In order to address the remaining, non-structural constraints that can be improved through political commitment, African Union member states have committed themselves to substantial public investment in infrastructure, specifically a high-speed rail network, oil and gas pipelines, ICT broadband cables, and sea and air ports. All of this is part of the regional project to drive industrialization and to increase intra-African trade from 11 percent to nearly 50 percent of total trade by 2045.¹¹⁹

Moreover, the potential for the CFTA to facilitate structural transformation in Africa is big. Given the CFTA's market size of 1.2 billion people and over \$3.4 trillion of cumulative GDP, a successful CFTA could increase the growth of the manufacturing sector and its value added given in Africa.¹²⁰ Some studies show that by creating a pan-African market, intra-Africa trade could increase by about 52 percent, resulting in an increase of African manufacturing exports.¹²¹

Ideally, this structural transformation of industry will proceed hand-in-hand with the region's other impending revolution—namely, in agriculture.

Increasing productivity in both sectors has the potential to compound exponentially as part of a complementary value chain, with domestically manufactured chemicals and machinery feeding into agricultural production and agro-processing plants, which provide the food and energy to meet growing African and global demand. Even beyond the agro-industry feedback loop, and in more technical and high-value manufacturing, U.S. computer conglomerate IBM has recently suggested that Africa's capacity to "leapfrog" technologies has generated a market for African developers of computer software and smartphone apps.¹²²

Across all subsectors and countries, Africa's industrial revolution appears imminent. Regional integration and transport infrastructure development could double the African-produced supply to local markets and increase revenues by \$326 billion per year for manufacturers of consumer goods alone.¹²³ Given current patterns, South Africa, Nigeria, and Egypt are likely to be among the world's 25 largest economies in the next decade—becoming similar in size to Turkey or the Netherlands. A number of other African countries will continue to experience rapid industry-driven growth: Angola, Kenya, Ghana, Tanzania, Zambia, Ethiopia, and Mozambique, among others.¹²⁴ If interested parties are successful in pushing through investment-oriented reforms and in tapping the growing demand from African businesses and consumers, Africa's manufacturing output has the potential to surpass \$1 trillion per year by 2025, with roughly half that production remaining on the continent and the rest exported to other world regions.¹²⁵

115 Ernst and Young (2014, p.10).

116 Ernst & Young (2014, p.21).

117 AfDB (2013).

118 The Economist (2016); Ernst & Young (2014); AfDB (2013).

119 Africa Union Commission (2015, p.5).

120 Signe (2017).

121 ICTSD (2015).

122 The Economist (2014).

123 McKinsey & Company (2016, p.16).

124 Angola, Kenya, Ghana, Tanzania, Zambia, Ethiopia, and Mozambique, among others, see Ernst & Young (2014, p.21).

125 McKinsey & Company (2016, p.14).

References

- African Center for Economic Transformation. 2014. "Growth with Depth." African Transformation Report. (<http://africantransformation.org/wp-content/uploads/2014/02/2014-african-transformation-report.pdf>)
- Africa Development Bank. 2018. "African Economic Outlook 2018." Abidjan, Côte d'Ivoire: African Development Bank Group.
- African Development Bank Group. 2017. "Global Value Chains: Africa, the Factory Floor of the World?" (<https://www.afdb.org/en/annual-meetings-2013/programme/global-value-chains-africa-the-factory-floor-of-the-world/>)
- African Union Commission. 2015. "Agenda 2063: The Africa We Want." Addis Ababa, Ethiopia: African Union. (<https://archive.au.int/assets/images/agenda2063.pdf>)
- Ansu, Yaw, Margaret McMillan, John Page and Dirk Willem te Velde. 2016. "African Transformation Forum 2016: Promoting Manufacturing in Africa". *African Center for Economic Transformation, African Transformation Forum, Supporting Economic Transformation*.
- Balchin, Neil, Stephen Gelb, Jane Kennan, Hope Martin, Dirk Willem te Velde and Carolin Williams. 2016. "Developing Export-Based Manufacturing in Sub-Saharan Africa". *Supporting Economic Transformation*.
- Bates, Robert. 2014. *Markets and States in Tropical Africa: The Political Basis of Agricultural Policies*. University of California Press.
- Bentzen, Jeanet Sinding, Nicolai Kaarsen and Asger Moll Wingender. 2013. "The Timing of Industrialization Across Countries." Paper No. 13-17. University of Copenhagen Department of Economics Discussion.
- Bessant John and Joe Tidd. 2007. *Innovation and Entrepreneurship*. Wiley: Chichester, UK.
- Bhorat, Haroon, Christopher Rooney and François Steenkamp. 2016. "Africa's Manufacturing Malaise." United Nations Development Programme Regional Bureau for Africa Working Paper Series, Vol.1, No. 3. New York, NY: UNDP.
- Bhorat, Haroon, Ravi Kanbur, Christopher Rooney and François Steenkamp. 2017. "Sub-Saharan Africa's Manufacturing Sector: Building Complexity." Working Paper Series No.256. Abidjan, Côte d'Ivoire: African Development Bank Group.
- Bhorat, Haroon and François Steenkamp. 2018. Manufacturing Complexity in Africa. *Foresight Africa: Top Priorities for the Continent in 2018: 72-75*. Washington DC: Brookings Institution.
- Bigsten, Arne and Måns Söderbom. 2005. "What Have We Learned from a Decade of Manufacturing Enterprise Surveys in Africa?" Working Paper 3798. World Bank Group.
- Bolaky, Bineswaree. 2011. "Fostering Industrial Development in Africa in the New Global Environment: Key Policy Recommendations." *International Centre for Trade and Sustainable Development*. (<http://www.ictsd.org/bridges-news/trade-negotiations-insights/news/fostering-industrial-development-in-africa-in-the-new>).
- Brunetti, Aymo, Gregory Kisunko and Beatrice Weder. 1997. *Institutional Obstacles to Doing Business: Region-By-Region Results from a Worldwide Survey of the Private Sector*. Working Paper 1759. World Bank Publications.
- Bughin, Jacques, Mutsa Chironga, Georges Desvaux, Tenbite Ermias, Paul Jacobson, Omid Kassiri, Acha Leke, Susan Lund, Arend Van Wamelen and Yassir Zouaoui. 2016. *Lions on The Move II: Realizing the Potential of Africa's Economies*. McKinsey Global Institute.
- Business Sweden. 2016. "Emerging Consumer Market in Maghreb and West Africa." The Swedish Trade and Invest Council. (<https://www.businesssweden.se/contentassets/d2e184b90baa489895106f886f3ab6d8/emerging-consumer-markets-in-west-africa.pdf>)
- Business Sweden. 2016. "Moroccan Automotive Industry Fact Pack." The Swedish Trade and Invest Council. (<https://www.businesssweden.se/contentassets/df79d580453548a79fb9505e-a004b901/moroccan-automotive-industry.pdf>)
- Carlos, Conde, Philipp Heinrigs and Anthony O'Sullivan. 2015. "Tapping the Potential of Global Value Chains for Africa." *The African Competitiveness Report 2015: 71-85*.
- Chang, Ha-Joon. 2015. *Smart Industrial Policy for Africa in the 21st Century*. Addis Ababa: United Nations Economic Commission for Africa.
- Chenery, Hollis B. 1960. 'Patterns of Industrial Growth'. *American Economic Review* 50(4): 624-54.
- Chenery, Hollis B, Sherman Robinson and Moshe Syrquin. 1986. *Industrialization and Growth*. New York: Oxford University Press.
- Colin, Clark. 1940. *The Conditions of Economic Progress*. London, UK: Macmillan and Co.
- Collier, Paul. 2008. *The Bottom Billion: Why the Poorest Countries are Failing and What Can be Done About It*. Oxford University Press.

- Cornwall, John. 1977. *Modern Capitalism: Its Growth and Transformation*. New York: St. Martin's Press.
- Deloitte. 2016. "Global Manufacturing Competitiveness Index," (<https://www2.deloitte.com/global/en/pages/manufacturing/articles/global-manufacturing-competitiveness-index.html>).
- De Vries, Gaaitzen, Marcel Timmer and Klaas De Vries. 2013. "Structural Transformation in Africa: Static Gains, Dynamic Losses." *The Journal of Development Studies* 51(6): 674-88.
- Dollar, David. 2018. *African Economies and Global Value Chains. Foresight Africa: Top Priorities for the Continent in 2018*: 76. Washington DC: Brookings Institution.
- Ernst, Dieter. 2002. "Global Production Networks and the Changing Geography of Innovation Systems. Implications for Developing Countries." *Economics of Innovation and New Technology* 11(6): 497-523.
- Ernst, Dieter and Linsu Kim. 2002. "Global Production Networks, Knowledge Diffusion and Local Capability Formation." *Research Policy* 31(8): 1417-1429.
- Ernst and Young. 2014. "Africa 2030: Realizing the possibilities." ([https://www.ey.com/Publication/vwLUAssets/EY-Africa-2030-realizing-the-possibilities/\\$FILE/EY-Africa-2030-realizing-the-possibilities.pdf](https://www.ey.com/Publication/vwLUAssets/EY-Africa-2030-realizing-the-possibilities/$FILE/EY-Africa-2030-realizing-the-possibilities.pdf)).
- Ernst and Young. 2017. "Connectivity Redefined: EY's Attractiveness Program Africa," ([https://www.ey.com/Publication/vwLUAssets/ey-attractiveness-program-africa-2017-connectivity-redefined/\\$FILE/ey-attractiveness-program-africa-2017-connectivity-redefined.pdf](https://www.ey.com/Publication/vwLUAssets/ey-attractiveness-program-africa-2017-connectivity-redefined/$FILE/ey-attractiveness-program-africa-2017-connectivity-redefined.pdf)).
- Evenson, Robert and Larry Westphal. 1995. "Technological Change and Technology Strategy," *Handbook of Development Economics* 3 (1995): 2209-2299.
- Farole, Thomas. 2010. "Second Best? Investment Climate and Performance in Africa's Special Economic Zones," Working Paper 3698. Washington DC: World Bank.
- Foreign Direct Investment Intelligence. 2016 "The Africa Investment Report 2015: An FDI Destination on the Rise," January 4.
- Foreign Direct Investment Intelligence. 2016 "The Africa Investment Report 2016: Foreign Investment Broadens Its Base."
- Gelb, Alan, Christian J. Meyer and Vijaya Ramachandran. 2014. "Development as Diffusion – Manufacturing Productivity and Sub-Saharan Africa's Missing Middle." CGD Working Paper 357. Washington, DC: Center for Global Development.
- Gelb, Alan, Christian J. Meyer, Vijaya Ramachandran and Divyanshi Wadhwa. 2017. "Can Africa Be a Manufacturing Destination? Labor Costs in Comparative Perspective." CGD Working Paper 466. Washington, DC: Center for Global Development.
- Hallward-Driemeier, Mary and Gaurav Nayyar. 2018. *Trouble in the Making? The Future of Manufacturing-Led Development*. Washington, DC: World Bank.
- Hallward-Driemeier, Mary and Gaurav Nayyar. 2018. *Is Automation Undermining Africa's Industrialization Prospects? Foresight Africa: Top Priorities for the Continent in 2018*: 70. Washington DC: Brookings Institution.
- Hauge, Jostein Lohr. 2015. Smart Industrial Policy for Africa in the 21st Century. [PowerPoint slides]. (https://www.google.com/search?q=Smart+Industrial+Policy+for+Africa+in+the+21st+century&rlz=1C1JZAP_enCM710CM710&oeq=Smart+Industrial+Policy+for+Africa+in+the+21st+century&aqs=chrome..69i57j69i59.771j0j7&sourceid=chrome&ie=UTF-8#).
- Hidalgo, César A., Bailey Klinger, A-L. Barabási and Ricardo Hausmann. 2007. "The Product Space Conditions the Development of Nations." *Science* 317(5837): 482-287.
- Irz, Xavier, Lin Lin, Colin Thirtle and Steve Wiggins. 2001. "Agricultural Productivity Growth and Poverty Alleviation." *Development Policy Review* 19(4): 449-466.
- Kaldor, Nicholas. 1966. *Causes of the Slow Rate of Economic Growth of the United Kingdom: An Inaugural Lecture*. Cambridge University Press.
- Keller, Wolfgang. 1996. "Absorptive Capacity: On the Creation and Acquisition of Technology in Development." *Journal of Development Economics* 49(1): 199-227.
- Kim, Linsu. 1980. "Stages of Development of Industrial Technology in a Developing Country: A Model." *Research Policy* 9.3 (1980): 254-277.
- KPMG. 2013. *Manufacturing in Africa: Sector Report*.
- KPMG. 2015. *Manufacturing in Africa: Sector Report*. (<https://assets.kpmg.com/content/dam/kpmg/br/pdf/2016/09/fast-moving-consumer-goods.pdf>)
- Kuznets, Simon and John Thomas Murphy. 1966. *Modern Economic Growth: Rate, Structure and Spread*. Vol. 2. New Haven: Yale University Press.
- Lewis, Arthur. 1954. 'Economic Development with Unlimited Supplies of Labour'. *The Manchester School*, 22(2): 139–91.

- Luke, David and Babajide Sodipo. 2015. "Launch of the Continental Free Trade Area: New Prospects for African Trade?" *International Centre for Trade and Sustainable Development*. June 23. <https://www.ictsd.org/bridges-news/bridges-africa/news/launch-of-the-continental-free-trade-area-new-prospects-for-african>)
- Mano, Yukichi, Alhassan Iddrisu, Yutaka Yoshino and Tetsushi Sonobe. 2012. "How can Micro and Small Enterprise in Sub-Saharan Africa Become More Productive? The Impact of Experimental Basic Managerial Training". *World Development* 40 (3): 458-68.
- Martin, Will, and Devashish Mitra. 2001. "Productivity Growth and Convergence in Agriculture Versus Manufacturing." *Economic Development and Cultural Change* 49(2): 403-422.
- McMillan, Margaret, Dani Rodrik and Íñigo Verduzco-Gallo. 2014. "Globalization, Structural Change and Productivity Growth, with an Update on Africa." *World Development* 63(1): 11-32.
- Narayanan, Veekay K. 2001. *Managing Technology and Innovation for Competitive Advantage*. Pearson Education India.
- Nelson, Richard and Edmund Phelps. 1966. "Investment in Humans, Technological Diffusion and Economic Growth," *American Economic Review* 56(2): 69-75.
- Newfarmer, Richard, John Page and Finn Tarp. 2018. *Industries without Smokestacks: Industrialization in Africa Reconsidered*. Oxford University Press.
- Newman, Carol, John Page, John Rand, Abebe Shimeles, Måns Söderbom and Finn Tarp. 2016. *Made in Africa: Learning to Compete in Industry*. Brookings Institution Press.
- Newman, Carol and John Page. 2017. *Industrial Clusters: The Case for Special Economic Zones in Africa*, No. 2017/15. WIDER Working Paper.
- Ngulube, Bekithemba. 2014. "What is the Future of Manufacturing in South Africa?" *Frontier Advisory*. (https://www2.deloitte.com/content/dam/Deloitte/za/Documents/manufacturing/za_what_is_the_future_of_manufacturing_summary_20082014.pdf. On 2/23/2017.)
- Nichter, Simeon and Lara Goldmark. 2009. "Small Firm Growth in Developing Countries." *World Development* 37(9): 1453-1464.
- O' Regan, Nicholas, Abby Ghobadian and David Gallear. 2006. "In Search of the Drivers of High Growth in Manufacturing SMEs." *Technovation* 26(1): 30-41.
- Oxford Business Group. 2015. "Bearing Fruit: Policy Changes Create New Difficulties for Small Scale Cocoa Grinders." (<https://oxfordbusinessgroup.com/analysis/bearing-fruit-policy-changes-create-new-difficulties-small-scale-cocoa-grinders>)
- Page, John. 2018. *The Road not Taken: Structural Change in Africa Reconsidered*. In *Foresight Africa: Top Priorities for the Continent in 2018*. Washington DC: Brookings Institution.
- Patel, Suresh H. 2005. *Business Age and Characteristics of SME Performance*. Kingston Business School, Kingston University.
- Prakash, Yamini and Gupta Meenakshi. 2008. "Exploring the Relationship between Organisation Structure and Perceived Innovation in the Manufacturing Sector of India." *Singapore Management Review* 30(1): 55-76.
- Radelet, Steven and Sachs Jeffrey. 1998, January. "Shipping Costs, Manufactured Exports, and Economic Growth." In *American Economic Association Meetings, Harvard University*, mimeo.
- Rodrik, Dani. 2012. "Unconditional Convergence in Manufacturing." *Quarterly Journal of Economics*, 128(1): 165-204.
- Rodrik, Dani. 2016. "An African Growth Miracle?" *Journal of African Economies* 27 (1): 10-27. (<https://academic.oup.com/jae/article-abstract/27/1/10/2660399>).
- Schwab, Klaus and Xavier Sali-i-Martin. 2016. "The Global Competitiveness Report 2016 17." Geneva: World Economic Forum.
- Schwab, Klaus and Xavier Sali-i-Martin. 2017. "The Global Competitiveness Report 2017 18." Geneva: World Economic Forum.
- Siba, Eyerusalem and Mulu Gebreeyesus. 2016. "Learning to Export and Learning by Exporting: The Case of Ethiopian Manufacturing." *Journal of African Economies* 26 (1): 1-23.
- Signé, Landry. 2017. *Innovating Development Strategies in Africa: The Role of International, Regional and National Actors*. Cambridge University Press.
- Signé, Landry. 2017. "3 Things to Know About Africa's Industrialization and the Continental Free Trade Area." Washington DC: Brookings Institution. November 21. (<https://www.brookings.edu/blog/africa-in-focus/2017/11/22/3-things-to-know-about-africas-industrialization-and-the-continental-free-trade-area/>)
- Signé, Landry. 2018. "Capturing Africa's High Return," Washington DC: Brookings Institution. March 14. (<https://www.brookings.edu/opinions/capturing-africas-high-returns/>)
- Sun, Irene Yuan. 2017. "The World's Next Great Manufacturing Center." *Harvard Business Review*, 95, pp.122-129.
- Terziowski, Mile. 2010. "Innovation Practice and Its Performance Implications in Small and Medium Enterprises (SMEs) in the Manufacturing Sector: A Resource-Based View." *Strategic Management Journal* 31(8): 892-902

The Economist. 2014. "Manufacturing in Africa: An Awakening Giant." February 8. (<http://www.economist.com/news/middle-east-and-africa/21595949-if-africas-economies-are-take-africans-will-have-start-making-lot>. On 2/23/2017).

The Economist. 2016. "Manufacturing in Africa: Still Struggling with the Basics" (<http://country.eiu.com/article.aspx?articleid=774034461#>)

Tushman, Michael and William Moore. 1988. *Readings in the Management of Innovation*. Ballinger.

United Nations Economic Commission for Africa & African Union. 2014. *Dynamic Industrial Policy in Africa*.

United Nations. 2015. "If Africa Builds Nests, Will the Birds Come? Comparative Study on Special Economic Zones in Africa and China" Working Paper 6. China: UNDP and International Poverty for Reduction Center

Wheelen, Thomas L and Hunger J.D. 1999. *Strategic Management and Business Policy*. Addison-Wesley: Reading, MA.

World Bank. 1994. *World Development Report 1994: Infrastructure for Development*. NY:Oxford University Press.

World Bank. 1997. *World Development Report 1997: The State in a Changing World*. NY: Oxford University Press.

World Bank. 2016. *Kenya Country Economic Memorandum: From Economic Growth to Jobs and Shared Prosperity*. Washington, DC: World Bank Group.

World Bank. 2017. *World Development Report 2017: Global Value Chain: Measuring and Analyzing the Impact of GVCs on Economic Development*. Washington, D.C: World Bank Group.

B | Africa Growth Initiative
at BROOKINGS

www.brookings.edu/global