Made in Africa

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W e wrapped up chapter 2 by noting that Africa was to some ex-
tent the victim of bad luck in its efforts to build industry. By
the time the Continent had moved beyond the economic and politi-
cal turmoil of the 1980s and 1990s, the center of gravity of global
manufacturing had moved from the rich industrial countries of the
Organization for Economic Cooperation and Development (OECD)
to East Asia. Low-income countries trying to compete today are
competing with China. This chapter asks: Given its late start, can
Africa reasonably aspire to break into the global market for indus-
trial goods?

We believe the answer is yes, for a number of reasons. First,
economic changes are taking place in Asia that create a window of
opportunity for late-industrializers elsewhere to gain a toehold in
world markets. Second, the nature of manufactured exports them-
selves is changing. A growing share of global trade in industry is
made up of stages of vertical value chains—or tasks—rather than
finished products. Third, trade in services and agro-industry is
growing faster than trade in manufactures. These “industries without
smokestacks” broaden the range of products in which Africa can
compete, and a number of them are intensive in location-specific factors abundant in Africa. We discuss all these changes in turn.

All of these potential entry points depend at least in part on Africa’s assumed low-wage advantage. Over the years there has been a strand in the academic literature suggesting that wages in Africa—or wages relative to productivity—are not really low.\(^1\) This is a critical issue, and so we review and assess several recent contributions to this debate in this chapter as well. We end the chapter by looking at a very real constraint on the region’s ability to compete: natural resource abundance.

**Competing with Asia**

The global economy has experienced major changes over the last quarter of a century. Growth of manufactured exports has greatly exceeded growth of manufacturing output, and developing countries have captured an increasing share of the world market in both simple and complex manufactures. The share of total world manufacturing output produced by developing countries nearly doubled between 1992 and 2012, rising from 18 percent to 35 percent of global production. As manufacturing production has shifted to developing countries, Asia has become the “world’s factory.” East Asia and the Pacific account for about 58 percent of the manufacturing value added of developing economies, of which over 50 percent is produced by China alone.\(^2\)

Manufactured exports from sub-Saharan Africa grew at 14.5 percent per year on average from 2000 to 2010. Yet, this growth was not enough to keep pace with developing countries as a whole. The region’s share of industrializing countries’ manufactured exports declined from 3.5 to 2.8 percent over the same period.\(^3\) One measure of the extent of the export challenge is set out in table 3-1,

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1. For a recent contribution, see Gelb, Meyer, and Ramachandran (2013).
2. UNIDO (2013).
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This contrasts the manufactured export performance of a number of emerging manufacturing exporters in Asia and Latin America with sub-Saharan Africa’s five largest low-income manufacturing exporters in per capita terms in 2011. These countries were Ivory Coast, Ghana, Nigeria, Senegal, and Zambia.

While the leading African exporters compare well with their international competitors in terms of the growth of exports, they are starting from a very small base. The average per capita exports of manufactured goods of the leading African exporters is 55 percent of Cambodia, the lowest of the comparators, and 11 percent of Costa Rica, the highest. The share of manufactured exports in total exports is less than half of the five comparators. These trends are very similar to those observed between 2000 and 2005.4


Table 3-1. Per Capita Manufactured Exports: Africa, Asia, and Latin America

<table>
<thead>
<tr>
<th>Country</th>
<th>Per capita 2011 (US$)</th>
<th>Per capita growth 2006–11 (percent)</th>
<th>Share in total exports 2011 (percent)</th>
<th>Share of medium/high technology 2011 (percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bangladesh</td>
<td>230</td>
<td>0.0</td>
<td>63.7</td>
<td>21.6</td>
</tr>
<tr>
<td>Cambodia</td>
<td>335</td>
<td>9.8</td>
<td>79.6</td>
<td>7.1</td>
</tr>
<tr>
<td>Vietnam</td>
<td>764</td>
<td>23.6</td>
<td>70.0</td>
<td>33.7</td>
</tr>
<tr>
<td>Costa Rica</td>
<td>1595</td>
<td>6.0</td>
<td>73.8</td>
<td>58.8</td>
</tr>
<tr>
<td>El Salvador</td>
<td>701</td>
<td>4.7</td>
<td>82.3</td>
<td>15.4</td>
</tr>
<tr>
<td>Guatemala</td>
<td>464</td>
<td>27.3</td>
<td>67.3</td>
<td>19.2</td>
</tr>
<tr>
<td>Low-income Africa, leading 5 exporters</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average</td>
<td>180</td>
<td>22.6</td>
<td>33.2</td>
<td>15.3</td>
</tr>
<tr>
<td>Range</td>
<td>118–265</td>
<td>−5.7–43.9</td>
<td>15.6–68.1</td>
<td>5.9–39.68</td>
</tr>
<tr>
<td>Africa average</td>
<td>69</td>
<td>9.4</td>
<td>26.0</td>
<td>12.0</td>
</tr>
</tbody>
</table>

Source: UNIDO Industrial Development database. Authors’ calculations.

Notes: Low-income Africa leading exporters based on manufactured exports per capita: CDI, GHA, NGA, SEN, ZAM.

The emergence of East Asia has shown that it is possible for new entrants to succeed in global markets. However, the East Asian success story also shows what is needed. East Asia only broke into global manufacturing on a massive scale around 1980. By then the gap in per capita incomes and wages between China and the OECD economies had become sufficiently large to offset the productivity advantage of the OECD’s incumbent industrial producers. Today, new entrants in global markets must compete with incumbent producers who enjoy both low wages (at least relative to the high-income countries) and high productivity (as a result of the factors we discuss in chapters 4 to 6: exports themselves, rising firm capabilities, and an increasingly dense industrial landscape). Transportation cost differences add to the competitive advantage. Generally they are higher in Africa than in Asia, and high Asian trade volumes reduce costs further.5

While the challenges are formidable, we believe there are four reasons to think that Africa may be able to begin to compete with Asia in some products and markets:

—Rising costs in China. China is growing so rapidly that it is encountering rising costs in manufacturing production. One source is increasing real wages. Since 2005, real wage growth in China has accelerated significantly. Manufacturing wages rose from just over $150 a month in 2005 to around $350 in 2010.6 Stiffer enforcement of labor and environmental regulations, gradual expansion of safety net provisions, and the prospect of further increases in the value of the renminbi are likely to erode the low-wage advantage further.7

Geography will play a role as well. China has only a limited number of coastal cities. As these expand, they are likely to encounter diseconomies of congestion, and although Chinese manufacturers may shift production into the interior, this will increase coordination and transport costs.

—*Domestic demand in Asia.* Since the global financial crisis of 2008, Asia’s established industrial economies—China included—have introduced domestic policies intended to reduce their dependence on exports. In China, targeted stimulus measures, including higher infrastructure investment, have helped strengthen domestic demand. In the region more broadly, domestic demand has benefited from strong credit growth. Continued growth of domestic demand is likely to cause some reorientation of manufacturing activity toward the local market, creating space for potential competitors in third-country markets.

—*Moving up the technological ladder.* A number of successful Asian industrializers, including China, Malaysia, and Thailand, are making conscious efforts to move up in terms of the sophistication and technological complexity of their manufacturing. Malaysia and Thailand have shares of medium- and high-technology exports in total exports exceeding 70 percent. China increased its medium- and high-technology share of exports from 45 percent in 2000 to 59 percent in 2010, and Vietnam increased its share of medium- and high-technology exports from about 25 percent to nearly 34 percent over the same period. In part this is a market response to rising real wages. It also reflects the desire to replicate the successful experiences of Japan, Korea, Singapore, and Taiwan in upgrading industry to sustain growth. As countries move up technologically, less sophisticated competitors should be able to enter new sectors and product groups.

—*International economic policy in China.* There is some evidence that economic policymakers in China have made a decision to “offshore” a portion of low-end manufacturing to Africa. By the end of 2009, China’s outward foreign direct investment (FDI) in Africa had reached a stock of US$9.33 billion. A large share (22 percent)—second only to mining—went to manufacturing. More recently,
Chinese investment in African manufacturing has accelerated. From 2009 to 2012 it was estimated at US$1.33 billion. The Chinese government currently offers tariff-free entry to more than 400 products from Africa’s low-income countries, and in addition it is backing the construction of six overseas special economic zones in Africa.\(^{12}\)

These changes in Asia provide a basis for optimism. In contrast to the immediate post–structural adjustment period, there may be increasing room for Africa to break into the market in some low-end, labor-intensive manufacturing activities. To seize the opportunity, however, the region must gain a toehold and begin to master the dominant mode of contemporary international trade—trade in tasks.

**Trade in Tasks**

There has been a spectacular reduction in transport and communications costs in the global economy over the past twenty years. Freight costs have halved since the mid-1970s, driven by investments in transport infrastructure, better use of capacity, and technological progress. The major cost declines have been in road and air transport; ocean freight rates have declined relatively little since the 1980s. International communication and coordination costs have plummeted.\(^ {13}\) The significance of these changes in transport and communications costs is perhaps nowhere more apparent than in the explosive growth of trade in tasks.

In some manufacturing and service activities, a production process can be decomposed into a series of steps or tasks.\(^ {14}\) As transport and coordination costs have fallen, it has become efficient for

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13. For discussion of these issues, see Hummels (2007) and Fink, Matoo, and Neagu (2002).
different tasks to be located in different countries. Task-based production has expanded dramatically during the past twenty years. In the period 1986–90, imported intermediates constituted about 12 percent of total global manufacturing output and 26 percent of total intermediate inputs. By 1996–2000, these figures had risen to 18 and 44 percent, respectively.\textsuperscript{15} Much of this growth is from intra-firm trade along value chains. The OECD places intra-firm trade by multinational companies based in its members at 8 to 15 percent of total trade.\textsuperscript{16} Another recent estimate suggests that as much as 80 percent of global trade is linked to the networks of multinational corporations.\textsuperscript{17} Not surprisingly, exports—the core of task-trade—use a substantially higher share of imported intermediate inputs than production for the domestic market: a ratio of about two to one.

For late-industrializers, trade in tasks has great potential. It is easier to master a single stage of the production process than to develop vertically integrated production. Task-based production has been a major driver of rapid industrialization in the new generation of Asian export manufacturers. Exports of assembled garments from Cambodia and Vietnam have grown at double digit rates over the past ten years. Between 1994 and 1999, Cambodia’s garment exports more than doubled, from US$495 million to US$1,102 million, with about 90 percent of garment shipments going to the United States. Exports of apparel have continued to increase, reaching nearly US$3 billion in 2008. The textile and garment industry has been among Vietnam’s top-five exports since 2001, and despite the 2008–09 global recession, its exports increased at an average annual rate of more than 26 percent during the period 2005–10. Tunisia has enjoyed similar growth in assembly of garments and auto parts for the European market. Manufactured exports to EU countries—mainly France, Italy, Spain, and Germany—have expanded more than 10 percent annually since the 1990s. The Tunisian

\textsuperscript{15} UNIDO (2009).
\textsuperscript{16} OECD (2010).
\textsuperscript{17} UNCTAD (2013).
textile industry has gradually evolved from subcontracting to co-contracting and finally to finished goods to become the fifth largest supplier to the European Union.

Success in attracting and retaining trade in tasks is by no means guaranteed. Because end-stage task-based production depends on imported intermediate inputs, the institutions directly related to international trade (e.g., customs) and transport infrastructure are crucial to success. These elements of “trade logistics” must be of a very high standard in order to cut delivery times and avoid delays. Here Africa is currently at a disadvantage, but it is one that can be remedied by giving greater attention to strengthening the institutions and making the investments that directly affect trade costs, a topic to which we return in chapter 7.

Task-trade investors are also highly footloose. The performance of a number of African economies in response to the U.S. African Growth and Opportunity Act (AGOA) shows the speed with which task-based producers can enter and exit in response to changing market conditions and incentives. The relatively liberal rules of origin under AGOA encouraged final assembly operations in clothing manufacturing in countries such as Kenya, Lesotho, and Madagascar in the early 2000s. The exporting firms were almost entirely foreign owned and typically provided assembly, packaging, and shipping services. AGOA not only gave all sub-Saharan African countries extensive duty-free, quota-free access to the United States, its rules of origin allowed “qualified” (as defined in the legislation) countries to use third-country fabrics or yarn and still export clothing under the AGOA preferences, opening the door to their entry into task-trade.

U.S. imports of clothing from AGOA countries more than doubled, from US$730 million in 2000 to US$1,755 million in 2004, but experienced a major setback when the restrictions on their (mainly Asian) competitors were lifted with the expiration of the Multi-Fiber Arrangement (MFA) in 2005. While the industry contracted substantially, it did not disappear; garment exports have remained above 2000 levels since the expiration of the MFA. At the same time, success in the U.S. clothing market has not yet translated
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into success in other clothing markets—partly as a consequence of much more restrictive rules of origin—or success in exporting other labor-intensive products to the United States.\textsuperscript{18}

**Industries without Smokestacks**

Changes in technology also offer Africa an opportunity that was not available to earlier generations of newly industrializing countries. Falling transport and communications costs have created economic activities in agriculture and services that have high output per worker and are globally traded. Some agricultural value chains and tradable services share a broad range of characteristics with manufacturing. These are “industries without smokestacks,” and they are an increasingly important part of global industry.

** Tradable Services**

Services have historically been viewed by economists as the quintessential “nontraded” activity. For example, eating in a restaurant, getting a haircut, or having a medical checkup all require face-to-face transactions. However, information and communications technology and task-based production have made many other types of services tradable.\textsuperscript{19} Services like back-office operations and accounting, which were previously integrated components of enterprises, can now be spun off and subcontracted. Modern tradable services have many features in common with manufacturing. Like manufacturing, they benefit from technological change and productivity growth. Some tradable services exhibit tendencies for scale and agglomeration economies similar to manufacturing, and the relationship between exports and innovation in services is similar to that of manufacturing.\textsuperscript{20}

\textsuperscript{18} Edwards and Lawrence (2011).
\textsuperscript{19} See, for example, Baumol (1985) and Bhagwati (1984).
\textsuperscript{20} See Ebling and Janz (1999) and Ghani and Kharas (2010).
Since the 1980s, global trade in services has grown faster than merchandise trade, and developing countries are leaders in many of these offshore services. Service exports from developing countries have almost tripled in the last ten years, growing by 11 percent annually. Modern service exports (e.g., computer and information services, financial services, business services, and communication) are growing much faster than traditional service exports such as travel, tourism, and transport.

The globalization of services will continue for three reasons. First, services account for more than 70 percent of global GDP. Second, communications and information costs will continue to fall. For most developing countries, the average cost of an international telephone call to the United States has fallen by 80 percent or more over the last decade. This is a decline in cost that is much more rapid than the fall in transport costs for goods. Third, the cost differential in the production of services across the world is enormous. Because service providers can now sell services without crossing national borders, the scope for exploiting these cost differentials is much higher.

Although Africa trails other developing regions in the growth of services exports, services exports from Africa have grown at 7.2 percent per year since 1998. This is more than six times faster than merchandise exports. Exports of services are about 11 percent of the total exports of the average sub-Saharan African country, although levels vary widely across countries. Such traditional services exports as transit trade and tourism are important in many countries, but there has also been an uptick in information-related services exports and transborder financial services. Services trade is particularly relevant for Africa’s many landlocked countries where transportation costs do not significantly raise export costs, unlike in goods trade. Trade in services accounts for around half of total exports from Rwanda and Ethiopia, and even in diamond-rich Botswana it represents 15 percent of total exports.

23. South Africa is excluded from the average.
As early global service providers transition from low-end to higher-end tradable services, there is growing room for African countries to step into the more standardized segments of the services market. Offshore business services—such as data transcription and call centers—are one example. Unlike East Asia, most African countries use global languages such as English, French, Arabic, and Portuguese. These are great assets for communications-based services.

French investors, for example, established the call center Premium Contact Center International (PCCI) in Dakar, Senegal, in 2002. The company makes prospecting and selling telephone calls to European households for French corporations. Dakar and Paris are in the same time zone. This makes it possible to work within French business hours. Video conferences and the flow of calls travel through a transoceanic cable. PCCI recruited about 1,000 call-center agents, most of them former students at the University of Dakar. The main recruitment criterion was fluency in French with the least local accent. Employees use French names when they are online with clients, and assimilation of French culture is thought to improve productivity. For this reason PCCI staff members take their lunch break while watching French TV.\(^\text{24}\)

KenCall is a Kenyan firm that specializes in providing outbound and inbound voice and data services for large OECD companies. The firm began with outbound voice services, such as developing sales leads and doing post-sales calls with customers. Now it has added business in more lucrative data and inbound voice services. The services the firm offers include sales, billing, customer information, administrative, and data management and level 1 tech support. For its tech support business, KenCall’s employees are certified by Cisco and Microsoft, among other information and communication technologies (ICT) providers.\(^\text{25}\)

Trade in business services has been increasing rapidly in a number of African countries, albeit in all cases except South Africa from

\(^{24}\) Moriset (2004).
\(^{25}\) Dihel and others (2011).
a low base.\textsuperscript{26} During the period 2005–10, the average growth of business services of all African countries for which data are available was 36 percent. This is much higher than the average growth in South Korea (9 percent) and China (22 percent) during the same period. A number of countries, including Kenya, Madagascar, Mauritius, Rwanda, and Senegal, have shown revealed comparative advantage in ICT services.\textsuperscript{27}

Tourism is a tradable service sector in which Africa has an important resource-based comparative advantage. It receives a growing share of world tourist arrivals for both cultural and wildlife tourism. More than 29 million tourists visited the region in 2007, generating nearly US$22 billion in tourist receipts and contributing an average of 6 percent to GDP. Africa attracts more visitors than the Caribbean and Central America combined. Safari tourism is a key product for East Africa and Southern Africa. The main East Africa safari destinations are Kenya and Tanzania. Resort tourism is important in Mauritius, Seychelles, and Mozambique. West Africa mainly attracts business travelers but has small pockets of resort tourism in Cape Verde, Senegal, and the Gambia. Cultural tourism is perhaps the most underdeveloped area and has considerable potential in the Sahel countries of West Africa. Every country has some cultural heritage attractions, indigenous culture, and craft products.

\textbf{Agro-Industrial Value Chains}

The major agro-industrial activity in which Africa has shown the potential to compete is horticulture. Horticultural production encompasses fresh fruit, vegetables, and flowers. The transport of fresh produce over long distances became possible with the development of refrigeration and “cold chains” linking production and consumption points. The ability to keep products fresh and transfer them quickly from farm to shelf adds value. Value is also added through packaging, preparation, and innovation.

\textsuperscript{26} World Bank (2010).
\textsuperscript{27} World Bank (2010).
As transport costs have fallen, an increasing variety of fresh products can be exported profitably. Production of out-of-season crops that can only be grown in northern regions in the summer—citrus, grapes, melons, green beans, peas, asparagus, and cut flowers—has become possible. The most recent trend has been to produce a range of high-value “temperate” exports all year round. Such items as prepared fruit salads, trays of prepared mixed vegetables, and flower bouquets in retail packs can be produced more cheaply in low-income countries due to lower labor costs.28

Global market requirements for horticultural products have become more challenging in recent years due to more rigorous formal standards and the product requirements of demanding buyers.29 The industry is increasingly dominated by lead firms that coordinate vertical supply chains. These lead firms have characteristics associated with modern manufacturing, including product differentiation and innovation, quality assurance based on risk management, and process controls.30 With fresh fruit and vegetables there is a trend toward growing to order, under contract to major European supermarkets. For European flower imports, the key to success is to produce high-quality, modern, and fashionable varieties at the right time of year. For all varieties of horticultural products, economical and efficient transport as well as cold-storage chains are essential. Half the wholesale cost of African fresh produce in European markets is represented by the cost of transport, storage, and handling.

Our African country case studies point to a number of successes in horticulture. High value added horticulture developed first in Kenya. Starting from almost nothing in the late 1960s, exports of fresh flowers, fresh vegetables, and fresh fruit had reached substantial levels in the European market by 1995. Production spread on a smaller scale to Tanzania and Uganda, and at the end of the 1990s Ethiopia succeeded in breaking into the market for cut flowers and

some vegetables. In West Africa, Senegal has had some success with exports of fresh vegetables to European markets.

**Is African Labor Too Expensive?**

Sub-Saharan Africa’s competitive advantage in industry—and in particular its ability to compete in task-based production—hinges in part on low-wage labor. Africa is the world economy’s lowest income region in per capita terms. Other things being equal, this ought to be reflected in a lower overall level of wages. Not surprisingly, given Africa’s sluggish growth of labor-intensive manufacturing, there has been some debate in the academic literature over whether wages and unit labor costs—wages adjusted for productivity—in Africa are too high to compete globally.

**Wages and Enclaves**

One recent contribution to that debate compares labor costs and productivity in selected African countries with other low-income countries, using data from the World Bank’s Enterprise Surveys. It concludes that industrial labor costs are far higher in Africa than one would expect, given its level of GDP per capita. The authors argue that the higher wages to some extent reflect “enclaves” in the industrial sector in Africa. In these enclaves the high-wage outcomes may be the result of rent sharing between labor and incumbent firms protected from external or internal competition, or may reflect other noncompetitive labor market outcomes such as signaling. Controlling for the enclave effect, however, an “Africa effect” remains with an average wage premium of about 50 percent, relative to income

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31. It is important to note that the Enterprise Surveys cover only formal sector firms. Wages in the informal sector are a fraction of formal wages. See Gelb, Meyer, and Ramachandran (2013). Filmer and Fox (2014) reach broadly similar conclusions.
per capita. A wage premium of this magnitude represents a potentially serious barrier to the region’s ability to compete.\textsuperscript{32}

Case study work sponsored by the World Bank research project on light manufacturing casts some doubt on the high labor cost argument, especially when country and sector specificity are taken into account.\textsuperscript{33} The studies compare wages in U.S. dollar terms for skilled and unskilled labor in light manufacturing activities (e.g., polo shirts, leather loafers, wood furniture, and milled wheat) in the formal manufacturing sector in Ethiopia, Tanzania, and Zambia with wages in the same activities in China and Vietnam.

These direct comparisons find that average Ethiopian wages for unskilled labor in light manufacturing are about a fifth of China’s and about a third of Vietnam’s. In Tanzania, the unskilled wage is 44 percent of China’s and equal to Vietnam’s. Average wage costs for skilled labor range from 25 to 33 percent of Chinese costs for Ethiopia and 50 to 58 percent of Chinese costs for Tanzania. Skilled wages are 50 to 55 percent of Vietnamese costs in Ethiopia but are double Vietnamese costs in Tanzania. Even in copper-rich Zambia, where average unskilled and skilled wage costs exceed those in Vietnam, average unskilled labor costs a quarter less and skilled labor 10 percent less than in China.

Wage differentials for workers are highly sector specific within individual countries. Wages for skilled workers range from 12 percent

\textsuperscript{32}. One possible explanation of the Africa effect that Gelb, Meyer, and Ramachandran (2013) discuss is that GDP per capita in Africa is underestimated. This has become more relevant as more African economies “rebase” their economic statistics. Revisions along the lines of the 60 percent boost in Ghana’s GDP in 2010 and the 75 percent increase in Nigeria’s GDP in 2013 would eliminate the distinctive Africa story. A second possibility they explore in some detail is that Africa’s high labor costs are partly explained by high purchasing power parity (PPP) price levels. This implies that although labor is more costly in current dollar terms, it is cheaper in purchasing power terms. Higher domestic costs of nontraded goods, especially wage goods, presumably affect wages through the reservation price of labor. The recent revisions of PPP exchange rates released by the International Comparisons Project cast some doubt on this line of reasoning as well.

\textsuperscript{33}. Dinh and others (2012).
of China for making polo shirts in Ethiopia to a wage premium of 42 percent comparing Tanzania with Vietnam in producing leather loafers. Sector specificity matters as well for unskilled workers. Not surprisingly, given its low per capita income, unskilled wages in Ethiopia are uniformly lower than in China and Vietnam across all product groups. In Tanzania, however, the wages of unskilled workers exceed those in Vietnam in such products as polo shirts and leather loafers.

The focus on Africa’s small formal manufacturing sector begs the question of the potential supply cost of labor if the current enclave arrangement were broken. Elsewhere in Africa’s economies, wages are indisputably low. The current wage premium in large formal firms would presumably fall or disappear under circumstances where enclave enterprises were exposed to greater competitive pressure or labor markets were more competitive. It is also likely that the enclave equilibrium would break down in the face of a massive increase in labor demand, such as occurred during the industrial growth of Bangladesh, Cambodia, and Vietnam. While it is possible that workers in agriculture and informal employment may lack the skills needed to work in large firms, it is difficult to imagine that African workers are any less endowed with the skills needed for end-stage, task-based production than workers elsewhere. The success of several African economies in garment manufacturing under AGOA provides some supporting evidence. It may be that wages are high in Africa because it has too little industry, rather than that Africa has too little industry because wages are high.

**Unit Labor Costs**

Low wages do not guarantee success in labor-intensive manufacturing. At least two other factors come into play. Productivity is as important as wages in determining competitiveness, and because wages and labor productivity vary across sectors, sector specificity matters. Although Gelb and his colleagues find that unit labor costs are higher in Africa than elsewhere, the difference is smaller than in
labor costs; part of the labor cost is offset by higher labor productivity.\textsuperscript{34} Other research using the same investment climate surveys comes to a similar conclusion.

One study undertaken by the World Bank finds that, controlling for per capita income, labor productivity in manufacturing does not appear to be consistently lower in sub-Saharan Africa than in other regions. Indeed, more African countries have higher productivity than would be expected at their level of income than do not.\textsuperscript{35} A second study using the same survey data finds that, after controlling for the business environment, firms in Africa’s formal manufacturing sector perform as well in productivity terms as those in other low-income countries.\textsuperscript{36} Surveys of small and medium enterprises (SMEs) in Ethiopia, Tanzania, Zambia, China, and Vietnam indicate that workers in SMEs in sub-Saharan Africa are as productive as those in East Asia.\textsuperscript{37}

The case study research on productivity is consistent with the cross-country econometric evidence. Physical labor productivity—the number of items produced by a worker in a day—in the light manufacturing processes studied in Ethiopia, Tanzania, and Zambia is comparable to China and Vietnam, except in the production of wooden chairs. When wages are paired with the number of products a worker can produce in a day, “well managed” firms in Ethiopia and Tanzania—those with physical productivity that falls within the range of the worst and the best practice Chinese and Vietnamese firms studied—show a unit labor cost advantage.

In sum, the body of evidence, both econometric and case study, points to the conclusion that unit labor costs in African industry are

\textsuperscript{34} Gelb, Meyer, and Ramachandran (2013).
\textsuperscript{35} Dinh and Clarke (2012).
\textsuperscript{36} Harrison, Lin, and Xu (2013).
\textsuperscript{37} Dinh and his colleagues characterize “well managed” firms as those with physical productivity per worker that matches levels typical of their East Asian comparator firms. It is important to note that this is the “right hand tail” of firms in the World Bank African sample. It is not the “representative firm.” See Dinh and others (2012).
not out of line with the region’s level of income per capita. Wages in some firms and in some countries are higher than those of Asian competitors; in others they are not. Some firms in some industries in Africa are as productive as their Asian competitors and unit labor costs in those firms are not excessive. These are the countries and sectors in which Africa can currently compete. There is, however, considerably more variation in African productivity levels than in East Asia, and the productivity of the “representative firm” is higher in East Asia. The challenge, therefore, is to have more African firms in more industries meet the productivity threshold to break in.

**Natural Resources and Industrial Development**

Africa is richly endowed with metal and nonmetal minerals, as well as energy resources, and many of its economies are highly resource dependent. Although precise data are not available, principally because much of the Continent is underexplored, it is likely that Africa hosts about 30 percent of the world’s mineral reserves. New discoveries of natural resources in previously non-resource-abundant economies such as Ghana, Kenya, Mozambique, Tanzania, and Uganda raise the prospect that an increasing number of African economies will enter the ranks of natural resource exporters. This poses a major challenge to industrialization and, perhaps, to long-run growth as well. Natural resource abundance makes it more difficult to compete internationally in industries unrelated to the natural resource.

**Natural Resources and Risk: Price Declines and Shocks**

There is extensive cross-country literature linking natural resource dependence to poor economic performance, which is known as the “resource curse.”\(^{38}\) One thread of the resource curse literature

focuses on risk. High concentration of output and exports in one or two commodities can expose resource-rich economies to long-run declines in commodity prices and price volatility. Both are threats to long-run growth in resource-abundant economies.

Global GDP growth has consistently outpaced the demand for commodities, and despite recent spikes, commodity prices are likely to continue their gradual downward path relative to manufactured goods and knowledge-intensive services. Long-term estimates of the rate of decline range from $-0.6$ to $-2.3$ percent per year. The reasons for this secular decline have been widely explored. They include relatively low demand elasticities for primary commodities relative to manufactures and services, growth of substitutes, and rapid technological advances that have reduced the cost of growing or extracting commodities.\(^\text{39}\)

A major external change would be required to break the fall in commodity prices, and it is not clear at present what that change might be. One favored scenario—increases in demand due to rapid growth in developing countries that are large net importers of energy, materials, and agricultural commodities—is likely to have two offsetting effects. First, technological advances in both the production and use of commodities in a broad range of developing countries will increase supply and reduce demand. Second, outward investment in the production of commodities by net importers is likely to increase supply. While other commodity prices are expected to decline, oil may be an important exception. The exhaustion of easily accessible reserves may place a floor on oil prices, but some observers are skeptical of this view. They argue that the drive to reduce carbon emissions may begin to make a dent in energy use and oil prices.\(^\text{40}\)

Independent of their long-term trend, commodity prices are likely to remain highly volatile, and price spikes such as the ones in the mid-2000s as well as price collapses such as the 2015 crash affecting oil markets will recur. The reasons for high volatility of commodity

prices have also been widely discussed. They include low short-term income and price elasticities of demand and supply, long lead times before investment and supply respond to changing demand conditions, weather shocks to agricultural commodities, and policy-induced distortions that impede the orderly adjustment of commodity markets. Newer sources of instability include more variable weather because of climate change and increased use of commodities and commodity derivatives for speculation.

Volatility may limit the growth prospects of African economies that are dependent on minerals and other commodities. Historical data suggest that external shocks are especially important determinants of growth in resource-rich countries.\(^{41}\) While output variability in general is declining among African countries, the relative importance of external shocks as sources of output instability in Africa has actually increased in the past fifteen years. This increase is the result of two factors. One is good news and reflects Africa’s marked improvement in economic management—the variance of internal shocks, including conflicts and policy, has declined substantially. The other is not good news: there has been a relative increase in the vulnerability of output to external shocks, such as the global economic recession and price volatility.\(^{42}\)

**Natural Resources and Diversification**

One response to the resource curse—and the path chosen by such resource-abundant economies as Chile, Indonesia, and Malaysia—is to diversify the economy away from the resource sector. Industry, with and without smokestacks, is clearly one option for diversification. This is, however, no easy task. Income from resource extraction increases the demand for all goods. In the case of traded goods, the increased demand can be met by imports at fixed international prices. The production of nontradable goods, on the other hand, is usually

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42. Raddatz (2008).
characterized by rising marginal costs, and their price will generally rise relative to internationally traded goods. The foreign exchange market will, other things being equal, reflect this in a real exchange rate appreciation. This is the Dutch disease.

While it is appropriate for labor and capital to shift into nontradable goods and services, Dutch disease limits the ability of firms to compete against imports or to export, and it makes the development of manufacturing and tradable services outside of the resource sector more difficult, unless governments take countervailing action through macroeconomic and supply-side policies. The current crop of Africa’s resource-rich economies show little evidence of structural change toward higher value added tradable activities outside the natural resources sector. We see this very clearly in table 3-2.

Resource-abundant economies in Africa have structural characteristics that are very different from typical middle-income countries and from their non-resource-rich neighbors. Not surprisingly, the shares of agriculture and manufacturing in GDP are lower in the resource-rich economies than in the middle-income benchmarks. The manufacturing deficit is particularly large. Other industry, mainly extractives, dominates the structure of output but not of employment. Mines and gas fields do not generate many direct jobs. Exports are much more highly concentrated in natural-resource-based products. Three-quarters of exports of resource-rich countries are found in less than three sectors. Resource abundance is likely to constrain the ability of a growing number of African countries to break into other areas of the global economy.

**Summing Up**

In contrast to circumstances at the turn of the century, some African countries have a real chance to break into global industrial markets. Conditions in Asia are changing, and despite the productivity advantages of Asia’s incumbent industrial producers, rising costs and real wages in China and changes in economic policy in Asia’s major
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<th></th>
<th>Value added share</th>
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<td>6.6</td>
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<td>44.3</td>
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<td>21.1</td>
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<td>Africa, low income</td>
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<td>25.2</td>
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</table>

Sources: World Bank World Development Indicators (WDI) database; de Vries and de Vries (2013). Authors' calculations.
Can Africa Break In?

industrial economies offer a window of opportunity. Recent decisions by the Chinese government to offshore some industrial capacity to Africa adds the weight of the world’s most successful newly industrializing economy to these possibilities.

Changes in the nature of international trade also open up space. Trade in tasks—the vertical disintegration of the manufacturing production process—offers the prospect for new industrializers like those in Africa to find a foothold along the less demanding stages of the production value chain. Success in trade in tasks is not guaranteed, however. Wages appropriate to low levels of per capita income and good trade-related institutions and infrastructure are all key success factors. Attracting task-based investors and finding ways to keep them are also essential. Cambodia and Vietnam have seized this opportunity, and within Africa Mauritius and Tunisia have done so. There is no reason, apart from misdirected policies, why other African economies cannot do so as well.

Falling transport and communications costs have created a new generation of “industries without smokestacks.” These tradable services and agro-industrial exports have more in common with manufacturing than with the sectors to which they are assigned in conventional economic statistics. The good news here is that Africa has many location-specific sources of comparative advantage in these sectors—major languages, a southern hemisphere climate, and exotic wildlife, among them.

Breaking in depends in part on taking advantage of relatively low wages. Because Africa is the world’s poorest region, the supply price of industrial labor ought to be low, but the slow pace of industrial development has led some to question whether wages are truly low by global standards. There is some evidence to suggest that wages in Africa’s small formal manufacturing sector are high compared to other low-income countries such as Bangladesh, but it is very likely that these wages reflect an arrangement between firms and workers that would break down either in the face of increased competition or a massive increase in labor demand.

Competitive success, of course, depends not only on low wages but on low unit costs of labor as well. These are determined in large
part by firm-level productivity. Our reading of the evidence is that the supply price of labor in Africa is not excessive for its level of income and that productivity in some firms and in some sectors is high enough for Africa to compete. The key to success, however, is achieving and sustaining improvements in productivity at the level of the firm. That is the topic to which we turn in part III.

Resource abundance poses a major challenge to industrialization in Africa. It is also a risk to long-term growth if new resource exporters fall victim to the resource curse. At the same time, geology is not destiny. Tradable goods production outside the nonresource economy will expand or contract according to whether it is internationally competitive. This depends not only on the exchange rate, but also on the investments and institutional innovations that governments make to enhance productivity, a subject we take up in chapter 8.