



# China's Engagement with Africa

From Natural Resources to  
Human Resources

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## **The John L. Thornton China Center at Brookings**

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## Abbreviations

AfDB	African Development Bank
AIIB	Asian Infrastructure Investment Bank
AsDB	Asian Development Bank
BIS	Bank for International Settlements
CDB	China Development Bank
EAC	East Africa Community
EP	Equator Principles
EPFI	Equator Principles Financial Institution
China Exim Bank	Export-Import Bank of China
FDI	Foreign direct investment
GVC	Global value chain
G-24	The Intergovernmental Group of Twenty Four
IADB	Inter-American Development Bank
IBRD	International Bank for Reconstruction and Development, World Bank
IDA	International Development Association, World Bank
IEG	Independent Evaluation Group, World Bank
IFIs	International financial institutions
ILO	International Labour Organization
IMF	International Monetary Fund
MDB	Multilateral development bank
MOFCOM (China)	Ministry of Commerce (China)
NBS (China)	National Bureau of Statistics (China)
ODF	Official development finance
ODI	Overseas direct investment
OECD	Organisation for Economic Co-operation and Development
PBOC	People's Bank of China

PPI	Private participation in infrastructure
PPP	Purchasing power parity
PWT	Penn World Tables
RMDB	Regional multilateral development bank
SAFE (China)	State Administration of Foreign Exchange (China)
SOE	State-owned enterprise
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
UN DESA	United Nations Department of Economic and Social Affairs
WDI	World Development Indicators, World Bank
WGI	Worldwide Governance Indicators, World Bank
WITS	World Integrated Trade Solution, World Bank
WTO	World Trade Organization



## EXECUTIVE SUMMARY

Since 2000 China has emerged as Africa's largest trading partner. Chinese direct investment in and lending to African countries has grown rapidly as well. A bevy of Chinese workers have moved to Africa in recent years, with estimates running as high as one million. China's engagement in Africa has no doubt led to faster growth and poverty reduction on the continent. Growth in Sub-Saharan African has been very impressive over the past decade, especially in the mid-2000s when GDP growth averaged close to 7% per annum. Note that growth has since slowed down, especially in 2015 and 2016. Both the high levels of growth and the subsequent slowdown are related to China.

African growth rates are not as impressive when discussed in per-capita terms because population growth has continued at a rapid rate (nearly 3% per year between 2005 and 2015). Overall GDP growth is an indicator of the region's growing weight in the world economy. Per-capita growth is needed to improve living standards and to reduce poverty. The per-capita GDP growth rate of the average African economy was 2.8% in the 2000s, a large increase over the 0.6% per annum rate in the 1990s. Some of this growth acceleration is attributable to internal developments: African countries have strengthened their institutions and macroeconomic policies. But demand from China for the continent's main exports—oil, iron, copper, zinc, and other primary products—has led to better terms of trade and higher export volumes, which have also been



important factors. The acceleration of African growth is important because it has led to the best progress on poverty reduction in several decades. Between 1990 and 2002 the poverty rate in Sub-Saharan Africa was static, with 57% of the population living below the World Bank's poverty line of US\$1.90 per day. Between 2002 and 2011 the poverty rate dropped 13 percentage points. Sustained growth is needed to further reduce poverty.

While China's deepening engagement with Africa has largely been associated with better economic performance, its involvement is not without controversy. This is particularly true in the West, as typical headlines portray an exploitive relationship: "Into Africa: China's Wild Rush"; "China in Africa: Investment or Exploitation?"; and "Clinton warns against 'new colonialism' in Africa." This study aims to objectively assess China's economic engagement on the African continent. The surge in Chinese involvement is relatively recent, so one simple objective is to marshal evidence about the scale of China's trade, investment, and migration. Beyond that is the question of whether China's involvement differs from that of Africa's other economic partners.

China's economic engagement with Africa is a complex issue with numerous facets. It is usually difficult to find good and comprehensive data on low-income countries, and much of Africa is low-income. This general problem is compounded by a tendency toward non-transparency on the part of the Chinese government and China's state-owned enterprises (SOEs). In general, China's engagement with Africa is a win-win scenario for both sides, so it would make sense to be more forthcoming with information. Still, there is enough available information on and research into China's trade, investment, and migration vis-à-vis Africa to draw some tentative conclusions and to make some recommendations for African countries, China, and the West. Specifically, this study draws six main conclusions.

The first tentative conclusion relates to the scale of China's activities in Africa. The media often portrays China's involvement

as enormous, potentially overwhelming the continent. To be fair, China does not always help its image in this regard. When Xi Jinping participated in the latest China-Africa summit in South Africa in December 2015, he pledged US\$60 billion of support for African development. This is a big, general commitment covering many different areas and potentially disbursing over many years. Almost certainly, some of the plans will never pan out. In terms of realized Chinese investment in Africa, the amounts are significant enough to contribute to African growth but not at the huge scale that some media coverage suggests. According to data from China's Ministry of Commerce (MOFCOM), the stock of Chinese direct investment in Africa was US\$32 billion at the end of 2014. This would represent less than 5% of the total stock of foreign investment on the continent. However, about half of Chinese outward investment is reported as going to Hong Kong, even though much of this transits to other locations. In other words, MOFCOM's figures for Chinese investment in different countries may be lower than in reality. But even if one doubled the estimate of Chinese outward direct investment (ODI) in Africa, China's share of overall ODI would still be modest.

Stocks naturally change slowly. But the *World Investment Report 2015* similarly finds that China's share of inward direct investment flows to Africa during 2013 and 2014 was only 4.4% of the total. Of course, direct investment is not the only form of foreign financing. The Export-Import Bank of China and China Development Bank have also made large loans in Africa, mostly to fund infrastructure projects. In recent years, Africa has received about US\$30 billion annually from outside sources for infrastructure projects, and China has provided about one-sixth of that financing. In short, Chinese financing is substantial enough to contribute meaningfully to African investment and growth, but the notion that China has provided an overwhelming amount of finance and is buying up the whole continent is inaccurate.

The second main finding from the study concerns China's direct investment and governance. China has drawn attention

by making large resource-related investments in countries with poor governance indicators, such as DR Congo, Angola, and Sudan. These deals are certainly part of the picture when it comes to China's engagement with Africa; MOFCOM data show large stocks of Chinese investment in those countries. But the more general relationship between Chinese direct investment and recipients' governance environments is different. After controlling for market size and natural resource wealth, total foreign direct investment is highly correlated with measures of property rights and rule of law, as one might expect. This is true both globally and within the African continent. China's ODI, on the other hand, is *uncorrelated* with measures of property rights and the rule of law after controlling for market size and natural resource wealth. In this sense, Chinese investment is indifferent to the governance environment in a particular country. Again, this is true both globally and across the African continent. While China has investments in DR Congo, Angola, and Sudan, those are balanced by investments in African countries that have relatively good governance environments. South Africa, for instance, is the foremost recipient of Chinese investment. But because Western investment tends to avoid the worst governance environments, Chinese investment is *relatively* high in those locations.

A third main finding emerges from examining MOFCOM's database on Chinese firms investing in Africa. In the aggregate data on Chinese investment in different countries, the big state enterprise deals naturally play an outsized role. MOFCOM's database on Chinese firms investing in Africa, on the other hand, provides a snapshot of what small and medium-sized Chinese firms—most of which are private—are doing in Africa. Unlike the big SOE investments, these firms are not focused on natural resource extraction. The largest area for investment is service sectors, with significant investment in manufacturing as well. Many African economies are interested in attracting Chinese investment in manufacturing and services and welcome this development.

The fourth finding relates to infrastructure finance. Africa has well-known infrastructure deficiencies, but in recent years infrastructure financing has expanded and helped many African countries begin to rectify these deficiencies. Much of the funding for this will have to come from domestic sources, but foreign financing can play a useful, complementary role. As noted above, in the past few years Africa has received about US\$30 billion annually in external finance for infrastructure. China is providing about one-sixth of this amount. Chinese financing is a useful complement to other sources, particularly as traditional finance from multilateral development banks and bilateral donors is concentrated on water supply and sanitation. Likewise, private participation in infrastructure is primarily aimed at telecommunications. China has filled a niche by focusing on transportation and power.

Chinese financing of infrastructure has also enabled Chinese construction companies to gain a firm foothold on the continent. Evidence suggests that Chinese companies have become highly competitive, crowding out African construction companies. This is an area where a tradeoff seems to exist between, on the one hand, getting projects completed quickly and cheaply and, on the other, facilitating the long-term development of a local construction industry.

This point leads to the fifth finding of the study. There are many Chinese workers in Africa; the total is disproportionately high when compared to the amount of financing that China has provided and compared to migrants from other continents. This is a tentative conclusion because the data on this issue are particularly weak. But estimates of Chinese migrants in Africa exceed one million. Many migrants initially move to Africa as workers on Chinese projects in infrastructure and mining and then, perceiving good economic opportunities, stay on. Similar to the dilemma confronting the continent's construction industry, African countries face a tradeoff here: Chinese workers bring skills and entrepreneurship, but their large numbers limit African workers' opportunities for jobs

and training. The popular notion that Chinese companies only employ Chinese workers is not accurate, but the overall number of Chinese workers in Africa is large, and it is not clear that all of these workers are on the continent legally.

A final important finding of the study is that the foundation for the Africa-China economic relationship is shifting. China's involvement in Africa stretches back decades, but the economic relationship accelerated after 2000, when China's growth model became especially resource-intensive while its domestic supplies of energy and minerals were dwindling. In the early 2000s, China was poor in natural resources but boasted a rapidly growing labor force that gave the country comparative advantage in manufactures. By contrast, Africa was relatively resource-rich, with a labor force significantly smaller than China's. It was logical for China to import natural resources from Africa, and demand from China drove up prices and trade volumes. It was also natural for China to export manufactures to Africa.

These patterns of trade and investment are now likely to gradually shift in response to changing demographics. The working-age population in China has peaked and will shrink over the coming decades. This has contributed to a tightening of the labor market and an increase in wages, which benefits Chinese people. Household income and consumption are also rising. At the same time, China's old growth model, which focuses on exports and investment, is running out of steam. China is already the largest exporter in the world, and it is unrealistic to expect its exports to grow faster than world trade, so exports have become a lagging sector for China. And after years of high investment, China now faces excess capacity in real estate, manufacturing, and infrastructure. Chinese growth has entered a phase in which consumption is growing faster than investment, and the expansion of consumption primarily benefits services, not industry. Compared to past trends, China's changing pattern of growth is less resource-intensive, so China's needs for energy and minerals are relatively muted. At the

same time, China is likely to be a steady supplier of foreign investment to other countries, and part of that will involve moving manufacturing value chains to lower-wage locations.

Africa's demographics are moving in the opposite direction. In fact, they resemble China's at the beginning of its economic reform 35 years ago. About half of Africa's population is below the age of 20, which means the working-age population will surge over the next 20 years, and will probably continue growing until the middle of the century or later. Roughly speaking, Africa needs to create about 20 million jobs per year to employ its expanding workforce. Twenty years from now, it will need to create 30 million jobs per year. Africa's demographics present both an opportunity and a challenge. It is unrealistic to expect the China-Africa economic relationship to change overnight. Nor would it be reasonable to expect large volumes of Chinese manufacturing to move to the continent in the near future; it would be more natural for value chains to migrate from China to nearby locations such as Vietnam and Bangladesh. But if even small amounts of manufacturing shift, this could make a significant difference for African economies, which are starting out with an extremely low base of industrialization. And it is useful to have a long-term vision that an economic relationship that started out very much centered on natural resources should shift over time to a greater focus on human resources.

While these findings are tentative given the weakness of some of the underlying data, it is still possible to make some fairly robust recommendations for African countries and their civil societies, for China, and for the West, which has been mostly critical of the deepening Africa-China relationship.

The first recommendation for African governments is to work with China to produce better data on all aspects of the economic relationship. This is most important as it relates to migration, as there are widely varying estimates on the number of Chinese workers in Africa. African governments should

track and publicize how many work visas they grant. They should also carefully track and publicize how much foreign debt the country has taken on, both with and without a sovereign guarantee. African countries generally have low debt burdens following previous write-offs by Western governments and international institutions. This puts them in a good position to take on moderate levels of additional debt, but it is important to guard against the reemergence of unsustainable debt. The amounts and terms of loans for infrastructure and investments in mining should be easily available to the public so that citizens can judge for themselves the costs and benefits of different projects.

As highlighted, despite problems with the data related to Chinese workers in Africa, there seem to be many such workers. Given the immigration laws in place, it seems unlikely that all of them are in Africa legally. A second strong recommendation for African governments is to do a better job of managing the inflow of labor into their economies. As mentioned above, a real tradeoff exists here, as Chinese migrants bring skills and useful connections to the Chinese economy. However, throughout its own development, China severely limited the number of workers that foreign investors could bring as part of their projects, instead requiring those investors to train the local labor force. African countries would do well to study these practices and try to manage their labor inflows. Ideally, worthwhile projects can move ahead while maximizing the positive impact on the local labor market.

Africa needs to create more jobs to keep up with its rapid population growth. High commodity prices and an export boom supported African economies over the past decade, but it is likely that the big commodity cycle has ended for the foreseeable future. Compared to the recent past, it is both more important for African economies to develop manufacturing and tradable services, and more feasible. Chinese wages have risen substantially, and exchange rate movements have also improved African competitiveness. It will be no simple task,

however, to attract manufacturing and service investments from foreign and domestic firms. Therefore, a third priority for African countries is to improve investment climates. Wages and exchange rates are not enough to make a location competitive. Good infrastructure in power, transport, and telecommunications are also needed, as is the “software” of integration: efficient customs administration, reasonable control over corruption, and secure property rights.

China’s large-scale economic engagement in Africa is still a relatively recent phenomenon, and it makes sense that the engagement would evolve based on experience. Some recommendations for the Chinese government and Chinese firms include:

First, China should reconsider its big mining investments in poor-governance environments. These investments by state enterprises are generally not working out. SOEs are playing with the public’s money and seem to be wasting quite a bit of it. China will be better served if more of its outward investment is carried out by the private sector, which is likely to earn better returns, just as it does within China. In addition to the poor results from some of these resource investments, it is now clear that China’s appetite for natural resources will remain muted compared to the 2000s, so there is no longer the same need for risky investments in these areas.

Second, China should work with African governments to encourage Chinese firms to hire and train African workers and to limit the flow of labor to amounts designated by African countries. Movements in wages and exchange rates help with this adjustment. It is becoming expensive to send a worker from China to Africa, so companies have growing financial incentives to hire locally.

China has played a useful role in countries such as Ethiopia by setting up industrial zones, financing infrastructure, and encouraging Chinese firms to move some manufacturing production to Africa. A third recommendation is for China to



step up this kind of engagement, an effort that would align with Chinese leaders' tendency to take a long-term perspective. Throughout the near future, the labor force in South and Southeast Asia will continue to increase, and these will be natural sites for labor-intensive manufacturing. But over time, Africa will become the world's primary source of net labor force growth. Africa and its partners stand to benefit if economies there diversify into manufactures and tradable services. Through infrastructure and direct investment, China can play a critical role in this process.

Meanwhile, Western governments and the media have been largely negative about China's engagement with Africa. A first recommendation for Western audiences is to take a more balanced and objective view toward a phenomenon that is naturally complex and multifaceted. The fact that public opinion surveys in Africa mostly reflect positive attitudes about China is important. If Chinese involvement were largely detrimental, that would suggest that African populations do not know where their interests lie. It is much more likely that China's trade and investment provide benefits to African economies and that people on the ground correctly perceive this. Given the tremendous need for infrastructure and job creation in Africa, Western audiences should be pleased that China's efforts are helping to alleviate these pressures.

A second recommendation for Western governments is that they step up their existing efforts to strengthen governance in African countries. This includes providing technical assistance to help government and judicial systems operate more efficiently, as well as helping strengthen civil society. Mining and infrastructure projects carry environmental and social risks no matter the funding source. There are plenty of examples of Western companies whose investments have led to environmental and social problems. The utility of finance depends to a large extent on the quality of governance both at the national and local levels. This is a long-term objective; there is no simple recipe for improving governance. But for Western

audiences to sit back and criticize various Chinese-African collaborations is unhelpful and typically not appreciated by African audiences. Providing more support to improve governance would be a constructive alternative.

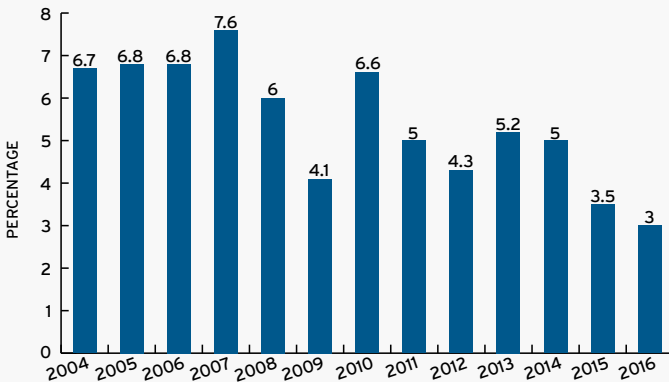
The third recommendation for Western governments is to be more welcoming of China and other developing countries as they seek to become leading players in existing international financial institutions (IFIs). Many of the practices of the World Bank and regional banks, including the African Development Bank, reflect the preferences of developed countries. This system has evolved because of the dominant role developed countries have played in financing these institutions, particularly in providing the subsidized loans and grants on which low-income countries rely. But the world economy is changing. The share of the world economy made up by China and other emerging markets has risen enormously over the past couple of decades, whereas governance of IFIs has been much slower to change. The creation of the Asian Infrastructure Investment Bank under Chinese leadership signals that China wants to more actively shape the global financial architecture. It would be smart for the United States and other Western powers to welcome this kind of initiative from China. There will naturally have to be some evolution of global institutions to reflect a more diverse set of preferences, but doing so has the potential to make institutions more effective, and certainly more representative and legitimate. The alternative—moving to a world with competing economic institutions and blocs—is far less attractive. African countries do not want to choose between China and the West, and there is no reason that they should have to.

## CHAPTER 1

# INTRODUCTION

Since 2000 China has emerged as Africa's largest trading partner. Chinese direct investment in and lending to African countries has grown rapidly as well. A bevy of Chinese workers have moved to Africa in recent years, with estimates running as high as one million. China's engagement in Africa has no doubt led to faster growth and poverty reduction on the continent. Growth in Sub-Saharan Africa has been very impressive over the past decade, especially in the mid-2000s when GDP growth averaged close to 7% per annum (Figure 1.1).<sup>1</sup> Note that growth has since slowed down, especially in 2015 and 2016. Both the high levels of growth and the subsequent slowdown are related to China and will be analyzed in more detail in Chapter 2.

**Figure 1.1: GDP Growth of Sub-Saharan Africa, 2004-2016 (projected)**



Source: IMF, *Regional Economic Outlook*. Accessed April 25, 2016.

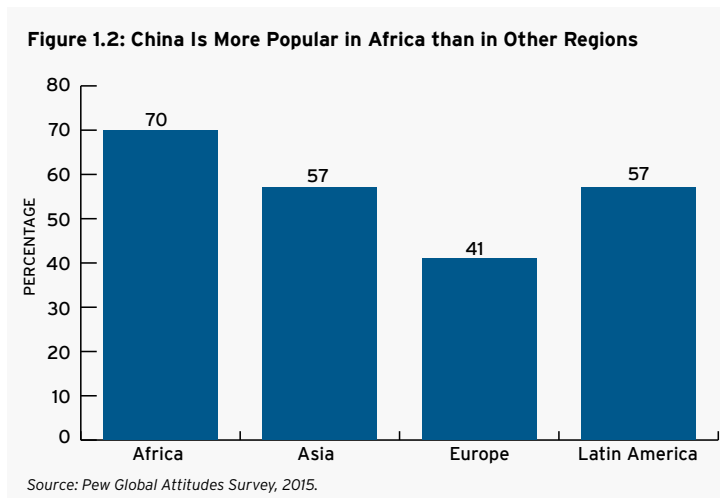
African growth rates are not as impressive when discussed in per-capita terms because population growth has continued at a rapid rate (nearly 3% per year between 2005 and 2015).<sup>2</sup> Overall GDP growth is an indicator of the region's growing weight in the world economy. Per-capita growth is needed to improve living standards and to reduce poverty. The per-capita GDP growth rate of the average African economy was 2.8% in the 2000s, a large increase over the 0.6% per-annum rate in the 1990s.<sup>3</sup> Some of this growth acceleration is attributable to internal developments: African countries have strengthened their institutions and macroeconomic policies. But demand from China for the continents' main exports—oil, iron, copper, zinc, and other primary products—has led to better terms of trade and higher export volumes, which have also been important factors. The acceleration of African growth is important because it has led to the best progress on poverty reduction in several decades. Between 1990 and 2002 the poverty rate in Sub-Saharan Africa was static, with 57% of the population living below the World Bank's poverty line of US\$1.90 per day. Between 2002 and 2011 the poverty rate dropped 13 percentage points.<sup>4</sup> Sustained growth is needed to further reduce poverty.

While China's deepening engagement with Africa has largely been associated with better economic performance, its involvement is not without controversy. This is particularly true in the West, as typical headlines portray an exploitive relationship: "Into Africa: China's Wild Rush"; "China in Africa: Investment or Exploitation?"; and "Clinton warns against 'new colonialism' in Africa."<sup>5</sup> This study aims to objectively assess China's economic engagement on the African continent. The surge in Chinese involvement is relatively recent, so one simple objective is to marshal evidence about the scale of China's trade, investment, and migration. Beyond that rests the question of whether China's involvement differs from that of Africa's other economic partners.

While this study focuses on economics, it is worth noting that China has also made a concerted diplomatic push in Africa.

President Xi Jinping visited South Africa during his first overseas trip as president. The top two Chinese officials made nine visits<sup>6</sup> to Africa between 2004 and 2015, compared to only four for the president and vice president of the United States. China has clearly prioritized its diplomatic efforts on the continent. In general, African populations welcome China's attention. The Pew Global Attitudes survey from 2015 found that China was more popular in Africa than in any other region. The African countries surveyed were South Africa, Ghana, Uganda, Senegal, Kenya, Ethiopia, Burkina Faso, Tanzania, and Nigeria, and 70% of respondents in those countries held a favorable view of China (Figure 1.2).<sup>7</sup> By contrast, China had favorability ratings of 57% in both Asia and Latin America, and only 41% in Europe. In the United States, only 37% of people viewed China favorably. (Similarly, only 40% of Chinese held a positive view of the United States.)

Debates over China's role in Africa are occurring in Africa, the West, and China. Reviewing the contours of this debate provides a useful starting point before turning to specific aspects of China's economic engagement in Africa. Similar to the African general public, African governments and intellec-



tuals generally view China's role on the continent in a positive light. For example, in a *New York Times* op-ed from 2012 titled "Beijing: Boon for Africa," Zambian economist Dambisa Moyo writes:

The evidence does not support the claim that Africans themselves feel exploited. To the contrary, China's role is broadly welcomed across the continent. A recent Pew Research Center survey of 10 sub-Saharan African countries found that Africans supported Chinese investment by very large margins. In virtually all countries surveyed, China's involvement was viewed in a much more positive light than America's; in Senegal, 86 percent said China's role in their country helped make things better, compared with 56 percent who felt that way about America's role. In Kenya, 91 percent of respondents said they believed China's influence was positive, versus only 74 percent for the United States.

If anything, the bulk of responsibility for abuses lies with African leaders themselves. The 2011 Human Rights Watch Report "You'll Be Fired If You Refuse," claiming a series of alleged labor and human rights abuses in Chinese-owned Zambian copper mines, missed a fundamental point: the onus of policing social policy and protecting the environment is on local governments, and it is local policy makers who should ultimately be held accountable and responsible if and when egregious failures occur.<sup>8</sup>

Moyo's commentary suggests a useful framework for considering the impact of Chinese trade, investment, and migration: namely, that it depends primarily on the governance of the country or the location of investment within the country. Moyo cites some alleged labor and human rights abuses in Chinese investments, but chalks this up to a failure of local government to enforce social and environmental policies.

Not everyone's views are positive, of course. Lamido Sanusi, the former central bank governor of Nigeria, wrote a prominent piece in the *Financial Times* in 2013 urging fellow Africans "to wake up to the realities of their romance with China":

China takes our primary goods and sells us manufactured ones. This was also the essence of colonialism. The British went to Africa and India to secure raw materials and markets. Africa is now willingly opening itself up to a new form of imperialism.

The days of the Non-Aligned Movement that united us after colonialism are gone. China is no longer a fellow under-developed economy—it is the world's second-biggest, capable of the same forms of exploitation as the west. It is a significant contributor to Africa's deindustrialisation and underdevelopment.<sup>9</sup>

Critical views have compounded in the past couple of years with the end of the commodities boom. In the quote above, Sanusi refers to the commodity-boom period, during which China's thirst for minerals and energy drove up prices and led to greater exports of those primary products from Africa, as will be discussed in detail in Chapter 2. I would argue that it does not make sense to criticize the Chinese for paying high prices for the continent's exports. A primary-exporting country with reasonably good governance can use the windfall of commodities exports to invest in education and infrastructure, setting the stage for a diversified economy. But Sanusi is right that the initial pattern of trade between China and Africa resembled what occurred under colonialism. This has started to change over the past couple of years, however. China's growth is slowing and, most importantly, its economy is transitioning to a new growth model in which consumption, rather than resource-intensive investment, becomes the main driving force.

As a result of this shift in its growth model, China's imports from Africa fell nearly 40% in 2015 to US\$67 billion. The

reduced demand from China was an important factor in the dramatic slowdown in the growth rate seen in Figure 1.1. Meanwhile, China's exports—consisting mostly of manufactured products—continued apace, totaling US\$102 billion last year. The result is a ballooning trade imbalance that has become a new source of controversy. In light of this new reality, African leaders and intellectuals are seeking a realignment of the economic relationship. Labor-intensive manufacturing is starting to migrate out of China in response to higher wages and demographic changes there. Naturally, much of it is moving to nearby countries such as Vietnam. But African leaders would also like to attract some of this investment, as Dennis Munene of the Africa Policy Institute explains in this recent analysis:

The Sino-Africa relationship has become symbiotic over time with China progressively turning to Africa as a source of energy reserves and raw materials to fuel its expanding economy, as well as new markets for Chinese products.

But as factories slow down, so has trade, which has impacted commodity prices. The recent past has seen the slowdown of economies such as Nigeria, Angola and Ghana that for a long time were deemed oil-dependent. These economies are now strategizing on diversifying their economies to cushion against such external shocks.

Africa is therefore looking at how ongoing partnerships with China would help strengthen legal and regulatory institutions. This would not only realize the re-emergence of the manufacturing sector, which has been idle for a long time, but will stimulate intra-Africa trade that many experts have been campaigning for. It is also time to fast-track the planned relocation of Chinese industries to Africa.<sup>10</sup>



Another aspect of the debate over China's presence in Africa centers on political systems. Better economic institutions and better economic performance in Africa have paralleled a trend toward democracy. There is wide variation across the continent in terms of the extent of democratization, but on average Africa is more democratic than it was in the 1990s. China stands out as a country that has achieved excellent economic results under an authoritarian regime, as has been noted in some of the discussions within Africa:

[D]rawn to the example set by the fast-growing economies of Asia like China, Singapore and Malaysia—all of which achieved phenomenal growth under modernizing authoritarian governments—a group of African leaders has emerged that openly declares its admiration for this mode of government.

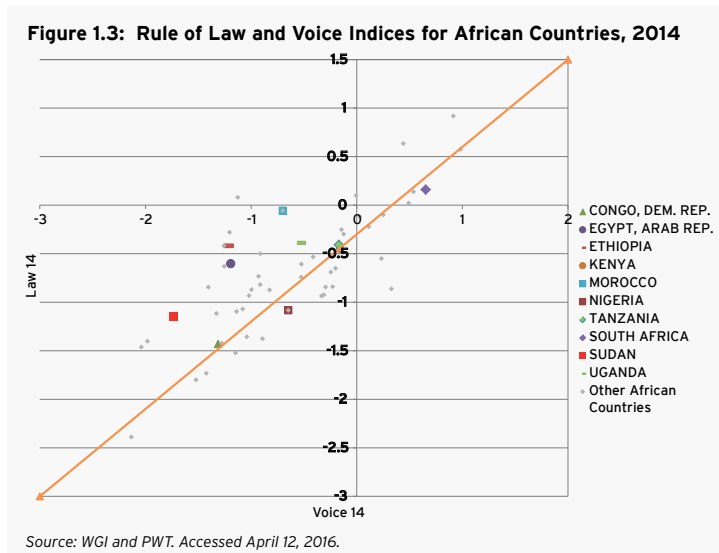
Meles Zenawi, the Ethiopian leader from 1995 until his death in 2012, and Rwanda's Paul Kagame to Ali Bongo in Gabon, are all advocates of a system that emphasizes economic advancement over democracy. Western powers need to pay attention to the growing admiration for the Chinese economic miracle in Africa.<sup>11</sup>

It is true that a number of Asian economies have experienced robust growth under authoritarianism: South Korea and Taiwan did so in the 1960s and 1970s, and China and Vietnam have followed more recently. All of these countries were able to establish reasonably functional economic institutions and sound policies while having closed political systems dominated by one party. For all of them, measures of economic institutions, such as indices of property rights and the rule of law, were *good for their income levels*. These low-income countries were good production locations. And yet organizations like Freedom House measured these countries as being tightly closed politically.

It is debatable, however, how relevant this model is for Africa, where measures of property rights and rule of law correlate

closely with measures of democracy and civil liberties. Figure 1.3, for example, shows two measures from the Worldwide Governance Indicators (WGI) in 2014: an index of property rights and rule of law and an index of voice and accountability. Each index has a mean of zero and a standard deviation of 1.0 across all countries in the world. The figure includes all African countries, with the more-populous ones identified. Most countries lie along a 45-degree line, indicating that the measure of property rights and rule of law correlates with the measure of voice and accountability. Ethiopia is something of an exception, with a value on the Rule of Law Index of  $-0.42$  and a voice and accountability measure of  $-1.26$ . But there is no general trend in Africa toward authoritarian countries having good economic institutions.

There is also ample reason to worry that the combination of authoritarian politics and reasonably good economic institutions runs out of steam once a country reaches the middle-income level. South Korea and Taiwan both transitioned to well-functioning democracies when their economies corresponded to 25% of U.S. per-capita GDP, and they continued



to grow well and reach high income. China now is facing a set of challenges—including environmental degradation and high levels of corruption—that may be difficult to address without more popular participation in decision-making. Still, the early success of China and other Asian authoritarian regimes naturally stirs some debate within Africa about China’s model and its relevance for the continent.

Popular and elite opinion in Africa about engagement with China has largely been positive, but the Western reaction has often been highly negative. During a 2011 trip to Zambia, Tanzania, and Ethiopia, then secretary of state Hillary Clinton warned Africans about a “new colonialism” as China expanded its resource-extraction activities on the continent. Clinton warned against partners who only deal with elites. “We saw that during colonial times it is easy to come in, take out natural resources, pay off leaders and leave,” she said. In contrast, Clinton pointed to U.S. efforts to improve political and economic governance in countries like Zambia as an example of a different approach: “The United States is investing in the people of Zambia, not just the elites, and we are investing for the long run.”<sup>12</sup>

Much of the commentary from U.S. political elites and the Western media’s coverage of China’s presence in Africa focuses on the big state-to-state resource deals. These are certainly part of the landscape, as will be discussed in Chapter 3. However, Chinese involvement in the continent extends far beyond those deals, and recent scholarly research in the West has emphasized this complexity. In a 2015 article in *Foreign Policy*, Deborah Brautigam debunks what she argues are the five myths that persist in the West regarding Chinese involvement in Africa:

1. China is in Africa only to extract natural resources;
2. the scale of China’s investment is enormous;
3. Chinese companies only employ Chinese workers;
4. China’s aid is a vehicle for securing oil and mining rights; and

5. China has its eyes on African land and perhaps even a plan to send Chinese peasants to Africa to grow food and ship it back to China.<sup>13</sup>

Within China, minimal controversy exists over the country's involvement in Africa. The official line is that cooperation is win-win. Trade and direct investment are based on comparative advantage and, therefore, are mutually beneficial. China provides some concessional loans to lower-income countries in Africa, but it resists calling this "foreign aid." On Xi Jinping's most recent trip to Africa, in December 2015, he emphasized the South-South aspect of the relationship: "China and Africa share a common future. We Chinese and Africans have forged a profound friendship through our common historical experience and our common struggles," Xi said. He also sought to highlight a difference between China and Western partners, stating, "China supports the resolution of African issues by Africans in the African way."<sup>14</sup> In other words, according to Xi, China does not interfere internally in other countries, just as it does not welcome anyone interfering internally in China. The main purpose of the December 2015 trip was to participate in the latest China-Africa Summit, which has been held once every three years since 2000.

Beyond the official line, Chinese coverage of the China-Africa relationship is filled with Western research, emphasizing in particular any results that depict the relationship in a positive light. For instance, a lengthy article in Chinese on the website of the *People's Daily* from September 2015 draws on research from the Brookings Institution (in fact, a background paper for this study), the College of William and Mary, and the Pew Research Center to highlight "five facts about Chinese investment in Africa": (1) China's overseas investments are profit-driven; (2) China's investment in Africa only accounts for 3% of the total investment stock; (3) China's investments in Africa are not only in natural resources but are also rapidly increasing in the service and manufacturing industries; (4) Chinese investors are attaching more importance to social bene-

fits; and (5) more than 70% of Africans surveyed expressed a favorable view of China.<sup>15</sup>

In summary, there is an active debate within Africa, the West, and China about what exactly China's economic engagement in Africa is, the extent to which African economies are benefiting, prospects for the future, and ways to make this relationship more productive. However, a lack of good data and information hampers serious research. One of the most basic recommendations coming out of this study is that African countries and China should cooperate to publish better data on trade, investment, and labor flows. An informed public debate depends on robust data and research. Nevertheless, there already exists enough data to make some preliminary assessments. Subsequent chapters will examine China-Africa trade, investment, infrastructure cooperation, and labor issues. The concluding chapter provides some tentative recommendations for African countries, China, and the West.

## CHAPTER 2

# INTERNATIONAL TRADE BETWEEN AFRICA AND CHINA

Africa and China have been natural trading partners for the past twenty years. China is a resource-poor country relative to its population: despite being home to one out of every five people on Earth, China possesses a fairly small share of global resources such as arable land, renewable water, petroleum, and metals. Naturally, there are some exceptions; China, for example, is relatively well endowed with rare earths. But as a generalization, China can be considered resource-poor. By contrast, the African continent is resource-rich compared to its population. In particular, it boasts ample energy and mineral reserves. This difference in endowments creates the potential for mutually beneficial trade.

The disparity in natural endowments between China and Africa has been exacerbated by China's growth model, which has proven to be extremely resource-intensive in recent years. The first section of this chapter briefly reviews key features of China's growth model, demonstrating why the country's growth has been so resource-intensive, especially in the period since 2000. Understanding the growth model is important because there is good reason to believe that it is not sustainable. Not only did China's growth rate slow significantly in 2014 and 2015, but there has also been a shift in the composition of GDP away from investment and toward consumption. This is likely to constitute a permanent shift, not a temporary cycle, and thus will have long-term effects on commodity prices and commodity trade volumes.

The second section of the chapter examines the pattern and volume of trade between China and Africa. During China's period of high investment and intensive resource use, trade with Africa soared. The pattern was predictable: Africa exported energy and metals in return for manufactured goods. Following the shift in China's growth model over the past two years, however, the value of trade has declined sharply.

It makes sense for resource-rich African economies to export natural resources in the short run. In the longer run, however, these economies would like to develop higher-value-added activities in manufacturing and services. In recent decades, the phenomenon of global value chains (GVCs) has led to the deconstruction of the production process for many goods, with different components being produced in different countries and extensive trade occurring in these intermediate goods. The development of GVCs has made it easier for developing economies to become involved in the production and trade of manufactures. It is no longer necessary for a country to be proficient in the production of a complete, sophisticated product to contribute to its manufacture. It can start with simpler, more labor-intensive activities and gradually move up the value-added chain. China is probably the best recent example of a developing economy benefiting from GVCs. African economies, on the other hand, up to now have had only modest involvement in GVCs (an issue explored in Section 3 of this chapter). One reason for this has been the resource boom: high income from energy and metals implicitly works against other tradable sectors such as manufacturing. With the resource boom likely finished, it is both more important and more feasible for African economies to deepen their involvement in GVCs.

## 2.1: CHINA'S EVOLVING GROWTH MODEL

Starting in around 1978, China shifted away from a planned economy model with a reform program known as *gaige kai-fang* ("change the system, open the door"). It gradually opened

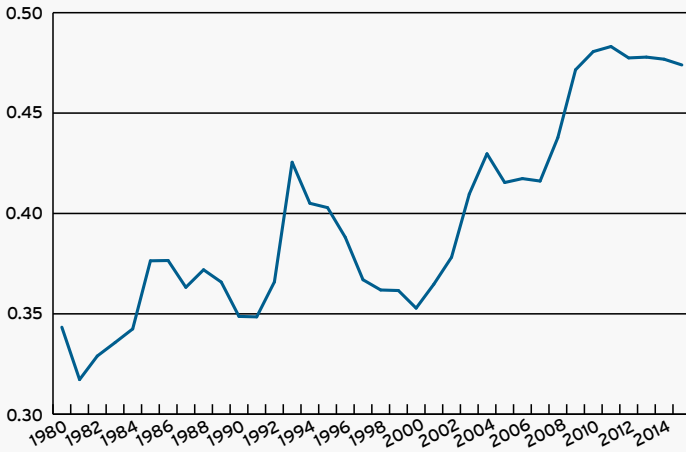
up important sectors of the economy, including most manufacturing, to international trade and foreign direct investment (FDI). It also opened up space for a domestic private sector to grow up alongside foreign-invested firms. China privatized some state enterprises while holding on to many important ones, especially in modern services such as finance, telecommunications, media, and transportation. Foreign firms helped China connect to global markets and were responsible for much of its exports. Recent research, however, has shown that a majority of the *value added* in China's exports comes from the domestic private sector, not from foreign firms or state enterprises.<sup>16</sup> This building of domestic value chains, based on the local private sector, has been one of the foundations of China's success.

After launching reform, China's growth model in some ways mirrored the earlier experiences of Japan, South Korea, and Taiwan. Manufacturing exports expanded rapidly and served as an engine of growth for the economy. All of these economies were able to grow at about 10% per year with investment rates that hovered at around 35% of GDP. But, starting around 2000, China's model began to deviate from its predecessors. Figure 2.1 shows the investment rate for China's economy for the period 1980-2015. From 1980 to 2000 China's investment rate was generally around 35% of GDP, except for a brief spike in 1993-1994. This was similar to the earlier experiences of Japan, Taiwan, and South Korea during their rapid growth periods.<sup>17</sup> However, after 2000 China's investment rate started to climb, first to 40% of GDP, then to nearly 50% in 2010-2011.

A number of factors explain China's investment-heavy growth model. Exports increased steadily after China joined the World Trade Organization (WTO) in 2000, so investment in manufacturing plants and equipment grew at a healthy rate. Premier Zhu Rongji privatized the housing stock in the late 1990s, which set off a real estate construction boom. There also existed significant pent-up demand for infrastructure of different types, and China increasingly had the resources to



**Figure 2.1: China's Investment Share in GDP, 1980-2015**

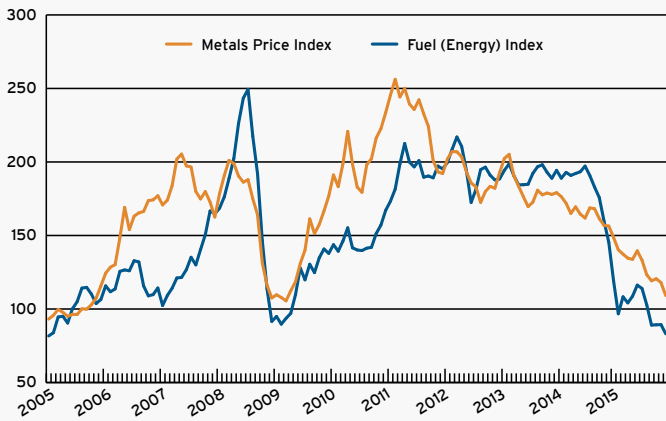


Source: NBS Data. Accessed June 28, 2016.

address this demand. When the global financial crisis hit in 2008, it was a large shock for China, as the country's exports fell by about one-third within a few months and, according to government estimates, 20 million people were thrown out of work.<sup>18</sup> The crisis undermined demand for manufacturing investment and real estate construction. But the Chinese government responded quickly with an immense stimulus package aimed almost exclusively at investment. The core of the stimulus was investment in infrastructure like highways, railways, urban transport, and power and water supplies. On top of this fiscal stimulus, looser monetary conditions also enabled the housing boom to resume, and all of this had a strong enough pull on manufacturing that investment in that key sector recovered as well. As a result, the overall investment rate did not fall after the global crisis, but instead continued to rise.

This investment-heavy model generated huge demand for energy and other natural resources. The construction part of investment requires large amounts of iron, copper, and other metals. The other main part of investment centers on machinery and equipment, which are also relatively energy- and metals-intensive to produce. Not only was the investment rate

**Figure 2.2: Major Commodity Price Indices, 2005-2015**



Source: IMF, Commodity Price Indices (2005 average=100). Accessed January 27, 2016.

high and rising, but China's economy was also growing extremely rapidly, at around 10% per year, partly as a result of this investment. The combination of 10% GDP growth and a rising investment share resulted in real investment rising by around 13% per year. To sustain this rate of investment, China had to import larger and larger quantities of petroleum, iron, copper, zinc, and other metals. In the case of copper, for example, the growth rate of the *volume* of China's imports averaged 13% between 2006 and 2014.<sup>19</sup> The *value* of imports increased even faster, as China's demand put upward pressure on prices. Metals prices rose 150% between 2005 and 2011 (Figure 2.2). China makes up a smaller part of the global energy trade than of the global metals trade, so the increase in fuel prices, at 100%, was not quite as extreme.

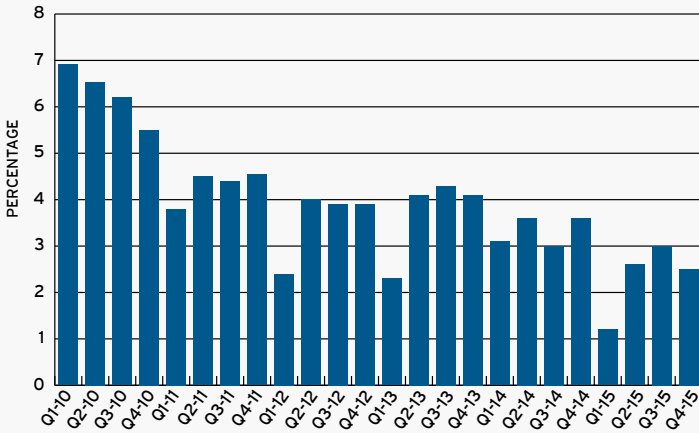
All of this changed following the slowdown in China's investment after 2011. The problem with investing at such a high rate is that excess capacity inevitably develops, pushing down the return on further investment. Excess capacity has become visible throughout the economy. After a long real estate boom, in which many people bought extra apartments as investments, an estimated one-fifth of apartments now sit empty. The problem

is particularly acute in third- and fourth-tier cities. Although the infrastructure boom after the global financial crisis stimulated the economy, it also led to a build-up of local government debt. The government continues to invest in carefully chosen infrastructure projects but is trying to prevent further increases in government debt relative to GDP. The slowdowns in real estate and infrastructure construction, in turn, have led to below-capacity manufacturing outputs. The shortfalls are especially severe in sectors such as steel and cement.

It is natural for the growth of investment to slow down in this environment. Figure 2.3 shows the contribution of investment to China's GDP growth in each quarter since the first quarter of 2010. In 2010 the contribution averaged 6.3 percentage points. Since investment represents about one half of GDP, this implies that investment was growing at around 12.6% per year.<sup>20</sup> Since then, the growth of investment has slowed down continuously. In 2015 investment contributed an average of 2.3 percentage points of growth, implying a growth rate of 4.6%. China's leaders have advocated a growth model that is less dependent on investment and more reliant on innovation and productivity growth. They are also encouraging the growth of consumption, which, for a long time, grew less rapidly than GDP but now outpaces GDP growth and, on the demand side, has become an engine of China's new growth model. Figure 2.4 shows the contribution of consumption to GDP growth. This is the combination of household consumption and government consumption, which together make up about half of the economy. There is cyclical growth with consumption growth, which is particularly strong in the first quarter of each year, during China's main holiday season (i.e., the Spring Festival). But over the 2010-2015 period the contribution of consumption to GDP remained more or less even, trending neither upwards nor downwards. In 2010 consumption contributed 4.6 percentage points to GDP growth. In 2015 this figure was 4.3 percentage points.

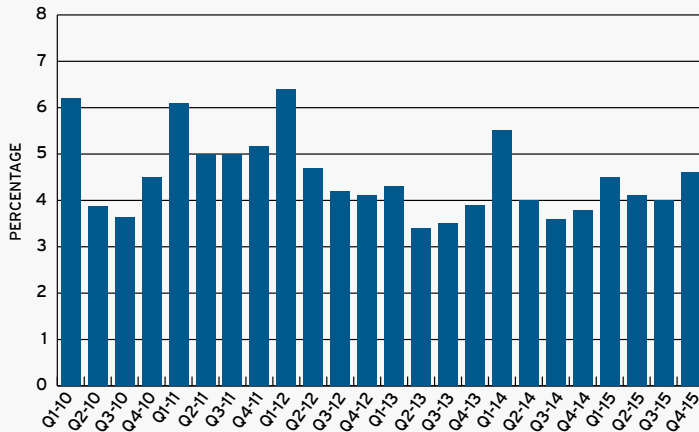
China's leaders have also accepted that the country's GDP growth rate will slow now that China is a middle-income

**Figure 2.3: Contribution of Investment to China's GDP Growth**



Source: NBS China. Accessed January 27, 2016.

**Figure 2.4: Contribution of Consumption to China's GDP Growth**



Source: IMF, *Regional Economic Outlook*, Chapter 3, April 2015.

economy. They aim for growth of around 6.5%, which may be ambitious given the difficulty of implementing the reforms that underpin the new growth model. But assume, for the sake of argument, that they can achieve growth of around 6%. If the investment rate gradually declines over the next decade from

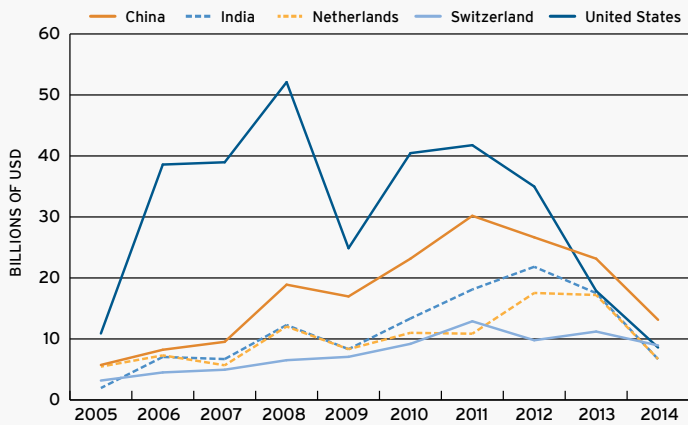
50% of GDP to 40% of GDP—which will still be very high by international standards—then investment over that period will be growing at 4% per year or less (not far from what was realized in 2015).

Note that investment is not declining; it is still growing. But the downshift from 13% growth to 4% has been sharp. The effect on demand for metals and energy will be similarly severe. After years of 13% growth in China's imports of copper (in volume terms), Goldman Sachs projects that copper imports will grow at 3% per year for the next five years.<sup>21</sup> It is notoriously difficult to project commodity prices or trade volumes, so the point here is not the specific estimate, but rather the fact that it is reasonable to expect much slower growth in demand from China. If demand from China continues to grow, albeit at a lower rate, one might wonder why prices would decline and not simply stabilize. The answer is that the long period of high prices has brought forth new supply. Commodities are prone to these kinds of price cycles because the gestation period for investments is often long. Referring back to Figure 2.2, the price index for metals averaged around 200 from 2007 until 2013, with only a short respite during the global financial crisis. Investors know that risks and uncertainties exist, but prices at those levels induce many new projects that take years to complete, so high prices tend to be sustained for a time. It so happens that a lot of new supply is coming online, including in Africa, just as China's appetite has been diminished by the shift in its growth model.

## 2.2: THE AFRICA-CHINA PATTERN OF TRADE

During the period in which Chinese imports of energy and metals were growing, China supplanted the United States as Africa's most important trading partner. In 2005 the United States was the largest market for African exports (Figure 2.5). While the United States welcomed a wide range of manufactured imports from Africa without tariffs through the African Growth and Opportunity Act, in practice most of the exports

**Figure 2.5: Sub-Saharan Africa's Exports to Its Top 5 Partners**

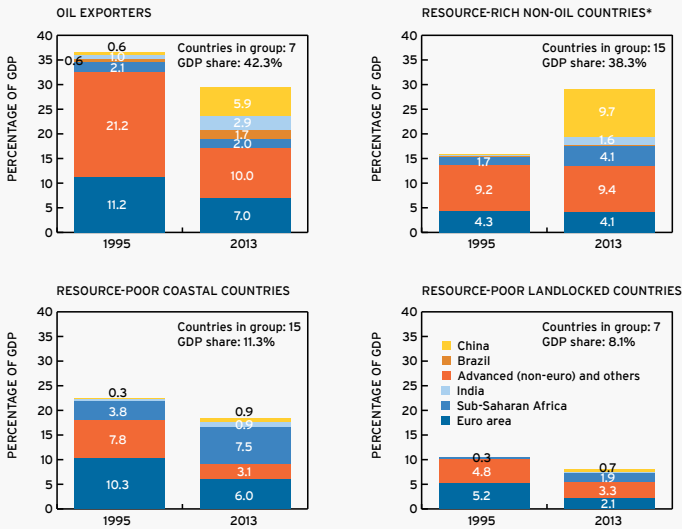


Source: WITS. Accessed January 27, 2016. Data sorted on 2014 exports numbers.

from Africa to the United States consisted of petroleum. Because of the price boom after 2005, overall exports from Africa grew quickly over the next few years. Exports to the United States increased about five-fold, peaking in 2008 before the global financial crisis led to a sharp drop. Exports recovered somewhat until 2011, when the fracking revolution in the United States triggered another decline. Africa's exports to China also grew five-fold between 2005 and 2011. Although the value of exports has fallen by half since then, China remains Africa's biggest export market. Other major markets for African exports include India and European countries such as the Netherlands and Switzerland.

Trade with China has been particularly important for countries that are abundant in resources other than energy. Figure 2.6 divides the countries of Sub-Saharan Africa into four groups: energy exporters (7 countries), other resource-abundant exporters (15 countries), resource-poor coastal countries (15 countries), and resource-poor landlocked countries (7 countries). This division emphasizes the geographical heterogeneity of Africa. While the continent as a whole is resource-abundant, that is not true for every country.

**Figure 2.6: Sub-Saharan Africa: Exports of Goods, Shares by Partner, 1995-2013**



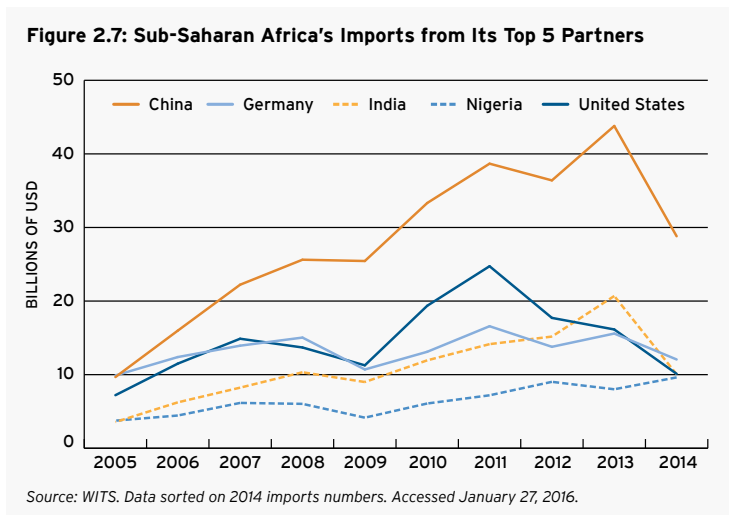
\*Resource-rich countries are defined as those for which nonrenewable resource exports are 25 percent or more of goods exports on average from 2009 to 2012.  
 Note: Excludes South Sudan due to lack of available data.  
 Source: IMF, *Regional Economic Outlook*, Chapter 3, April 2015.

The resource-abundant non-oil countries basically doubled exports as a share of GDP between 1995 and 2013, and almost all of this increase was attributable to China. This reflects China’s growing demand for copper, iron, zinc, gold, and other minerals. The oil exporters were already exporting 35% of GDP in 1995, when their main markets were the advanced economies of Europe and the United States. This group did not increase its exports relative to GDP in the period up to 2013, but there was a shift in the destination of those exports, with the market share of the advanced economies declining and that of China rising significantly. It would be accurate to think of China as having replaced the demand lost to African petroleum exporters as the U.S. fracking revolution took off.

Africa’s resource-poor countries are simply not that involved in international trade; their integration did not increase between 1995 and 2013. The coastal countries in this group

exported about 20% of GDP throughout the duration of this period. This is a low figure given that many of these are small economies, which tend to export (and import) larger shares of their GDP. Among Africa’s resource-poor countries, land-locked ones have an obvious disadvantage when it comes to trade, so their export volumes are even lower, representing only about 10% of GDP. Note that although there are 22 resource-poor countries represented in Figure 2.6, in total they account for less than one-fifth of African GDP. In general, they are small and poor.

In terms of Africa’s imports, Germany was the largest source in 2005, with China just slightly behind, and the United States ranking third (Figure 2.7). By 2013 China had become by far the largest source of imports to the continent. China’s exports—which consist primarily of manufactured products like textiles, electronics, and machinery—totaled nearly US\$45 billion, or about three times the levels of either Germany or the United States. India was the second-largest exporter to Africa, with flows totaling more than US\$20 billion. Exports from all of these economies fell somewhat in 2014 as trade and growth slowed.





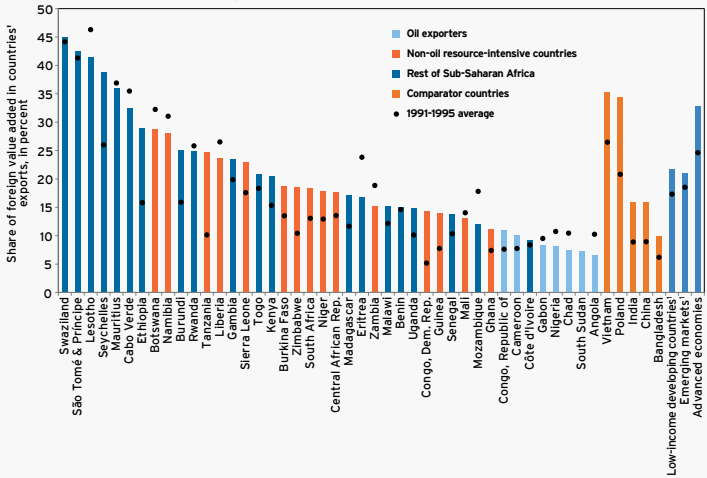
### 2.3: AFRICAN INVOLVEMENT IN GLOBAL VALUE CHAINS

From an economic standpoint, one of the most interesting developments in recent decades has been the growth in trade of intermediate products. In fact, most world trade today is in intermediates. The cliché of a “world car” with parts produced in many countries and final assembly occurring close to markets in the United States, Japan, China, and Europe is in fact a reality. This deconstruction of the production process has been a boon to developing countries. Several decades ago, developing countries in the aggregate exported primary products and imported manufactures. Today the developing world as a whole primarily exports manufactures. Value chains enable countries to find a niche along the chain without having to efficiently produce a whole finished product.

African economies up until today have had relatively minor involvement in GVCs. One useful measure of position in the value chain is the share of imported value added to a country's exports (Figure 2.8). In the 2008-2012 period, one-third of the exports from advanced economies were attributed to imported inputs, up from one-quarter in the 1991-1995 period. This reflects the deep integration of these economies with each other and with the global economy. For low-income countries and emerging markets, the associated figure for the 2008-2012 period averaged 21-22%, up from 17-18% in the earlier period. Among developing economies, Vietnam and Poland are standouts, with more than one-third of their export values accounted for by imported inputs.

Figure 2.8 ranks Sub-Saharan economies in order of the value their exports derive from imports or, in other words, how high they are on the value chain. Note that oil exporters such as Angola, South Sudan, Chad, and Nigeria all fall on the far right of the chart, with almost no imported value added to their exports. To some extent these economies are subject to “Dutch disease,” whereby resource exporters tend to have high wages and appreciated exchange rates that make it difficult for them

**Figure 2.8: Sub-Saharan Africa and Comparator Countries: Depth of Integration in Global Value Chains, Average 2008-2012**



<sup>1</sup>Excluding Sub-Saharan African countries

Source: IMF, *Regional Economic Outlook*, Chapter 3, April 2015.

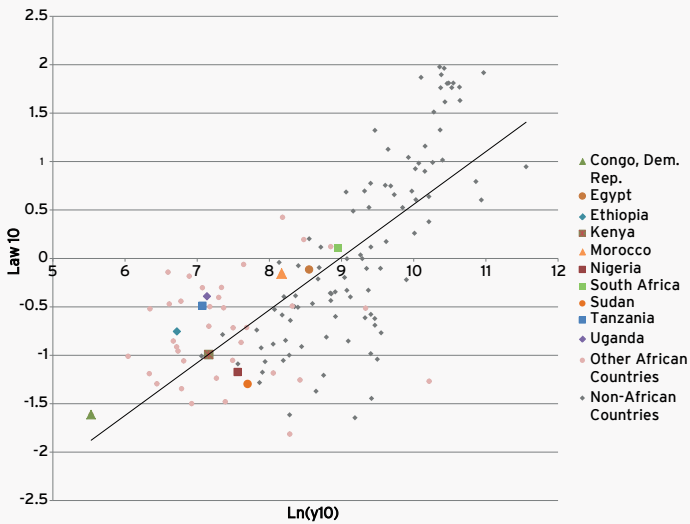
to diversify their exports. But this is only a partial explanation. These are all relatively poor countries, and their oil production is not sufficient to make their citizens wealthy. In theory they could use their earnings from oil to build infrastructure, schools, and health facilities as a foundation for a better life and a more diversified economy.

About two-thirds of Sub-Saharan African economies fall below the average value-chain position for developing countries. On the left of the figure are a number of countries with deeper GVC integration, but they tend to be resource-poor economies with small populations (Swaziland, Sao Tome and Principe, Seychelles, Lesotho, Cape Verde, and Mauritius). One tends to think of GVCs in terms of manufactures such as the world car, but service sectors have value chains as well. Countries with advanced tourist industries that rely on significantly valuable imported inputs will also show up as having deep involvement in GVCs. Ethiopia is an interesting case of a populous yet resource-poor country with a high degree of GVC integration—integration that has grown significantly since 1995.

What accounts for Africa's low involvement in GVCs? One factor, as mentioned, is so-called Dutch disease. But many countries in Africa are not resource-rich and yet still have low involvement in GVCs. Likewise, even where Dutch disease is an explanation, it should not prevent the development of modern manufacturing and services sectors. A key issue in most African economies is deficiencies in infrastructure: lack of reliable power, poor roads and highways, and inefficient ports. (The issue of infrastructure will be examined in detail in Chapter 4.)

Another issue is economic governance. There is ample evidence showing that economic institutions, such as well-protected property rights and rule of law, have significant positive effects on development. As discussed in Chapter 1, the Worldwide Governance Indicators project publishes a Rule of Law Index that "captures perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence."<sup>22</sup> Figure 2.9 shows the Rule of Law Index values for 146 countries in 2010, plotted against per-capita GDP measured in purchasing power parity (PPP) (log scale). By design, this index has a mean of zero and a standard deviation across countries of 1.0. All African countries are displayed, with ten populous African countries identified by name. All but six African countries are below average for the world. This result should not be too surprising because there is a clear relationship between per-capita GDP and the quality of economic institutions. African countries are relatively poor and, on average, have weak institutions. But it is also evident that there is a lot of dispersion across African countries. The regression line in the figure shows the typical relationship between per-capita income and rule of law. Countries above the line have unexpectedly good institutions for their level of development; countries below the line have unexpectedly poor institutions. This is important because countries generally compete with other countries at similar levels of development. If one country has good institutions among its cohort,

**Figure 2.9: Institutional Quality Relative to Development Level**



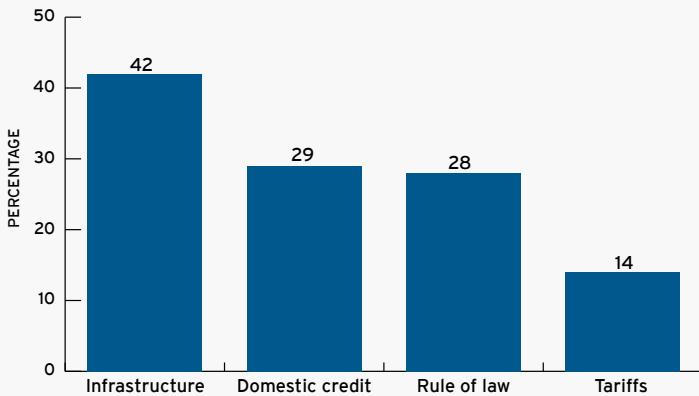
Source: WGI and PWT. Accessed January 29, 2016.

it can expect to attract more investment and entrepreneurship and grow faster. In fact, in growth empirics, having robust rule of law for one's level of development is closely correlated with faster growth. Among the large countries in Africa, Ethiopia, Tanzania, and Uganda are well above the regression line, Kenya sits right on the line, and Sudan and Nigeria fall well below the line. Note that these six economies have similar per-capita GDPs. (The oil exporters Nigeria and Sudan have slightly higher per-capita GDPs, but the difference is modest.) They are at similar levels of development, but Ethiopia, Tanzania, and Uganda (especially the latter two) have better economic institutions.

The International Monetary Fund's (IMF) *Africa Economic Outlook* for 2015 includes an estimate of the effect on African exports of improvements in the investment climate. The thought experiment the authors conduct is to adjust different indicators from the average for Sub-Saharan Africa to the average for the rest of the world. The investment climate indicators they consider are an index of infrastructure, credit to the

private sector (a measure of financial sector depth and efficiency), an index measuring the strength of rule of law, and the level of import tariffs (indicating how open or closed an economy is to world trade). The biggest potential gain—a 42% increase in exports—derives from improving infrastructure (Figure 2.10). Based on the IMF’s analysis, increasing credit to the private sector and improving rule of law are also important factors, accounting for increases in exports of 29% and 28%, respectively. African economies already have relatively low trade barriers, so reducing import tariffs to the average for the rest of the world would only increase exports by 14%. The specific estimates in this kind of empirical exercise should be taken with caution. But the general point is valid: Africa could expand its involvement in global trade, including GVCs, through improvements in its investment climate, including infrastructure development, stronger financial sectors, and improved property rights and rule of law.

**Figure 2.10: Sub-Saharan Africa: Potential Increase in Trade**



*Note: This chart shows the percentage increase in Sub-Saharan Africa's trade that would result from adjusting each variable from the average for Sub-Saharan Africa to the average for the rest of the world.*

*Source: IMF, Regional Economic Outlook, Chapter 3, April 2015.*

## CHAPTER 3

# CHINA'S DIRECT INVESTMENT IN AFRICA

Among developing countries, China for a long time has been the foremost recipient of FDI, which played an important catalytic role in growing its economy, especially in the early years of its reform and development. More recently, China has emerged as a large overseas investor. There are both macroeconomic and microeconomic factors influencing China's "going out." China is currently the second-largest net creditor after Japan, but it will almost certainly take over the top spot within a decade. As a major net creditor, China is investing everywhere, including in Africa. Section 1 of this chapter examines the macroeconomic factors that are leading to China's likely emergence as the world's largest net creditor.

Among the microeconomic factors influencing this change, Chinese firms in many industries have started to expand globally. This began with firms in sectors like mining and petroleum, which are heavily dependent on natural resources. Given China's relative natural resource scarcity, firms in these sectors were inclined to expand globally in order to find new supplies, including in Africa. Section 2 examines the allocation of Chinese direct investment across African countries. Not surprisingly, the natural resource-abundant countries in Africa have been especially attractive to Chinese investors. In this way, Chinese investment in African countries has mirrored Western investment in the continent. However, Chinese investors appear to prioritize natural resources even more strongly than Western investors. Where Western investors

place a premium on rule of law, Chinese investment is, empirically speaking, allocated about equally between weak rule of law and strong rule of law countries. This raises one of the important questions about China's investment in Africa: how are its natural resource investments in poor-governance environments faring?

While Section 2 focuses on the overall levels of Chinese direct investment in different African countries, Section 3 draws on a database from MOFCOM to examine the Chinese private sector's activities in Africa. Chinese enterprises making direct investments abroad have to register with MOFCOM, and the resulting database provides the investing company's location in China and its line of business. It also includes the country to which the investment is flowing, and a description (in Chinese) of the investment project. However, the database does *not* include the amount of each investment. Between 1998 and 2012, about 2,000 Chinese firms invested in 49 African countries. Firms often undertake multiple projects, so there are about 4,000 investments listed in the database. The typical entry relates to a private firm that is much smaller than the big state-owned enterprises involved in the mega-deals that have captured so much attention. These data provide insight into what the Chinese private sector is doing in Africa, and it is evident that they are not primarily investing in natural resources. Most investments are in services, with a significant number in manufacturing as well. Also, the investments are spread all over the continent, including in resource-poor countries. As China's appetite for natural resources declines, it is likely that these investments in services and manufacturing will become increasingly important.

### 3.1: CHINA'S EMERGENCE AS THE WORLD'S LARGEST NET CREDITOR

As emphasized in Chapter 2, China's economic growth has been heavily reliant on investment. But another striking fact about China is that its savings rate has generally exceeded its

investment rate. Across East Asia in general, household savings are high by global standards, but most of China's savings in fact does not derive from households. Rather, it comes from enterprises and the government. Corporate savings is high in state enterprises, which do not pay significant dividends to anyone. Private firms tend to have high savings rates as well, probably because the private sector still has relatively poor access to the formal financial system. Many private firms are self-financed from profits. These institutional features contribute to a national savings rate of around 50% of GDP.<sup>23</sup>

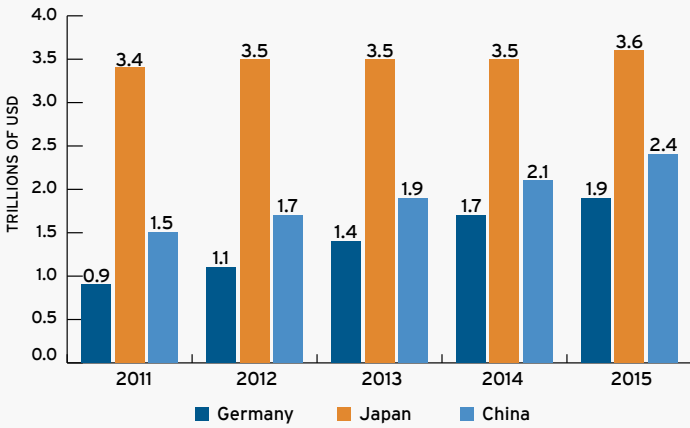
The difference between a country's savings rate and its investment rate is the current account balance relative to GDP. A country with a current account surplus, such as China in most years, has an excess of savings over investment and lends that surplus to the rest of the world. Another way to think of the current account is that it is the broadest measure of the trade balance: exports of all goods and services minus imports of all goods and services. A country with a positive balance is accumulating foreign assets.

Lane and Milesi-Ferretti (2007) calculated the net foreign asset positions of a large number of countries and have updated the estimates on their online database through 2011. In 2011 Japan stood as the largest net creditor, with US\$3.4 trillion in net foreign assets. China was a distant second, with US\$1.5 trillion in net foreign assets, and Germany ranked third based on assets of US\$900 billion (Figure 3.1). The net foreign asset positions can be updated to end-2015 by adding in the current account balances for each country from 2012 to 2015. Strictly speaking, one should account for changes in the valuations of existing assets, which is difficult to do, but cumulating current account balances provides a ballpark estimate.

Japan's cumulative current account surplus over the four years from 2012 to 2015 was a modest US\$200 billion, bringing Japan's net foreign assets at end-2015 to US\$3.6 trillion. China's cumulative current account surplus over the period was



**Figure 3.1: Net Foreign Asset Positions**



Note: Current account balances for China and Germany in 2015 are based on forecasts from the Organisation for Economic Co-operation and Development (OECD).  
Source: OECD Data. Accessed January 29, 2016.

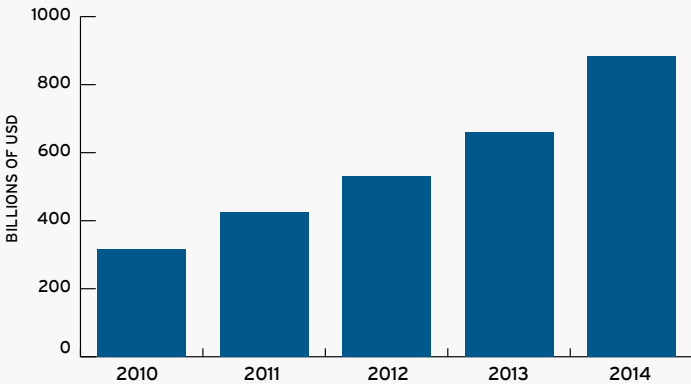
nearly US\$1 trillion, so China's net foreign asset position reached US\$2.4 trillion at end-2015, rapidly approaching Japan's. Germany also had cumulative current account surpluses on the order of US\$1 trillion. While there is uncertainty about where these current account balances will trend over the next decade, the most likely case is that China will emerge as the largest net creditor. Japan's current account surpluses have been much smaller than China's in recent years, reflecting the rapid aging of Japan's population, which has also contributed to a lower national savings rate. Germany has a much smaller economy than China's and also an aging population. As a smaller economy, its current account balance measured in dollars is a much larger share of GDP than China's balance. As simple arithmetic shows, if China, Germany, and Japan each maintain their recent current account balances *relative to GDP*, then China will emerge as the largest net creditor within a decade because its economy, even with the recent slowdown, will almost certainly grow faster than Germany's and Japan's.

China is already the world's second-largest net creditor, but the composition of its external assets and liabilities is unusual.

For mature creditors such as Germany and Japan, most foreign assets are held by private companies and households. By contrast, China's most important foreign asset has been international reserves accumulated by the central bank, which mostly have been invested in U.S. Treasury bonds and similar instruments. In the last couple of years this pattern has started to change. China's reserves peaked at about US\$4 trillion at the end of 2014. In 2015 China still maintained a large current account surplus, but its reserves declined by about US\$800 billion.<sup>24</sup> Some of that was due to valuation changes; the reserves held in euros and yen declined in value when measured in dollars, given the recent appreciation of the dollar. But sales of reserves played a significant role as well. The Institute for International Finance estimates that the net private capital outflow from China in 2015 was US\$676 billion.<sup>25</sup> (That estimate includes outward investments by China's state enterprises, which, strictly speaking, are not "private"; the point is to distinguish between official foreign asset holdings at the central bank and more-commercial transactions.)

Commercial outflows include direct investment, such as greenfield investments and mergers and acquisitions. MOFCOM is the best source of information about the composition of China's overseas direct investment. Chinese officials refer to overseas direct investment as "ODI"—outward direct investment—to distinguish it from inward direct investment. This report will follow that convention. MOFCOM reports the annual volume of ODI and the cumulative stock of China's outward investments. In recent years, MOFCOM has reported ODI flows slightly above US\$100 billion per year, accelerating to above US\$200 billion in 2014. The cumulative stock roughly tripled between 2010 and end-2014, reaching nearly US\$900 billion (Figure 3.2).<sup>26</sup> Frankly, the numbers seem low given the macroeconomic estimates of capital outflow from China. One feature of China's balance of payments in 2015 was that errors and omissions accounted for a whopping US\$188.2 billion.<sup>27</sup> Some of this almost certainly consists of ODI flying under the radar. According to MOFCOM, which reports the allocation

**Figure 3.2: China's Cumulative Stock of ODI**



Source: MOFCOM. Accessed January 28, 2016.

of ODI to major recipient countries, about half of China's ODI flows to Hong Kong. But this is almost certainly not the ultimate destination for most of these investments.

An obvious, implicit recommendation of this report is that China should improve its statistics on outward investment. One of the important developments today is China's emergence as the world's largest creditor, with a significant portion of its investment going to direct investment. In general, recipient countries welcome direct investment, so it would be wise of China to improve data collection so as to more accurately reflect its role in global investment.

### 3.2: CHINESE ODI AND WESTERN FDI—SIMILARITIES AND DIFFERENCES

China's official statistics on ODI in Africa reveal several paradoxes. Simply put, China's investment in Africa is both big and small. It is small in the sense that China was a latecomer to Africa and accounts for only a modest share of the total stock of foreign investment on the continent. At end-2011, that total stock stood at US\$629 billion, of which China's share was 3.2%.<sup>28</sup> China's investment in Africa has been growing rapidly,

so its share will rise over time, albeit slowly given that it is starting from such a low base. While that figure will surprise many people, it is confirmed by other sources. The United Nations Conference on Trade and Development's (UNCTAD's) *World Investment Report 2015* similarly finds that China's FDI to Africa in 2013 and 2014 constituted a meager 4.4% of the total flow.<sup>29</sup> The European Union countries, led by France and United Kingdom, are by far the largest investors in Africa, though U.S. investment is also significant. Even South Africa invests more on the continent than China does. As noted in the previous section, there are reasons to suspect that China's reported ODI may be underestimated. But even if the stock of Chinese investment in Africa were twice as large as reported, it would still be relatively small. The general impression has been that China is a much bigger investor in Africa than it really is.

Nevertheless, China's investment in Africa is big relative to its investments elsewhere. The world as a whole has six times as much direct investment in the United States as in Africa, reflecting the fact that most FDI goes to advanced economies. China's pattern of investment has been different. As of end-2014, China had about as much ODI in Africa (US\$32 billion) as in the United States (US\$38 billion). So, China's *relative* focus on Africa is large, even if it is still a small player when it comes to investment overall.

As for the allocation of China's investments among African countries, does it resemble or differ from the pattern observed among existing, mostly Western investors? To answer this question, Chen, Dollar, and Tang (2015) use data from MOFCOM on the stock of Chinese ODI in 49 African countries at end-2012.<sup>30</sup> For this study I have updated the Chinese ODI data to 2014. At the end of 2014 China reported a stock of US\$32 billion of ODI on the African continent. The amounts invested in the ten biggest recipients are listed in Table 3.1: South Africa, Algeria, Nigeria, Zambia, DR Congo, Sudan, Zimbabwe, Angola, Ghana, and Republic of Congo. For reference, the total stock of FDI in each country at the end of 2011 is also shown. In general, the Chinese investment is small relative to the total foreign investment.

**Table 3.1: Chinese Direct Investment and Global Direct Investment in Africa (in millions of USD)**

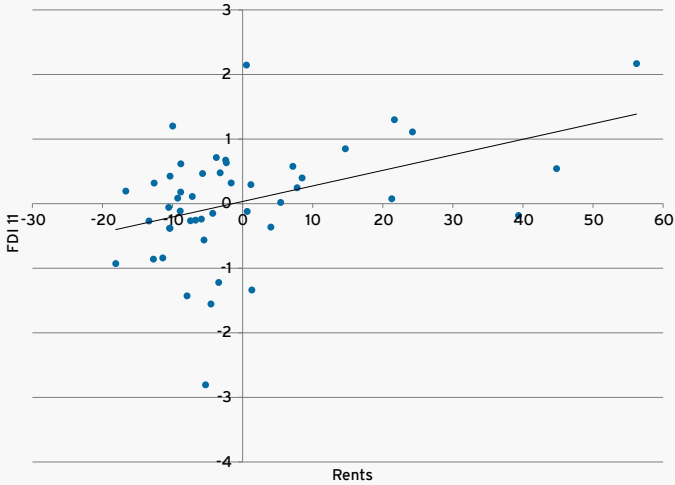
Country/Region	ODI 14	ODI 11	FDI 11
<b>Africa</b>	32,350.07	16,244.32	628,574.00
<b>South Africa</b>	5,954.02	4,059.73	134,391.56
<b>Algeria</b>	2,451.57	1,059.45	22,281.82
<b>Nigeria</b>	2,323.01	1,415.61	76,113.10
<b>Zambia</b>	2,271.99	1,199.84	10,927.00
<b>Congo, Dem. Rep.</b>	2,168.67	709.26	5,589.95
<b>Sudan</b>	1,747.12	1,525.64	45,845.23
<b>Zimbabwe</b>	1,695.58	576.44	2,201.45
<b>Angola</b>	1,214.04	400.59	12,147.80
<b>Ghana</b>	1,056.69	270.15	14,510.95
<b>Congo, Rep.</b>	988.76	142.40	19,726.24

Source: MOFCOM, *Statistical Bulletin of China's Outward Foreign Direct Investment (2014)*; and the updated online database originally published by Lane and Milesi-Ferretti (2007). Accessed June 10, 2016.

To compare the pattern of Chinese investment with Western investment, Chen, Dollar, and Tang (2015) rely on the allocation of the overall stock of FDI across 49 African countries. Because, historically speaking, most FDI has come from advanced economies, it is reasonable to take the overall allocation of FDI as an indicator of Western investment. Those data are available through end-2011.<sup>31</sup> Globally, the allocation of FDI can be explained quite well by a parsimonious set of variables that measure (1) market size (GDP, PPP); (2) natural resource rents as a share of the economy; and (3) governance, especially property rights and the rule of law. The authors measure governance using the Rule of Law Index from the World Bank's WGI project, which was discussed in Chapter 2.

The authors find that the allocation of FDI across 49 African countries follows the global pattern. FDI is attracted to larger markets, with an elasticity of 0.74. Other factors being equal, resource-rich countries receive more FDI than resource-poor countries. Figure 3.3 shows the relationship between the (log of the) stock of FDI and natural resource rents as a percentage of GDP. (This is a partial scatter plot after controlling for the other variables.) The standard deviation across African countries of the resource-rents variable is 17.6, indicating that an increase

**Figure 3.3: Global FDI Is Attracted to Resource-abundant African Countries, 2011**

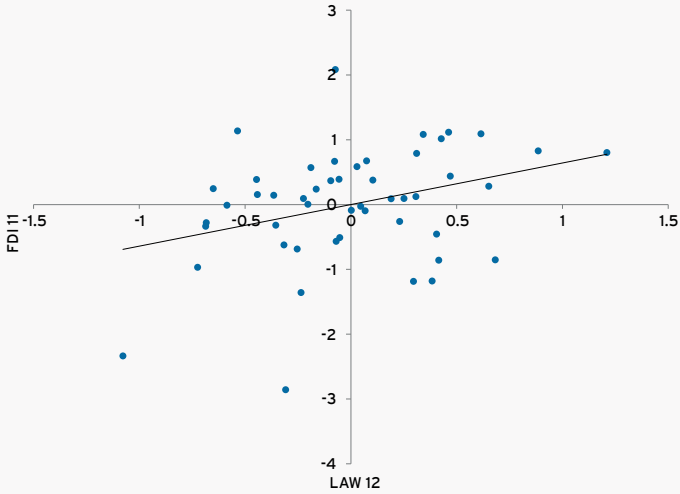


Source: Chen, Dollar, and Tang (2015).

of one standard deviation in resource wealth attracts 49% more FDI. Finally, FDI is higher in environments with robust property rights and rule of law. Across African countries, the standard deviation of the WGI's Rule of Law Index is 0.49: an improvement of one standard deviation as it relates to a country's rule of law environment results in 31% more investment. Figure 3.4, a partial scatter plot of the log of total FDI against WGI's Rule of Law Index, shows this strong relationship.

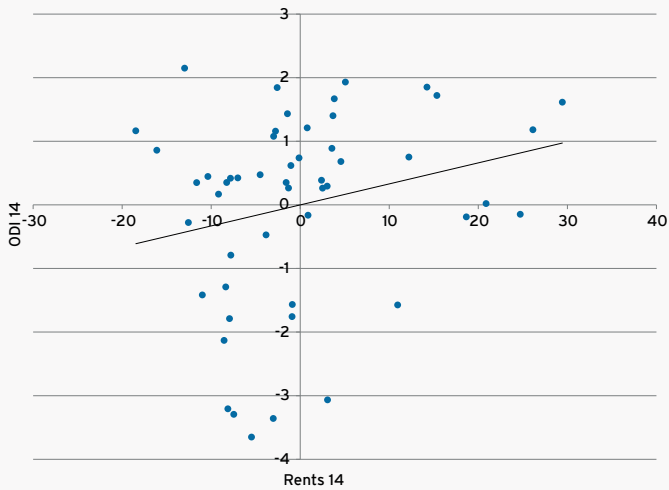
How does the allocation of Chinese ODI compare to the global stock of FDI based on the data for the stock of ODI in each African country at the end of 2014? Not surprisingly, Chinese ODI is positively correlated with market size. It also correlates closely with natural resource wealth, confirming the impression that much of Chinese investment on the continent is aimed at resource extraction. The relationship between ODI and natural resource rents is shown in Figure 3.5. The relationship of ODI to natural resource wealth is similar to that for Western FDI, though a bit stronger. The main point of

**Figure 3.4: Global FDI Is Attracted to African Countries with Better Rule of Law, 2011**



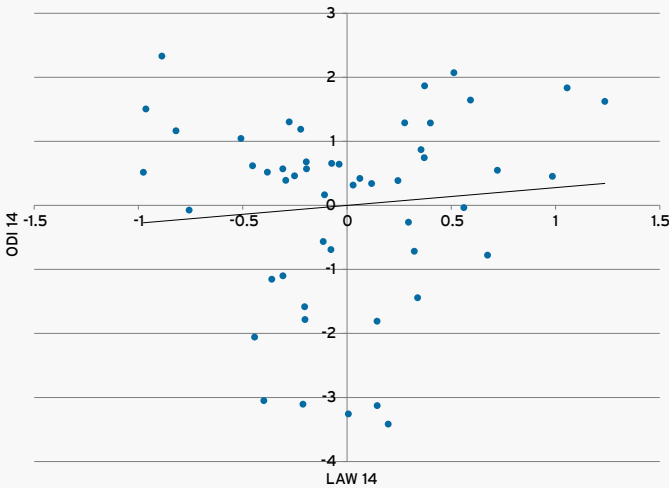
Source: Chen, Dollar, and Tang (2015).

**Figure 3.5: Chinese ODI Is Also Attracted to Resource-abundant African Countries, 2014**



Source: MOFCOM and WDI. Accessed May 23, 2016.

**Figure 3.6: Chinese ODI Is Uncorrelated with African Countries' Rule of Law, 2014**



Source: MOFCOM and WDI. Accessed May 23, 2016.

difference between ODI and FDI relates to governance. After controlling for market size and resource wealth, Chinese ODI is uncorrelated with values on the Rule of Law Index (Figure 3.6). Dollar (2015) finds that these relationships exist globally: total FDI is positively correlated with property rights and rule of law, whereas Chinese ODI is indifferent to rule of law conditions. The fact that this relationship is not particular to Africa reveals an important fact about Chinese ODI in general.

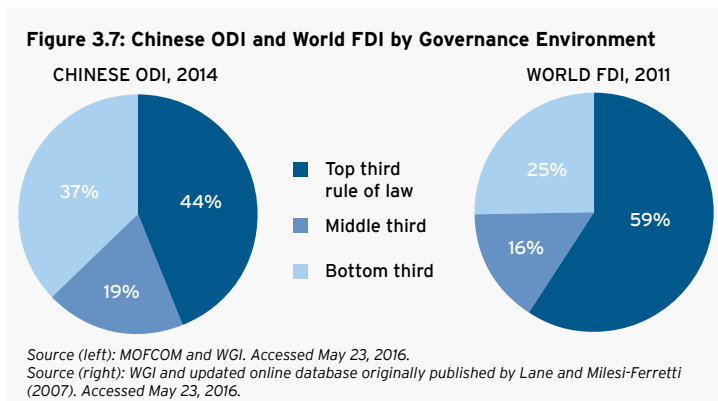
Some of the countries in Africa with poor governance indicators are designated as “fragile states” by the World Bank and the IMF. These are countries with weak institutions and high levels of poverty that have been singled out for special donor assistance.<sup>32</sup> It is useful to examine whether Chinese ODI is targeted to these fragile situations. But that turns out not to be the case. An indicator variable for fragile states has no explanatory power in examining the allocation of ODI across African countries. Some of the countries that have received much Chinese ODI are fragile states, such as DR Congo. However, other poor-governance states that have received a lot of



Chinese investment such as Angola and Nigeria are not poor and are not designated as fragile states.

Since Chinese investment is indifferent to a country's property rights and rule of law environment, there are similar levels of Chinese investment in good-governance countries and poor-governance countries. For example, if we divide the 49 African countries into three groups based on the Rule of Law Index values from 2014, we see that the stock of Chinese ODI is nearly the same in good-governance countries as in poor-governance ones (Figure 3.7, left). By contrast, nearly 60% of the overall stock of FDI resides in good-governance countries, compared to only 25% in poor-governance countries (Figure 3.7, right). These patterns demonstrate that the countries in which China's *share* of inward investment is relatively *large* tend to be ones with poor governance. Even so, it is only a minority of Chinese investment that is in those environments.

Some of China's resource investments in countries with poor governance are old enough now that one can begin to assess their viability. In DR Congo, for instance, a US\$6 billion "minerals for infrastructure" deal was signed in 2007. Two Chinese firms, Sinohydro Corporation and China Railway Group Limited, agreed to build roads and hospitals in exchange for a 68-percent stake in the Sicominex copper and cobalt mine, one



of the largest in Africa with about 6.8 million tons in proven reserves. The state-run Export-Import Bank of China and smaller Chinese banks put up US\$3 billion for infrastructure, plus a further US\$3 billion to develop Sicominex, with all the loans to be repaid through mining profits. Yet, eight years on, production from the mine has been delayed due to crippling power shortages, suffocating bureaucracy, and corruption.<sup>33</sup> So far, the main lesson gleaned from this giant project is that investing in one of Africa's most chaotic countries makes for messy and frustrating business.

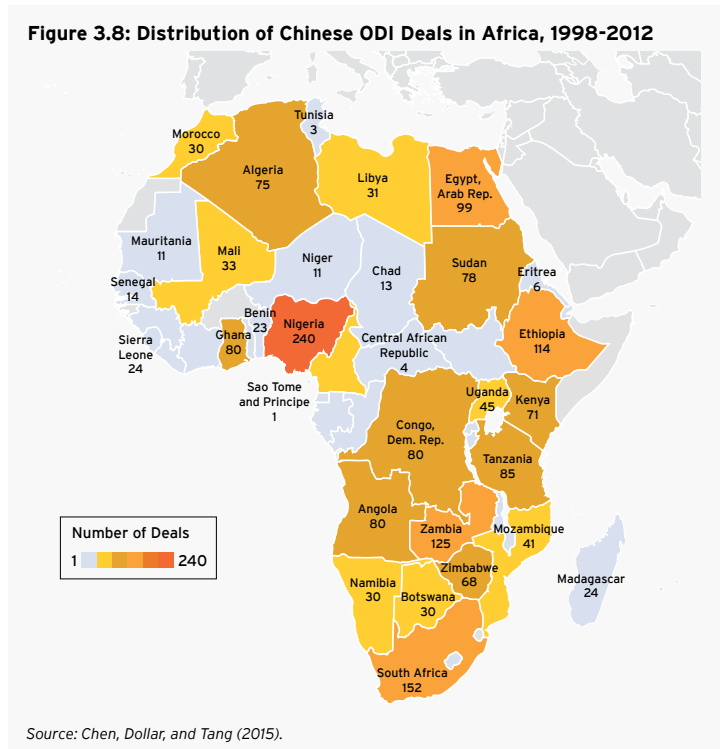
In Angola, Sinopec invested in six deep-water oilfields in cooperation with Angola's state oil group, Sonangol, between 2004 and 2013. Those oilfields have turned into a black hole of sorts, swallowing funds from Sinopec without generating any commercial value. In March 2015, auditors sent by China's National Audit Office to screen financial statements from Sinopec International Petroleum and Production, Sinopec's overseas investment arm, found that investments made in the five oilfields between 2008 and 2013 had amounted to around US\$10 billion and that poor performance, exaggerated oil reserve estimates, and sharp declines in international oil prices would lead to a majority of the investment being wasted.<sup>34</sup>

One of the key differences between Western FDI and Chinese ODI is China's greater appetite for risk, as evidenced by its willingness to invest in countries with weak rule of law. As some of these initial investments fail, it seems likely that Chinese state firms will learn that it is difficult to turn profits in such environments.

### 3.3: CHINA'S PRIVATE FIRMS INVEST IN SERVICES, MANUFACTURING

Some of the big state-to-state deals have gone awry, but what is happening with investments from small and medium-sized Chinese firms, most of which are private? MOFCOM's registry of Chinese firms investing in Africa sheds some light on

this question. Data on Chinese ODI transactions are available for deals that were approved by MOFCOM between January 1, 1998, and December 31, 2012. For each ODI deal, MOFCOM's data set includes the name of the investing firm, the firm's sector of business, the province of origin, and the recipient country of the ODI flow. There is, however, no information on the size of each deal or the name of the target for mergers and acquisitions. As discussed in the previous section, the raw data show 2,005 Chinese firms investing in Africa, with investments spread across 49 countries on the African continent.<sup>35</sup> Figure 3.8 depicts the distribution of deals by country and makes clear that China is investing all over the continent. Large, oil-rich Nigeria has the most Chinese firms investing. The rest of the top five recipients of ODI are diverse in terms of location and resource abundance: South Africa and Zambia are non-oil, resource-rich countries in the south; Ethiopia is



a resource-poor country in the east; and Egypt is the largest country in North Africa. As for East Africa, a significant number of Chinese firms are investing in Kenya, Tanzania, and Uganda, which as a group are relatively resource-poor compared to Southern African countries like Zambia, Angola, and South Africa. Among the reasons that East Africa stands out as a popular destination for private Chinese investments are its proximity to China and its relatively more-developed infrastructure (including ports), a trend that is likely to persist. The East Africa Community (EAC), in particular, is a customs and single-market trading union that has relied mostly on loans from the Chinese government to invest heavily in infrastructure, such as the Standard Gauge rail project originating in Kenya, as well as the Karuma hydroelectric power project in Uganda. These projects will enhance the connectivity between these countries and supply reliable energy in the years to come, thus making the region an increasingly attractive destination for investment. (The issue of infrastructure will be examined in greater detail in the next chapter.)

Chen, Dollar, and Tang (2015) analyze key words in the Chinese-language descriptions of MOFCOM's database to categorize investments according to industry. Since most deals involve multiple projects, sometimes in different industries, this categorization results in a sample of 3,989 projects distributed across 17 manufacturing sectors, 7 service sectors, and 1 mining sector. About 60 percent of the projects are in service sectors, with the remaining portion almost evenly split between manufacturing and natural resources. The two sectors that received the most Chinese ODI in terms of volume of deals are business services (1,053 deals) and imports and exports (539 deals). Thus, contrary to popular perception, most Chinese ODI deals are not related to raw materials, but rather are focused on services. This is true regardless of the resource wealth of a country. Figure 3.9 divides African countries by the resource intensities of their exports, following the IMF's categorization for (1) oil exporters; (2) non-oil, resource-intensive countries; and (3) the rest of Africa's economies. Strikingly, the pattern of investment is similar



in countries with relatively higher human capital per worker (as determined by the Barro-Lee Dataset on schooling per person). They also find that capital-intensive investments are more likely to take place in capital-scarce economies (i.e., those with a low ratio of capital to labor). These results are consistent with profit-maximizing behavior by investors in environments where capital is relatively mobile and labor is not, as tends to be the case in reality.

One plausible interpretation of the pattern of investment by Chinese private firms in the service and manufacturing industries is that they are following some of the large Chinese state enterprises as they invest in Africa. The large state firms are involved in resource deals, and the small private firms meet spillover demand. The large resource deals create demand for import and export services, other business services, restaurants, hotels, and certain types of manufacturing (furniture, for example). As it relates to manufacturing, the specific sectors that receive investment are influenced by the recipient country's factor endowments.

### 3.4: CONCLUDING OBSERVATIONS

This chapter provides a nuanced view of China's direct investment in Africa. Using aggregate data on China's direct investment in each African country debunks various popular myths about China's activity on the continent. According to the most recent data, China accounts for about 3% of the stock of direct investment in Africa. Even if that figure is a significant underestimate, China's investment is still relatively small. Chinese investment is attracted to natural resource wealth, but only modestly more so than Western investment. Finally, the overall allocation of Chinese investment is indifferent to recipient countries' property rights and rule of law conditions, whereas Western investment tends to avoid poor-governance environments. Since Chinese investment is equally distributed across good-governance and poor-governance environments, whereas Western investment

is concentrated in the former, the *share* of Chinese investment in poor-governance environments tends to be relatively high. Some of the biggest investments in poor-governance countries are proving to be unwise, so Chinese state enterprises may well learn from this experience and become more selective in their investments.

The aggregate data is heavily influenced by some very large deals, which tend to involve state-enterprise investments in natural resource projects. But analyzing MOFCOM's database on all Chinese firms that invested in Africa between 1998 and 2012 reveals a more complex picture, indicating how small and medium-sized private Chinese firms are investing in Africa. Relatively few of these investments, which are spread across the continent, are in the natural resource sectors. Service sector investments dominate, though there are a significant number of investments in manufacturing as well.

There is also evidence that Chinese ODI is profit-driven, just like investment from other countries. Specifically, cross-sector regressions show that Chinese firms invest in the more skill-intensive sectors in skill-abundant countries, whereas those firms invest in the less capital-intensive sectors in capital-abundant countries.

## CHAPTER 4

# CHINA'S ROLE IN FUNDING AFRICAN INFRASTRUCTURE

An important area for China's engagement in Africa is infrastructure finance. Africa continues to lag behind the rest of the developing world in the quantity of its infrastructure and the quality of its infrastructure services. Low-income African countries lag behind low-income countries elsewhere, as will be discussed in the first section of this chapter. Since 2000 there has been a significant increase in external financing for infrastructure in Africa.<sup>36</sup> Finance alone cannot solve Africa's infrastructure woes; developing infrastructure effectively requires sound policies and regulations. But for many African countries that have instituted better policies, external finance is an important catalyst. Section 2 of this chapter discusses how China has become an important source of infrastructure financing in Africa—though not dominant, as one might think based on media coverage. An efficient division of labor has emerged: private financing (including from Huawei) goes to telecommunications, traditional Western donors finance water supply and sanitation, and China's lending supports energy and transport.

Section 3 examines the presence of Chinese construction companies in Africa. Generally, China-financed projects are awarded to Chinese contractors. This has enabled construction companies to gain a foothold on the continent. These companies now win a large share of international bidding competitions for World Bank and African Development Bank infrastructure projects as well.



The final section of this chapter addresses the sensitive issue of environmental and social safeguards for infrastructure projects. The multilateral development banks have created a system of gold-plated standards that are expensive, time-consuming, and often override domestic laws and regulations, which is a concern for borrowers. China's approach is to follow the regulations of the recipient country. However, some countries poorly enforce their regulations, opening the door to environmental and social abuses.

#### 4.1: AFRICA'S DEFICIENT INFRASTRUCTURE

A key factor hampering Africa's integration with the global economy and its economic growth more generally is deficient infrastructure. Recall from Chapter 2 that in the IMF's analysis of which improvements would have the greatest effect on African trade, raising the quality of infrastructure to the world's average ranked first (estimated to spur a 42% increase in trade). Infrastructure weaknesses span all the main sectors: roads, ports, telecommunications, power, water, and sanitation. The deficiencies are especially acute in low-income African countries.

Table 4.1 presents infrastructure indicators for low-income African countries compared with other low-income countries in the world. Although these data—mainly from 2005—are already somewhat outdated, this comprehensive list is a good place to begin. Updated data will be presented below.

In 2005, low-income African countries had low road density, especially for paved roads. (Density here is defined as kilometers of road per 100 square kilometers of arable land. Using arable land in the denominator is important to adjust for the fact that some countries have a lot of desert or mountainous land where it would not be economical to build a dense road network.) For paved roads, density in the low-income countries of Sub-Saharan Africa (31) was less than one-quarter of the figure for other low-income countries. The gap in main-line phone

**Table 4.1: Infrastructure Deficit in Sub-Saharan Africa**

Normalized units	Sub-Saharan African low-income countries	Other low-income countries
<b>Roads</b>		
Paved-road density	31	134
Total road density	137	211
<b>Telecommunications</b>		
Main-line density	10	78
Mobile density	55	76
Internet density	2	3
<b>Electricity</b>		
Generation capacity	37	326
Electricity coverage	16	41
<b>Water and sanitation</b>		
Improved water	60	72
Improved sanitation	34	51

*Note: Road density is measured in kilometers per 100 square kilometers of arable land; telephone density in lines per thousand of the population; generation capacity in megawatts per million of the population; and electricity, water, and sanitation coverage in percentage of the population with access to services.*

*Source: Foster and Briceno-Garmendia (2009:1-2).*

density was even starker: 10 lines per thousand of the population in low-income Sub-Saharan Africa, compared to 78 in other low-income countries. Mobile density in low-income Sub-Saharan Africa, at 55 phones per thousand of the population, was only modestly behind other low-income countries (76 phones), indicating a potential for cell phone connectivity to “leapfrog” traditional telecommunications.

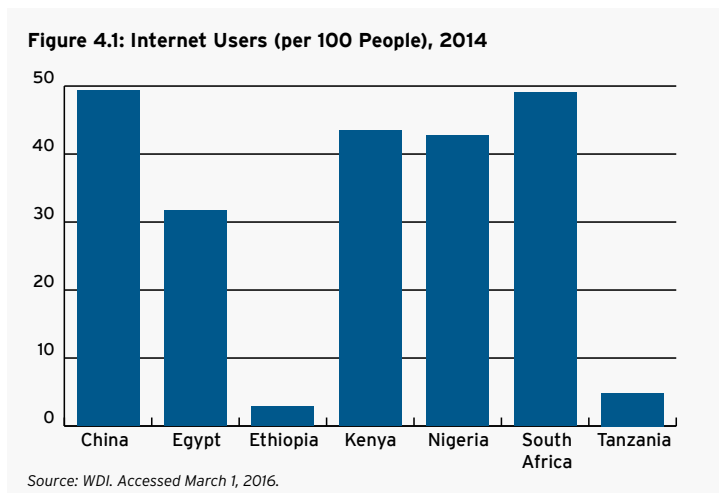
When it comes to power generation capacity, the disparity between low-income Sub-Saharan Africa and other low-income parts of the world is truly striking. In 2005 the generation capacity in low-income Sub-Saharan Africa was 37 megawatts per million of the population, or only about one-tenth the average capacity in other low-income countries. It is not surprising, then, that only 16% of the population in low-income countries across Sub-Saharan Africa had access to electricity, compared to 41% in other low-income countries.

The situation with water and sanitation was much better, with indicators of African development resembling those of other low-income countries. For example, 60% of populations

in low-income Sub-Saharan African countries had access to improved water, compared to 72% in other low-income countries. Related figures for access to improved sanitation were 34% and 51%, respectively. Low-income Sub-Saharan African countries' better water and sanitation infrastructure may reflect the fact that these have been priorities for traditional donors (as will be discussed later in this chapter), whereas donor support for transport and power has been weaker.

As noted, these data are already somewhat obsolete. They also mask large variations across African countries. Although it is hard to obtain up-to-date indicators for all countries, there are more-recent indicators available for a sample of countries. For instance, internet usage is growing rapidly in many African countries. Figure 4.1 shows 2014 data on internet users per 100 people. Nearly 50% of the population in China uses the internet. South Africa has comparable usage. Nigeria and Kenya, despite much lower per-capita incomes, boast usage rates above 40%. On the other hand, low-income Ethiopia and Tanzania have usage rates below 5%.

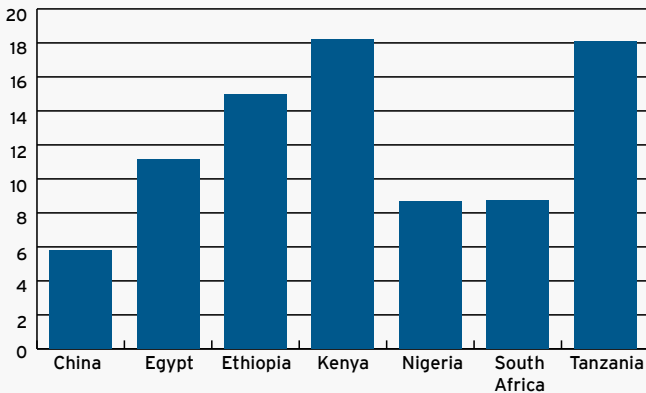
Figure 4.2 presents data on the power sector from 2012. Beyond the installed generation capacities listed in Table 4.1,



there is also the issue of transmission and distribution losses. Measuring these is important for three reasons: first, losses mean that a country is not getting full potential from its installed capacity; second, high losses make it difficult to operate the power sector on a commercial basis and hence hamper investment that would increase capacity; and third, losses typically go hand in hand with frequent power outages. Firms in such an environment need to maintain costly back-up generators or else face regular shutdowns. Among developing countries, China stands out with power losses of only about 5%. The figures for Nigeria and South Africa in 2012 were 8%. Ethiopia, Kenya, and Tanzania—all lower-income countries—were in the 14-18% range. Comparatively speaking, that is a high level of electricity loss, indicating that existing capacity is not utilized well and that further investments may yield poor returns.

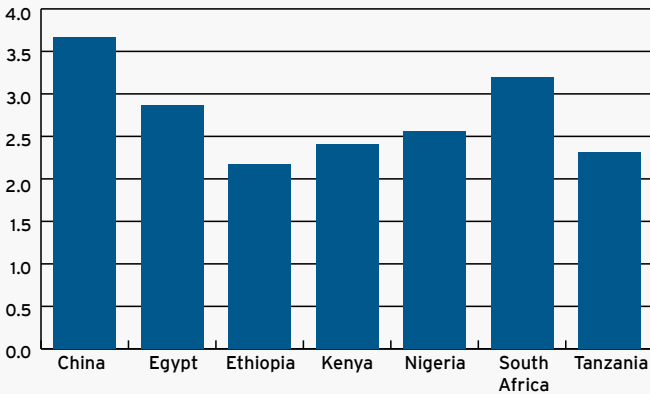
Figure 4.3 presents recent data related to trade and transport infrastructure in the form of a logistics performance index that measures the ease of moving goods to market. Among developing countries, China performs well, with an index of 3.5 on a 5-point scale (most advanced economies are close to 5). South Africa is comparable to China. But Ethiopia, Nigeria, Kenya, and Tanzania lag far behind, with index values close to 2 or 2.5.

**Figure 4.2: Electric Power Transmission and Distribution Losses (% of Output), 2012**



Source: WDI. Accessed March 1, 2016.

**Figure 4.3: Logistics Performance Index: Quality of Trade and Transport-related Infrastructure (1=low, 5=high), 2014**



Source: WDI. Accessed March 1, 2016.

Infrastructure issues have clear connections to human welfare and economic development: improved water and sanitation support positive health outcomes and cognitive development; access to electricity is necessary both in the home (for reading and studying) and, of course, in industry and commerce; and transportation and telecommunications are vital to connecting markets.

## 4.2: CHINESE FINANCING FOR AFRICAN INFRASTRUCTURE

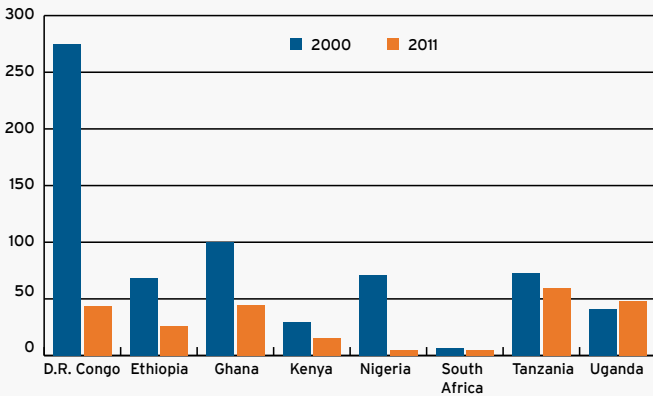
In 2009 the World Bank and other major donors examined infrastructure financing needs and published their findings in *Africa's Infrastructure: A Time for Transformation*.<sup>37</sup> The analysis determined that the African continent as a whole could make productive use of up to US\$93 billion per year (6% of African GDP<sup>38</sup>) in infrastructure investment. A couple of caveats are worth mentioning. First, most financing should come from *domestic savings*: government tax collection, fees for infrastructure services, domestic government borrowing, and domestic private investment. Foreign financing can be a useful supplement, but if a country relies exclusively or excessively on foreign finance, then it will develop an unsustainable foreign debt. Second, producing

infrastructure services depends as much on institutions and policies as it does on finance. With sound institutions and policies, it is possible to induce private investment in the more commercial aspects of infrastructure (telecommunications, power generation, port operation), often through public-private partnerships. And in cases where infrastructure is provided only publicly, sound institutions and policies are needed to minimize waste, price services sensibly, and operate facilities efficiently.

Throughout the 1980s and into the 1990s, many African economies were mired in slow growth and economic crises. Some of this resulted from external shocks, but poor domestic institutions and policies also played a role. The average rate of growth for African economies paralleled the rate of population growth, so that there was no per-capita progress or poverty reduction during this period. Since then, many African countries have strengthened their institutions and policies. As noted in Chapter 2, across the continent there is wide variance in the strength of property rights and the rule of law, with the associated indices of a number of large economies measuring quite high for their income levels. African economies have also resolved the problem of debt overhang, which arose from previous borrowings that were inefficiently used.

Figure 4.4 shows net foreign debt relative to GDP for a range of countries in 2000 and in 2011. The debt problems of 2000 are evident: DR Congo carried a net debt above 250% of GDP; Ghana's was close to 100%; and Ethiopia, Nigeria, and Tanzania all hovered above 50%. By 2011 net foreign debt relative to GDP had decreased in all of the economies shown, except for a small increase in Uganda, which had already been at a fairly safe level in 2000. In part, these declines reflect debt forgiveness from official donors, as well as better fiscal and monetary management in these countries. Heading into the 2010s, all of these economies were well positioned to make *prudent* use of foreign resources to assist with funding infrastructure and other investments. Of course, it is natural to worry that with excessive borrowing a new round of debt problems could emerge.

**Figure 4.4: Net Foreign Debt Relative to GDP in Sub-Saharan Africa (%)**

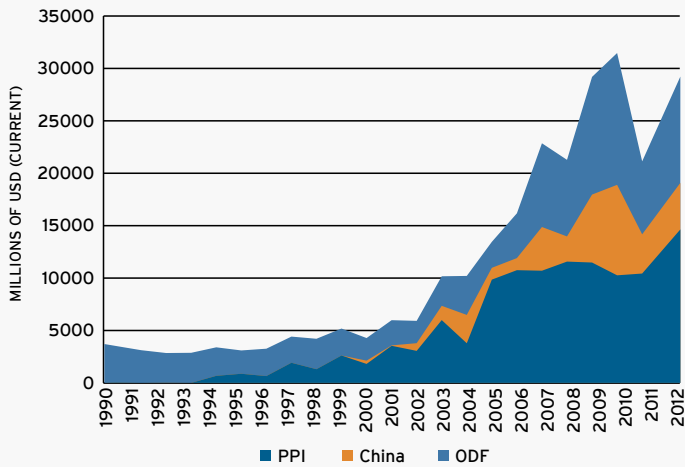


Source: IMF Data. Accessed March 3, 2016.

The trick for African countries is to find the middle ground between financing and debt. With improved institutions and policies, the typical African economy has been growing at a healthy rate of 5-6% per year in real terms since 2000. Add in some modest inflation, and nominal GDPs are expanding at close to 10% per year. Hence, there is significant potential to increase foreign borrowing without raising the foreign debt to GDP ratio at all. Plus, some of the ratios presented in Figure 4.4 are very low, particularly those for Ethiopia, Kenya, South Africa, and Tanzania. These countries could expand net foreign debt relative to GDP modestly without setting off any alarm bells. To do this, they would need to make some use of foreign finance and have an institutional and policy framework that directs financing to productive ends.

This provides a useful context in which to examine the surge in external financing of African infrastructure since 2000 (Figure 4.5). In the 1990s external financing mostly came from official development finance (ODF) and was stable at the low level of less than US\$5 billion per year. ODF comprises loans from multilateral development banks such as the World Bank and the African Development Bank, including concessional loans to low-income countries and non-concessional loans to

**Figure 4.5: Surge in External Financing of African Infrastructure**



Source: Gutman, Sy, and Chattopadhyay (2015).

middle-income countries. It also includes grants and loans from traditional Western donors.

The surge in external financing since 2000 is based on three factors: a doubling of infrastructure-oriented ODF to about US\$10 billion per year; China’s emergence as a significant financier, with loans totaling about US\$5 billion per year; and, most importantly, the expansion of *foreign private financing* of infrastructure (labeled “PPI,” or private participation in infrastructure, in Figure 4.5). PPI expanded from basically zero in the early 1990s to US\$15 billion in 2012.

Although China’s financing of African infrastructure is substantial, it is still the smallest of the three sources. That fact reflects a major theme of this study: while China’s economic activity in Africa is significant and growing rapidly, it tends to be exaggerated in the press and in most discourse. As with direct investment, the notion that China is saturating Africa with infrastructure financing is overblown. The misconception may partly stem from big but vague deals announced in the press. Figure 4.5 shows actual implementation and disbursements.



If all the announced deals proceed, then Chinese financing of African infrastructure will grow rapidly in future years. However, large-scale deals often fall through or get scaled back even after being announced. The reality, based on the most recent data, is that China has become a major source of finance, but infrastructure funding from private investment and traditional official sources have also increased. Total external funding has reached about US\$30 billion per year in recent years, roughly one-third of the amount of financing the World Bank estimated that Africa could put to productive use in its 2009 study. There is no firm rule for the balance of funding from external versus internal sources, but this number seems to be sustainable.

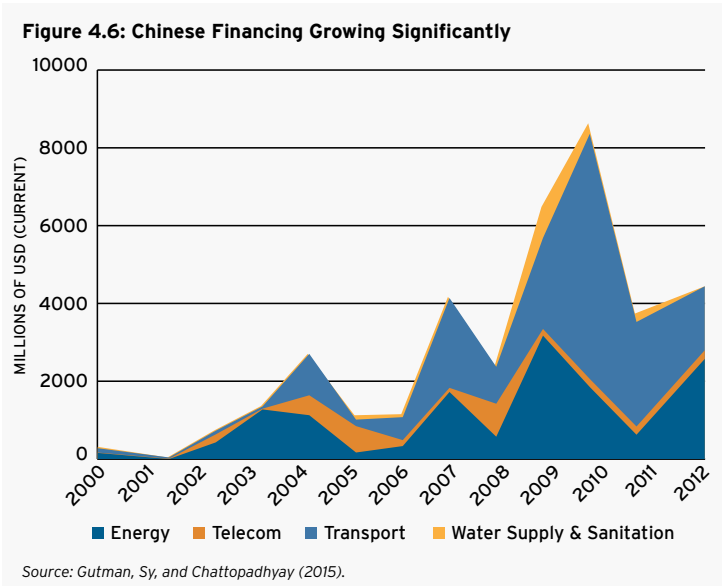
Are China, traditional donors, and private investors falling all over each other to fund good infrastructure projects in Africa? A study from the Africa Growth Initiative at Brookings suggests that they are not, as a fairly clear division of labor has emerged in infrastructure financing. Private investment has been channeled primarily toward telecommunications, which is the infrastructure sector that is easiest to organize on a commercial basis. The rapid expansion of cell phones and internet access across Africa mostly has arisen from private investment. In the right regulatory environment, it would be possible to attract private investment in power generation as well, but so far this has proved difficult in Africa.

In the 1970s and 1980s, traditional donors financed a lot of economic infrastructure in power and transport. The results were often lackluster: projects did not generate the predicted infrastructure services, and what services were produced did not generate the expected growth-inducing effects. Much of this was financed by loans, contributing to debt problems in low-income countries. As noted above, much of this debt has now been forgiven. Traditional donors have shifted their focus to social services and social issues, with much of their infrastructure financing now going to water supply and sanitation. Based on the indicators summarized in Table 4.1, low-income

Sub-Saharan African countries are closer to global averages in terms of access to clean water and safe sanitation than they are for more-economic infrastructure. Traditional donors' focus on water supply and sanitation has likely contributed to these better indicators and to better health outcomes on the continent.

In this context, many African countries welcome China's focus on financing transport and energy infrastructure. China's infrastructure financing in Africa has risen from close to zero in 2000 to a peak of US\$8 billion in 2010, averaging about US\$5 billion per year in recent years (Figure 4.6). Transport projects in roads, rail, and ports constitute the largest category, accounting for about half of financing. Energy projects—mostly related to power generation, including hydropower—make up most of the other half. Chinese financing of telecommunications and water or sanitation is limited.

The fact that China is focusing on transport and energy in the same way that traditional donors did in the 1970s and 1980s

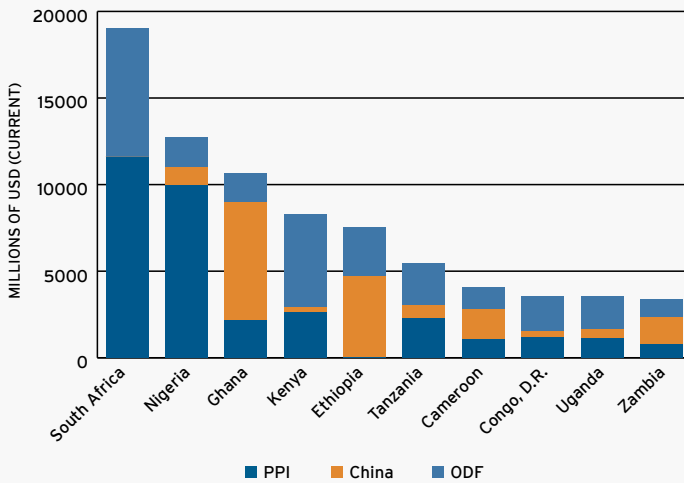


is interesting. It is still too early to say how Chinese investments are faring, but there appear to be three possible outcomes. First, China may have the same experience as earlier donors; that is, new infrastructure may not have its predicted economic impact and instead may leave recipient countries with unserviceable debts that have to be forgiven. Second, new infrastructure may satisfy important needs, enabling growth throughout the continent to accelerate and remain high. Or third, there may be good results and sustainability in the countries that have better institutions and policies, but poor results in the very weak governance environments.

The first potential outcome seems unlikely. Institutions and policies have improved on the continent such that current growth is much higher now than in the 1980s and 1990s. Hence, there is current unmet infrastructure demand, and many projects should be successful. The all-positive result also seems unlikely because there remain countries with very poor governance climates. Direct Chinese investment in DR Congo, Angola, and South Sudan is not working out well. It seems unlikely that simply building infrastructure in these poor-governance environments will lead to economic transformation. In many ways, that is exactly the experiment that Western donors conducted, with poor results. The third possible outcome seems the most plausible. In countries with better institutions and policies, economic infrastructure projects will meet real demand, contribute to growth, and not saddle countries with unmanageable debt. The economic results in poor-governance environments, on the other hand, are likely to be weak.

Figure 4.7 shows the allocation of PPI, ODF, and Chinese financing across some major African economies. It is interesting that the largest recipients of Chinese infrastructure financing are Ghana and Ethiopia, which are not particularly rich in natural resources. Chinese financing is proportionately large in Cameroon and Zambia, but these are small economies. Note that Chinese infrastructure financing in DR Congo is very limited. One important caveat about these data is that

**Figure 4.7: Top Overall External Commitments, 2009-2012**



Source: Gutman, Sy, and Chattopadhyay (2015).

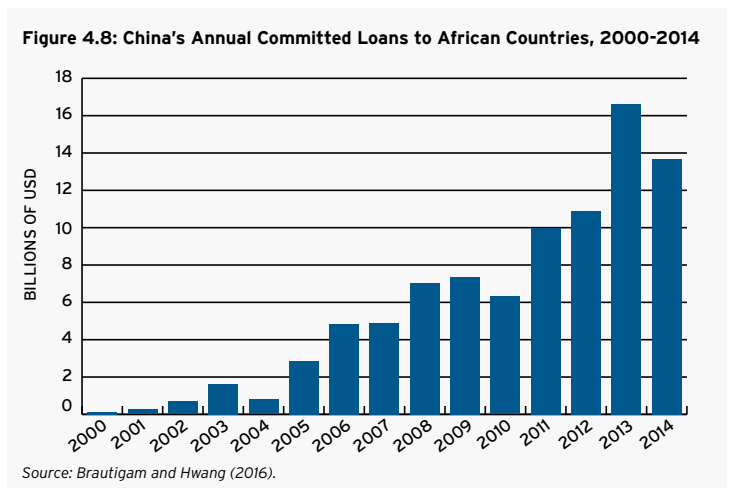
infrastructure financing primarily comes from the Export-Import Bank of China (China Exim Bank) in state-to-state deals. The implementation of these projects will be discussed in the next two sections, but here it is important to note that infrastructure financing that is bundled together with Chinese direct investment is missing from these data. For example, the previous chapter discussed China's direct investment in the DR Congo's Sicominex copper and cobalt mine. As part of that deal, China will build roads and hospitals, surpassing the infrastructure that is narrowly needed for the mining project. The total value of the project as it is implemented is counted as Chinese ODI, not as financing of infrastructure. Therefore, China's overall financing of African infrastructure is larger than indicated by the numbers in this section.

### 4.3: AFRICAN BORROWING FROM CHINA

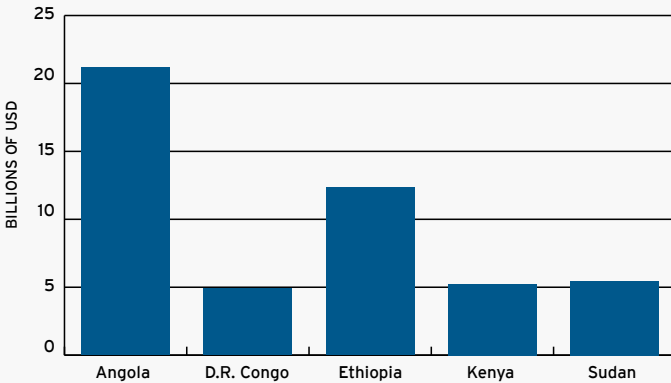
Given the extent of China's financing of infrastructure in Africa, it is natural to wonder if Africa's borrowing is leading to new debt problems. Most of the Chinese financing comes from

China Exim Bank, and most of it is not concessional—that is, it is dealt at commercial interest rates. And much of that financing requires a sovereign guarantee from the recipient government in Africa. Detailed analysis needs to be done country by country, but it is possible to get a general picture of China’s lending to Africa. Brautigam and Hwang (2016) have published a database of China’s lending to Africa based on IMF documents, African countries’ debt reporting, and publications from Chinese banks. The database includes loans to African governments and to African state enterprises with a government guarantee. This exhaustive data effort yields four main findings.

First, China’s lending to Africa is significant but not of the overwhelming scale suggested by some media commentary. The World Bank remains the largest external funder of African development, but China Exim Bank is not far behind. From 2006 until 2010 Chinese financing was around US\$5-6 billion per year. It then ramped up to US\$10 billion per year in 2011 and 2012, and averaged US\$15 billion in 2013 and 2014 (Figure 4.8). This amount is now likely to plateau or even decline. African growth rates have slowed significantly because of the end of the commodity boom, and Africa’s ability to take on new debt is somewhat diminished.



**Figure 4.9: Top 5 Loan Recipients, 2000-2014**

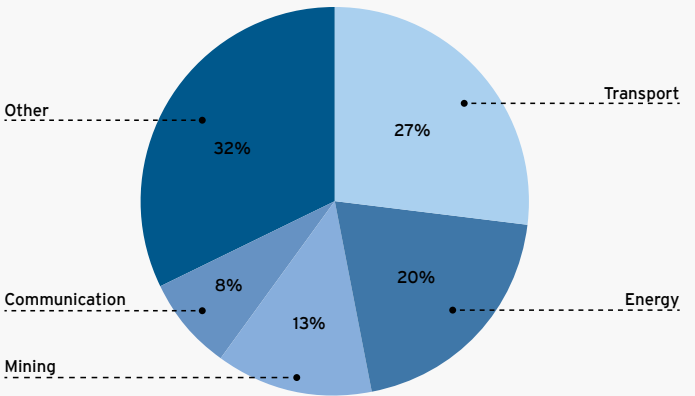


Source: Brautigam and Hwang (2016).

A second finding is that the loans go to a diverse array of countries. Angola is by far the largest recipient, with US\$21.2 billion in loans over the 15-year period from 2000 to 2014 (Figure 4.9). The other countries in the top five are Ethiopia, Sudan, Kenya, and DR Congo. The results here have some consistency with the findings on direct investment discussed in Chapter 3. Chinese direct investment in Africa does not distinguish between the better rule of law countries and the weaker ones, unlike Western investment. Among the top five recipients of Chinese loans, Angola, Sudan, and DR Congo are all well below the mean of African countries in terms of the measure of property rights and rule of law in 2014. Ethiopia and Kenya are well above the mean.

Third, the loans are mostly used for infrastructure. Only 13% of China's loans go to mining (Figure 4.10). Most of China's mineral and oil and gas investments on the continent are direct investments and do not involve a sovereign loan. Consistent with the findings discussed in the previous section, China's main infrastructure activities are in transport and energy. Loans for transport projects comprise 27% of the total, and these are divided fairly evenly between road and rail. Energy accounts for 20% of China's loans on the continent, with about

**Figure 4.10: Sectors Receiving Chinese Loans, 2000-2014**



Source: Brautigam and Hwang (2016).

half of that directed at hydropower. Communication takes a small share of the loans—only 8%. As noted in the previous section, telecommunications is mostly financed by private investors, so there is little need for sovereign borrowing and government investment in this sector.

A fourth finding from the Brautigam-Hwang study is that about one-third of China's loans to Africa are secured by commodities. This form of lending is nothing new; Western banks have often used commodities as security for loans. China, in fact, pledged commodities on loans that it received early in its reform period, when it did not have much of a track record or reputation as a borrower in international markets. The researchers' database identifies oil-secured lines of credit for Angola, Congo-Brazzaville, Equatorial Guinea, Ghana, Niger, and Sudan. For these types of loans from China Exim Bank, the finance is tied to goods and services from China. From the point of view of recipient countries, this method enables them to get international loans on terms that would otherwise be unavailable to them. The downside is that they have to spend that financing on goods and services from China, rather than being able to shop internationally. For China, using oil

or other commodities as security reduces the risk of default, enabling it to promote its exports, even in risky environments.

#### 4.4: CHINESE CONSTRUCTION COMPANIES IN AFRICA

Beyond the issue of finance, there is a question of how infrastructure projects are implemented. China Exim Bank is the main funder of China's infrastructure projects in Africa. Just as other export credit agencies around the world advance their countries' economic interests, China Exim Bank's goal is to promote the export of Chinese goods and services and to increase the internationalization of Chinese companies. Its main instruments are export credit and preferential foreign loans. Projects backed by concessional loans must be executed by Chinese contractors, which are often selected through a non-competitive negotiation process. A significant share of the goods and services embodied in a project must come from China.

Thus, Chinese construction firms have benefited from access to low-cost government lines of credit, as well as the "tied" financing of China's overseas concessional loans. Given China Exim Bank's mandate, preferential treatment for Chinese companies is unsurprising. Export credits and "tied" bilateral funds are also still employed by some wealthy countries' export credit agencies. China is following a model established by Western countries, and India is taking a similar approach. What is different about China may simply be the scale. China's infrastructure loans total about half as much as overall official development finance. Much of ODF comes from the World Bank and the African Development Bank, which engage in international bidding for their projects, giving advantage to no particular nation. Tied bilateral funds from wealthy countries, which are invested across many countries, offer a clear advantage to the funding country. China provides a large amount of tied funding, which has enabled its contractors to get an important foothold on the continent.

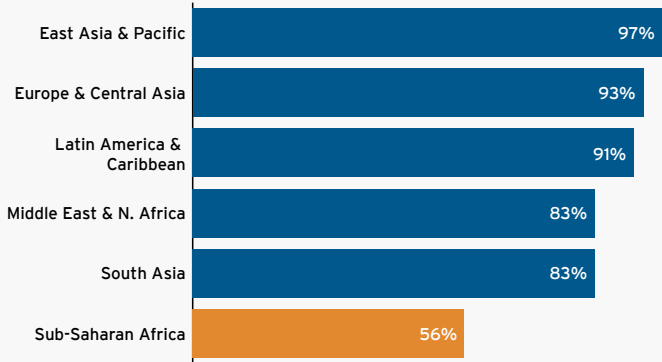


The extent of this foothold can be assessed by looking at public records from the World Bank, which list contractors who have won infrastructure projects in Africa through internationally competitive bidding. Big infrastructure projects are divided into civil works and equipment: civil works refer to actual construction on the ground, and equipment includes power generators and other machinery that is typically imported from low-cost suppliers. A general feature of World Bank infrastructure projects is that most civil works contracts are won by firms from the region where construction occurs: Asian projects by Asian firms, Latin American projects by Latin firms, and African projects by African firms. This reflects the fact that hiring local firms for civil works projects carries distinct advantages. Typically, it is not possible to bring in large numbers of foreign workers, whereas local firms already have sufficient workforce and capacity for these projects.

Africa, however, is something of an exception to this rule. According to the World Bank's data for fiscal year 2013, although regional firms won a majority of civil works contracts for Sub-Saharan Africa, the share was a modest 56% (Figure 4.11). Equivalent shares ranged from 83% in South Asia, the Middle East, and North Africa to 97% in East Asia. Among non-African firms that won contracts in Sub-Saharan Africa, Chinese firms were by far the largest group. Figure 4.12 shows China's share of civil works contracts in Africa from 1995 to 2013. Over that period, the Chinese share grew from less than 10% to over 30%. Given the inherent advantages of local firms, this is a remarkable expansion. It is consistent with the notion that Chinese construction companies have used the tied support from bilateral projects (i.e., China Exim Bank's lending money to African countries for infrastructure projects that have to be carried out by Chinese firms) to become a competitive force on the continent.

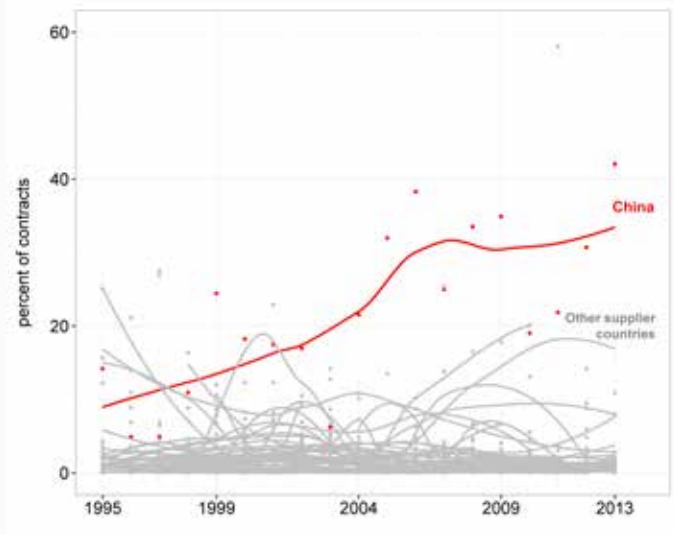
This development is a mixed blessing for African economies. The fact that Chinese contractors are winning fair competitive bidding from the World Bank (and the African Development

**Figure 4.11: Percentage of Internationally Bid World Bank Civil Works Contracts Won by Firms from Same Region as Construction, FY 2013**



Source: Zhang and Gutman (2015).

**Figure 4.12: Chinese Firms' Share of Civil Works Contracts in Africa, 1995-2013**



Source: Zhang and Gutman (2015).

Bank as well) indicates that they are low-cost producers of infrastructure—African governments get more for their money. Farrell (2016) examines the results of World Bank infrastructure projects in Africa, comparing projects with Chinese contractors and ones with contractors from countries within the Organisation for Economic Cooperation and Development (OECD). He finds that the Chinese contractors perform as well as the ones from OECD countries. On the other hand, Chinese firms are crowding out the development of an African construction industry. The issue of Chinese workers will be taken up in the next chapter. Typically, construction firms around the world are not able to bring in large numbers of foreign workers because countries—especially developing countries—want to create jobs for their own people. In some cases Chinese firms are bringing in workers illegally. Clearly it is in the interest of African countries to manage this process better.

#### 4.5: ENVIRONMENTAL AND SOCIAL STANDARDS

Environmental and social standards are a source of controversy as it relates to China's investment in Africa, especially in infrastructure. Big infrastructure projects usually have big environmental impacts. And often significant numbers of people have to be resettled involuntarily. Multilateral development banks like the World Bank have, over time, developed detailed environmental and social policies to govern infrastructure projects. A key aspect of these policies is consultation with affected populations. A large infrastructure project funded by the World Bank will include: one or more environmental assessments; public comments on the assessments; mitigation measures for negative environmental effects; generous resettlement policies, including for squatters with no legal documentation of residence; and recourse mechanisms for people who feel that the procedures have not been implemented properly. No system is perfect, but I would argue—based on my 20 years in the World Bank—that it is a sincere effort to bring first-world environmental and social governance to third-world

environments. I would also add that it was pressure from civil society—mostly in developed countries that provide financing, but also in developing countries that are the locus of activity—that drove this development of standards and procedures.

Private sector actors have also adopted environmental and social safeguards for investment projects in developing countries. A prominent example of these protections is the Equator Principles (EP), which, according to its website, “is a risk management framework, adopted by financial institutions, for determining, assessing and managing environmental and social risk in projects. It is primarily intended to provide a minimum standard for due diligence to support responsible risk decision-making. Currently 83 Equator Principles Financial Institutions (EPFIs) in 36 countries have officially adopted the EP, covering over 70 percent of international Project Finance debt in emerging markets.”<sup>39</sup>

Some worry that China will undermine this system of environmental and social safeguards. While the Asian Infrastructure Investment Bank (AIIB) is not involved in Africa, the brouhaha around its establishment illustrates the concern. China proposed the creation of the AIIB and will be its largest shareholder, while the United States opposed the bank’s establishment and urged allies not to join, partly on the grounds that the bank would undermine the environmental and social standards set by existing multilateral banks. In the end, most U.S. allies joined the AIIB, which is getting off the ground with infrastructure lending in Asia. The new bank differs from existing multilateral banks, such as the World Bank and the Asian Development Bank, in that developing countries make up a majority of its shareholders.

When funding overseas projects, China’s approach is to follow the rules and regulations of the country in which it is investing, which is a reasonable attitude—except that implementation of regulations is poor in many developing countries. Critics of China’s activity in Africa note that China’s own domestic environmental outcomes are also very unsatisfactory. Its problems

with air and water pollution are well known. China has a complete set of environmental regulations on the books, but these are often ignored in practice.

Beyond the rhetoric, there is a real issue of tradeoffs here. The strength of regulations and their enforcement reflects preferences. The first-world policies that the World Bank regulations embody are costly and time-consuming because wealthy developed countries have opted to proceed slowly and carefully on further infrastructure development and prioritize environmental and social protections. That is a reasonable choice in a rich environment. Preferences in the developing world are likely to be different, however. In an interview, one African diplomat summarized the situation: “In my country, if a local official promises to build a road, we never see the road; if the World Bank promises to build a road, in five years we will have a beautiful road; if China promises to build a road, in one year we have a road.”<sup>40</sup>

The Intergovernmental Group of Twenty Four (G-24) was established in 1971 to coordinate the positions of developing countries on monetary and development issues, giving those countries an amplified voice in the global financial system. The G-24’s 2015 study on “Infrastructure Finance in the Developing World” examines the issue of safeguards and is worth quoting at length:

One aspect of the business practices of the World Bank and major RMDBs [regional multilateral development banks] that has a particularly strong impact on infrastructure investment is environmental and social safeguard policies. Safeguards comprise procedures and restrictions on different types of lending operations meant to “safeguard” the project from having negative impacts on the environment and social groups. Safeguards were first instituted at the World Bank in the 1990s, and the other major RMDBs followed suit in subsequent years. The World Bank’s

safeguards are still considered the most comprehensive and rigorous, but the safeguards of the AsDB [Asian Development Bank], IADB [Inter-American Development Bank], and AfDB [African Development Bank] have been gradually tightened over the years such that the differences between them are relatively small, particularly on the hot-button issues of environmental assessment and resettlement.

As a project undergoes the initial screening process, MDB [multilateral development bank] staff members determine whether it triggers any of the MDB's applicable safeguards. Should that be the case, a separate series of special requirements must be followed before the loan can be approved and disbursed. The most frequently triggered safeguards in the case of the World Bank relate to environmental assessment and involuntary resettlement, and most frequently affect investment projects in the transportation, energy, and urban sectors. The required procedures are extraordinarily detailed and specific, and in many cases (notably, the World Bank's IBRD [International Bank for Reconstruction and Development] and IDA [International Development Association]) extremely difficult for borrowers and even staff to fully understand. Requirements often include time-consuming, lengthy studies to be undertaken by third-party experts (usually at the government's cost), lengthy consultations with affected parties (sometimes including unelected non-governmental organizations), extensive mitigation measures, and lengthy mandatory prior public disclosure and comment periods during which time the project cannot move ahead. These requirements supersede whatever national laws may be in place in the borrowing country—a particularly troubling point of principle for many borrowing countries, beyond the practical impacts of safeguards....

Collectively, the lengthy and complex processes described above for MDB project financing is a major deterrent to borrowers, particularly for large-scale infrastructure projects. A recent report by the Overseas Development Institute notes that speed of loan approval is a critical factor among government officials in borrower countries when choosing between sources of development finance. This matches findings from interviews with over 100 officials in 10 Latin American countries, which consistently found the bureaucratic “hassle factor” of the World Bank and IADB as a key disadvantage of borrowing from these institutions. The World Bank’s own 2012 client survey found similar results—“reducing the complexity of obtaining World Bank financing” was by far the top response from borrower countries on the best way to provide greater value to clients, well above improving financial terms or knowledge services.

The impact of safeguards and procurement rules is particularly strong in major infrastructure projects, such as building roads, urban transit, and energy plants. A World Bank 2001 Cost of Doing Business study found that “the willingness of IBRD borrowers to pursue Bank lending for certain kinds of infrastructure—electric power, dams, slum upgrading, transportation—is affected by the clients’ desire to avoid the costs, and the ‘hassle,’ of certain safeguard policies. Given other opportunities for financing, IBRD borrowers articulated an explicit hierarchy of preference for official borrowing in these infrastructure sub-sectors: domestic resources, bilateral donors, Regional Banks and lastly, the World Bank.” Further on, the report noted that “The Bank may be genuinely becoming a lender of last resort, but for perhaps the wrong reasons.”

Evidence suggests that the situation has not improved in the intervening years. A 2010 study by the World

Bank's Independent Evaluation Group (IEG) on safeguard policies found that environmental, social, and financial safeguards clearly limited lending. "The impact of this chilling effect was reported by a majority of team leaders from Latin America and the Caribbean and over 40 percent from East Asia and Pacific and South Asia." Of particular attention is the stringency of involuntary resettlement policy of the major MDBs, which borrowers claim frequently exceeds what would be required in industrialized countries. Safeguards are further complicated in some MDBs by infighting between project staff and safeguard teams, as well as a strong tendency to over-categorize projects out of risk aversion. As the 2010 IEG report noted regarding the World Bank, "...there is a fairly widespread perception among task team leaders that upward classification is driven by risk aversion rather than an empirical assessment of environmental and social risks."<sup>41</sup>

Over time, the share of the World Bank's lending allocated to infrastructure—its original core business—has declined, from over 70% in the 1950s and 1960s to about 30% in the 2000s and 2010s.<sup>42</sup> A number of factors underlie this shift, but certainly one of them is that it is costly and time-consuming to complete an infrastructure project following World Bank procedures. Taking all of the multilateral banks together, the total infrastructure financing in 2013 was US\$50 billion, or about 5% of the infrastructure financing needs for developing countries.<sup>43</sup> Hence, a system has evolved in which there are gold-plated standards for a tiny fraction of infrastructure investment. The alternative approach—relying on developing countries' own systems and trying to strengthen them—seems likely to be more effective than the current method.

Nevertheless, China's approach of relying on recipient countries' own laws and regulations also carries risks. In Gabon, Sinopec explored for oil in Loango National Park until the



country's national park service ordered exploration to stop in September 2006. Environmental groups had raised concerns that oil exploration threatened rare plants and animals, and that the environmental impact study had not been approved by the environmental ministry. This example illustrates that existing regulations are often ignored in countries with poor governance, but it also shows that local civil society is an important check on activities. Even so, projects that pose serious environmental threats have moved forward, such as Sinohydro's dam in the Bui National Park in Ghana or Sinohydro's project on the Kafue flats and its national park in Zambia.<sup>44</sup>

Where does this leave African governments and civil society? Having multiple funding sources is clearly an advantage. It would be hard to find African voices that want Chinese projects—or private sector projects—to adopt the World Bank standards. Continuing efforts to streamline World Bank procedures are welcomed, but the dominance of rich-country interest groups makes real reform difficult. China's reliance on national laws and regulations probably will work well in countries that have reasonably strong civil societies and popular input into political decisions. Western donors, for their part, can continue to support the development of democracy and civil society in African countries. As noted in Chapter 1, in Africa there is a strong relationship between, on the one hand, measures of democracy and civil liberties and, on the other, economic institutions such as property rights and rule of law. Hence, efforts to strengthen civil society are likely to lead to better economic governance and better economic and social results from all types of investment projects.

## CHAPTER 5

# CHINESE WORKERS AND LABOR ISSUES IN AFRICA

The large number of Chinese workers who have migrated to Africa is one of the most controversial aspects of the Africa-China relationship. The first section of this chapter addresses the question of how many Chinese workers are in Africa and why they are going there. Chinese official sources indicate that there were 259,385 workers in Africa in 2014. There are a large number of additional Chinese migrants not counted in these statistics, with estimates for the total number of Chinese in Africa reaching as high as one million. Whatever the exact number, their presence is a mixed blessing. Chinese workers provide missing skills, faster construction of infrastructure, and useful connections to the second-largest economy in the world. At the same time, Africa needs to employ its youth and would benefit if China's economic engagement created more jobs for Africans.

The second section of this chapter examines the changing demographics of Africa and China. China is nearing the end of a period in which it needed to create many new jobs and, in some sense, had excess labor that could usefully (from China's point of view) migrate to Africa. Because of the natural decline of fertility that comes with education and development, aided by the one-child policy, China is going to shift quickly from a labor-abundant to a labor-scarce economy. Wages are rising rapidly, which is good for Chinese people. As such, labor-intensive manufacturing is starting to move out of China. As China's labor force contracts over the next few decades, China will invest more overseas.

Africa's demographics are trending in the opposite direction. Half of its population is under 20 years of age. This demographic surge ensures that Africa's working-age population will increase rapidly: by about 20 million people per year in the near term and 30 million per year come the middle of the century.<sup>45</sup> By that time, most of the net increase in the *world's* labor force will occur in Africa. This labor force growth is both a significant challenge and a huge opportunity for Africa.

As labor-intensive manufacturing migrates out of China, if even a small share of it settles in Africa it will make a big impact on Africa's growth prospects. The final section of this chapter examines this possibility, noting how wages, exchange rates, and improvements in investment climates can coalesce to attract Chinese and other manufacturing investment to Africa.

### 5.1: CHINESE WORKERS IN AFRICA

Although Chinese migrants in Africa are becoming a controversial issue, there are no reliable data on this population. One million Chinese migrants is a commonly used estimate. For example, Howard French titled his 2014 study *China's Second Continent: How a Million Migrants Are Building a New Empire in Africa*.<sup>46</sup> French acknowledges that there is a high degree of uncertainty around the exact number of Chinese living in Africa, but recognizes that this group is large and growing. It should also be noted that not every migrant is a worker.

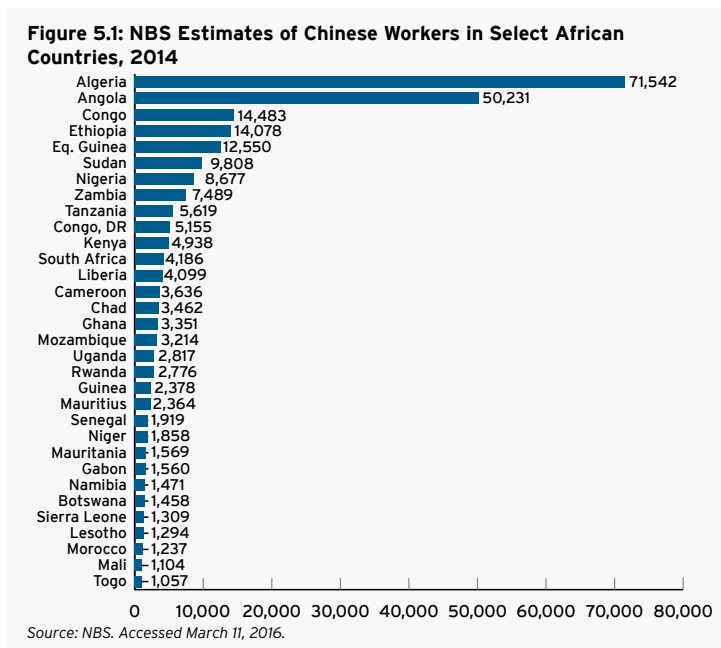
China's National Bureau of Statistics (NBS) provides figures for Chinese workers in Africa, including:

- Dispatched laborers on contracted projects: According to the "Foreign Contract Project Management Regulation," overseas contract projects are those managed by Chinese SOEs or private enterprises outside of China's territory. The number of dispatched laborers is the total number of

workers dispatched by the enterprise within the project period.

- Dispatched laborers of labor services: These laborers are part of the Overseas Labor Service; they are hired by domestic companies, acting as intermediary agencies, recruiting and sending Chinese workers overseas to provide labor services to foreign companies.<sup>47</sup>

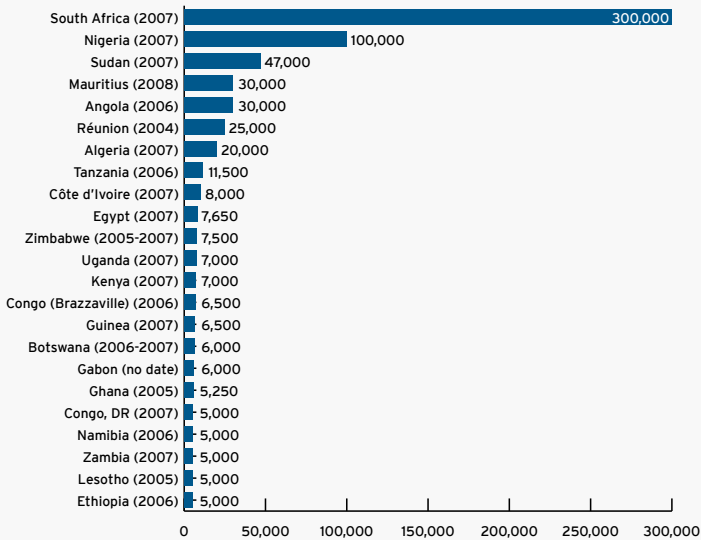
Figure 5.1 presents the NBS estimates of Chinese workers in different African countries in 2014. The countries with the most Chinese workers were Algeria (71,542) and Angola (50,231). There were modest numbers of Chinese workers in countries where Chinese investment and infrastructure projects are extensive, such as Ethiopia (14,078 workers), Sudan (9,808), and DR Congo (5,155). Countries with fewer than 1,000 Chinese workers are omitted from the table. According to the NBS, the number of Chinese workers in Africa as a whole was 259,385.



Researchers have generated estimates on the number of Chinese migrants in African countries based on country studies and press reports. Park (2009) estimated the number of Chinese living in various African countries in the mid-2000s (Figure 5.2). These numbers are generally much higher than the NBS estimates of Chinese workers: for example, 300,000 in South Africa and 100,000 in Nigeria. Park's estimates sum to about 700,000 migrants in the mid-2000s, which would be consistent with an estimate of around or above one million in recent years. One explanation for the discrepancy is that the NBS data only count workers who are in Africa on contracted projects. One of the main points Howard French makes in his analysis is that some Chinese workers who go to Africa on construction projects then stay and start their own businesses. Other Chinese entrepreneurs have moved to Africa on their own. This would account for a good share of the private investment activity that was analyzed in Chapter 3. Under this scenario, there might also be Chinese subcontractors who initially invest in Africa in the context of a large project but then expand their businesses into new areas not directly related to large Chinese projects.

French's book presents several rich case studies showing how this process unfolds. Many Chinese who went to Africa initially as workers or subcontractors have found a relatively booming economy that provides investment and entrepreneurial opportunities. The Chinese market is extremely competitive and, in many sectors, is encountering problems of overcapacity. Interestingly, a significant number of Chinese have chosen to stay in Africa and seek opportunities there. French's case studies reveal interesting patterns of geographic specialization. The big Chinese mining and infrastructure projects are concentrated in certain countries, as discussed earlier. As these projects hire more Chinese workers, they also result in more Chinese staying on either as workers or entrepreneurs. Hence, there are large concentrations of Chinese migrants in Angola, Sudan, and South Africa. Furthermore, workers on a Chinese mining or infrastructure project often come from a

**Figure 5.2: Estimates of Chinese Living in Select African Countries, 2005-2007**



Source: Park (2009).

particular part of China, and they may eventually bring family members. If they make occasional trips back to China, they share information about the economic opportunities in their new African homes. In this way, ties start to develop between particular Chinese and African locations.

This process is a mixed blessing for African countries. On the positive side, Chinese construction companies are very competitive in Africa, which means that Africa is developing needed infrastructure at lower costs. Chinese investments in mining and other sectors have similarly contributed to growth on the continent. In addition, the large Chinese diaspora that is settling in Africa deepens links between the continent and the world's second-largest economy, a bond that is likely to continue strengthening for another decade or longer. But set against these benefits are some downsides. Africa needs to create a lot of jobs for its large youth population. To the extent that Chinese workers fill jobs, there are fewer opportunities

for Africans. Although it is a myth that Chinese companies only employ Chinese workers, there are indeed a lot of Chinese workers involved in these projects.

Throughout its own development, China was circumspect about allowing foreign labor into its market. When China started welcoming foreign investment after the beginning of reform in 1978, it faced the same kind of tradeoff that Africa faces now. Foreign investors wanted to fill skilled and managerial positions with foreigners, including workers from Hong Kong and Taiwan, but Chinese officials restricted visas for foreign workers. This system put pressure on foreign investors to train local Chinese as fast as possible to fill skilled positions. China's 2010 census thoroughly counted foreigners living in China, including designating Hong Kong and Taiwanese document-holders as foreigners. China recorded 1.02 million foreigners, or 0.07% of the population.<sup>48</sup> This includes diplomats, students, and non-working family members of foreign workers, so in reality there are far fewer than a million foreign workers in China. At that time, China's stock of inward foreign direct investment totaled about US\$1.9 trillion.<sup>49</sup> Thus, China hosted about one foreign resident for each US\$1.9 million of foreign investment. By contrast, if we use the estimate of one million Chinese migrants in Africa, that would amount to one Chinese resident for every US\$32,000 of Chinese investment.

African countries may want to take a page from China's playbook. Hosting foreign workers can be an effective complement to foreign investment and can help developing economies connect to global markets and production networks, but it is also important to create incentives for foreign firms operating in Africa to employ and upgrade the skills of the local labor force. African countries could start by doing a better job of tracking the Chinese migrants who work in Africa so that stakeholders have more-accurate information as a foundation for policy discussions. African countries could also ask the Chinese government to help with data collection and encourage Chinese companies to employ local labor as much as possible.

## 5.2: THE SHIFTING DEMOGRAPHICS OF AFRICA AND CHINA

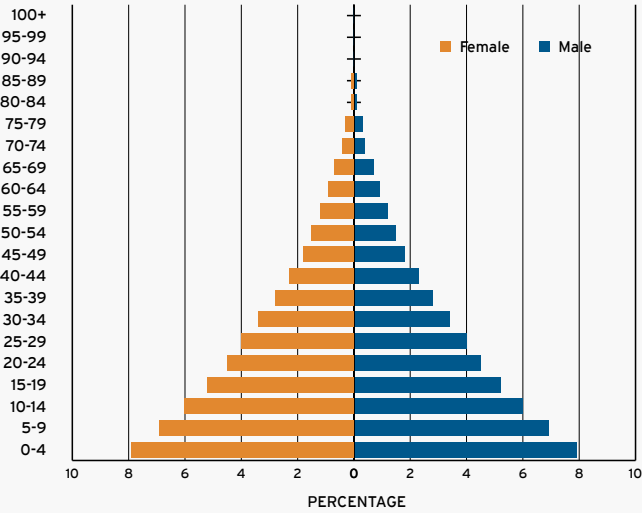
African economies are eager for job creation now, and their need for employment will only intensify in the near future. One interesting feature of the Africa-China relationship is that the demographics of the two are moving in opposite directions. As the Africa-China economic relationship took off after 2000, much of the trade and investment between the two sides reflected the fact that China was a labor-abundant country trying to create as much employment as possible (especially in manufacturing), whereas Africa was resource-rich and relatively underpopulated. That dynamic is changing rapidly because of the shifting demographics in both places, which will create a different foundation for Africa-China economic engagement.

Africa is a remarkably young continent, with about half of its population below the age of 20 (Figure 5.3). The age distribution of Africa's population follows a pyramid shape that is typical at an early stage of industrialization. Fertility remains high, as is traditionally the case in subsistence economies, but infant mortality has declined because of modern medicine and the spread of better health and education services. So there has been a spurt in the population as more children survive. We can be certain that the labor force will increase dramatically in the next 20 years as those currently ages 19 and younger join the labor force. Even though fertility is likely to decline gradually—a trend already observable in some African countries—there is likely to be significant growth of the labor force for a long time. This surge in the working-age population presents both an opportunity and a challenge for Africa. With the right institutions, policies, and global environment, Africa's labor force growth can help drive rapid development on the continent. On the other hand, there is a risk that insufficient job growth will perpetuate unemployment and poverty.

China's demographics are very different from Africa's (Figure 5.4). Only about 20% of China's population is younger than

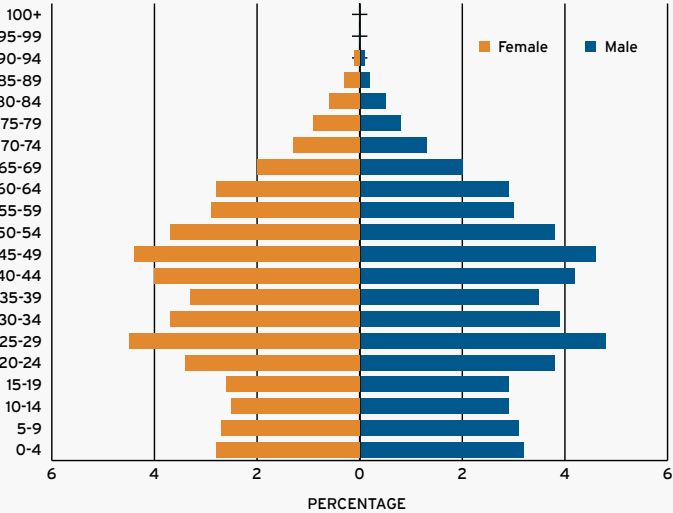


**Figure 5.3: Africa's Population Pyramid, 2016**



Source: UN DESA, Population Division. Accessed March 4, 2016.

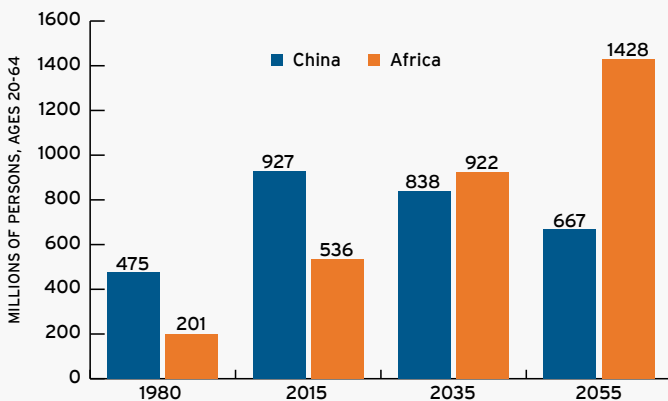
**Figure 5.4: China's Population Pyramid, 2016**



Source: UN DESA, Population Division. Accessed March 4, 2016.

19 years old. The large cohort between the ages of 25 and 54 reflects the rapid population growth of the 1960s and 1970s. This was followed by declines in fertility that resulted partly from better education, improved access to birth control, and urbanization. China's family planning policy, which limited most urban families to one child, accelerated the country's demographic change. China's population has grown significantly in recent decades, especially its working-age population. If we define working age as between 20 and 64 years, this population in China roughly doubled between 1980 and 2015, from 475 million to 927 million (Figure 5.5). Growth in China's labor force was an important factor spurring economic reform and opening in China, and also a key reason those policies yielded such strong growth. For years, China enjoyed what seemed like an inexhaustible supply of labor, which initially entered the global market at very low wages, befitting China's low level of development at the beginning of reform. Even though employment in manufacturing increased rapidly in China after 1980, wages remained low as hundreds of millions of workers moved from poor rural areas to cities. The shifting demographics in China in recent years have driven large increases in wages, which will be discussed further below.

**Figure 5.5: Working-age Population in China and Africa**

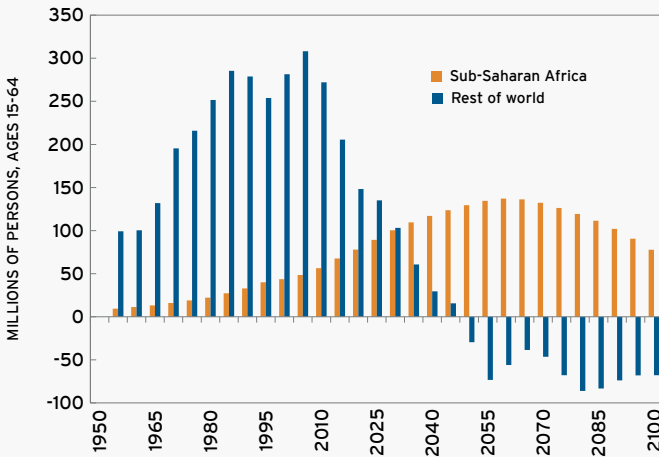


Source: UN DESA, Population Division. Accessed March 4, 2016.

China's working-age population has peaked and is now starting to gradually decline. By 2035, according to UN projections, the working-age population will shrink by about 100 million. As noted, African demographics are moving in the other direction, with Figure 5.5 showing the projected working-age population of the African continent in 2035 and 2055. Over the next 20 years, Africa will undergo the kind of explosive labor force growth that China experienced after 1980. In particular, the working-age population in Africa is projected to rise from 536 million in 2015 to 922 million in 2035. Even if fertility declines, as is projected, there is significant momentum for population growth. Notwithstanding the uncertainty that accompanies long-term forecasts, the UN projection for 2055 shows Africa's working-age population rising to 1.4 billion and China's dropping to 667 million. At a minimum, it is clear that we are transitioning into a period in which China's labor force will shrink—albeit modestly—while Africa's labor force expands dramatically.

China's demographic trends resemble those of other developed economies around the world. The developed nations of Europe, North America, and Japan, as well as Latin America, are all projected to have significantly aging—and in most cases shrinking—labor forces. (The United States is an anomalous case; it can maintain at least slow labor force growth through immigration, and could potentially absorb many more immigrants.) Therefore, Africa will become an increasingly important contributor to *global* labor force growth. In recent decades, Africa contributed about one-seventh of the growth in the global working-age population (Figure 5.6). Most of the labor force growth was concentrated in Asia—not just China, but India and Southeast Asia, as well. By 2035, half of the labor force growth in the world will occur in Africa. Over the next couple of decades, there will still be significant labor force growth in South and Southeast Asia, but that will taper off as those populations age. By 2050, the global labor force outside of Africa will be shrinking, while Africa's working-age population will be increasing by 30 million per year.

**Figure 5.6: Africa's Growing Share of the World's Labor Force**

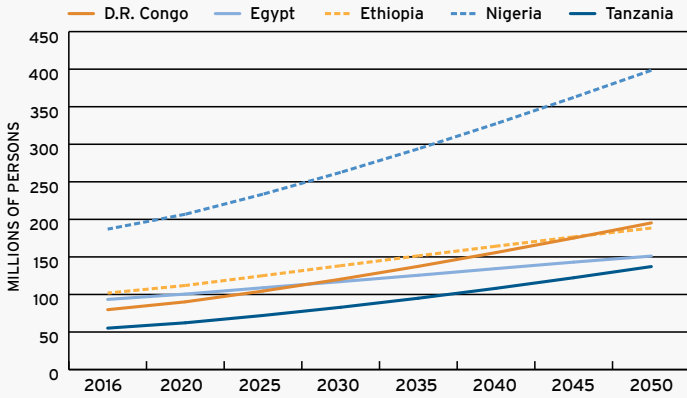


Source: IMF, *Regional Economic Outlook*, Chapter 3, April 2015.

As noted, significant uncertainty surrounds estimates related to 2050 and beyond. But the general demographic trend is clear. As populations in China and the developed world age, they will seek locations to invest their savings, which they will need to support themselves in old age. To keep up with its population growth, Africa needs to create 20 million jobs per year now, and 30 million jobs per year in a few decades. Hence, there is enormous potential for foreign capital and technology to catalyze Africa's economic growth. African countries, of course, have to do their part to realize this outcome. As was emphasized in Chapter 2, there is considerable variation across African countries in the quality of institutions and, as discussed in Chapter 4, severe infrastructural deficiencies span the continent.

What do population and labor force booms mean for individual countries? Figure 5.7 shows UN population projections for the five most populous African countries through the year 2050. The populations of Nigeria and DR Congo, two countries that are currently rated as having rather poor institutions, are projected to grow to 400 million and 200 million,

**Figure 5.7: Projections of Major African Countries' Populations, 2016-2050**



Source: UN DESA, Population Division. Accessed March 4, 2016.

respectively. Ethiopia will also have around 200 million people. Egypt and Tanzania are projected to reach populations of 150 million each.

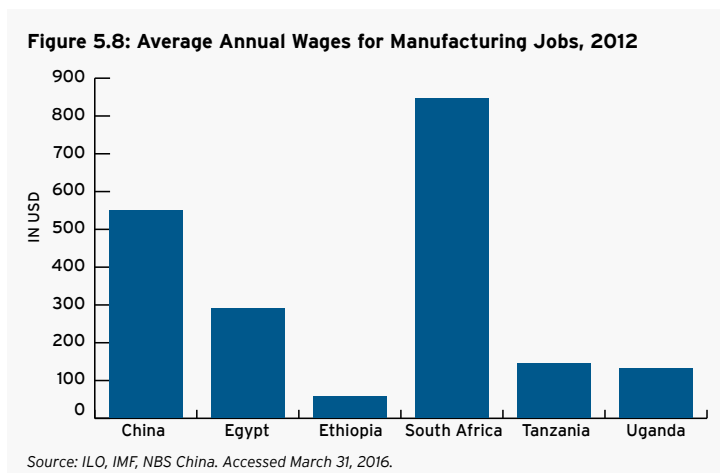
### 5.3: WAGES, EXCHANGE RATES, AND INVESTMENT CLIMATES

The notion of a large volume of manufacturing migrating from China to Africa may seem farfetched, but it is already starting to happen, at least on a small scale. Two other points are worth noting. First, as labor-intensive manufacturing migrates out of China, it will only take a very modest share of it moving to Africa to make a sizeable difference, because Africa is starting out under-industrialized. Second, some African governments, notably Ethiopia, are making a concerted push to improve their investment climates and to attract labor-intensive manufactures, including from Chinese investors.

Up until now, a number of factors have held back Africa's industrialization. One such factor is a weak investment climate, including poor infrastructure and institutions. Beyond that, African wages have not been so low as to be attractive to outside investors. The continent has enough agricultural and mining

resources per capita to keep wages relatively high, which is a good thing. For a long time, resource-poor China had lower wages than much of Africa, helping it secure its position as a powerhouse manufacturer of labor-intensive products. Now, a combination of productivity growth and changing demographics in China is leading to steady wage increases. Although it is hard to find useful cross-country data on wages, what data does exist shows wages in U.S. dollars to be significantly lower in China than in South Africa in 2012 (Figure 5.8). This fact suggests an economic condition known as “Dutch disease,”—identified in Chapter 2 as a partial explanation for Sub-Saharan Africa’s low position in global value chains—whereby resource abundance keeps wages high, making it difficult to develop manufacturing. A similar issue will arise in other resource-rich countries such as Nigeria. Note in the figure, though, that Chinese wages in 2012 were significantly higher than those in Ethiopia, Tanzania, or Uganda, even though none of these countries was especially resource-rich. Since 2012, Chinese wages have continued to rise rapidly, creating opportunities for low-wage African economies if they can establish reasonably supportive investment climates.

It should also be noted that exchange rates play an important role in determining relative wages. When comparing wages



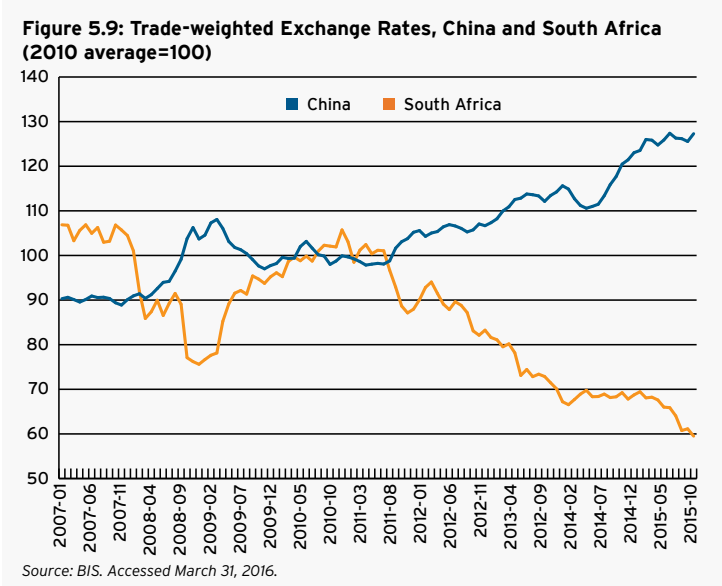
in a common currency such as the U.S. dollar, clearly the exchange rate matters. Most experts agree that China's currency was undervalued in the mid-2000s. China pegged its currency to the U.S. dollar at a rate of 8.3:1 starting in 1994. This was a reasonable choice for a low-income developing country, and it worked well, as the dollar appreciated against other currencies from 1994 until around 2000. China's trade-weighted exchange rate likewise appreciated, as was appropriate for an economy with fast productivity growth. After 2001, however, China's currency followed the dollar down; its trade-weighted exchange rate depreciated despite rapid productivity growth. During this period, China's current account surplus rose above 10% of GDP and the country had to purchase a massive amount of reserves in order to maintain a stable exchange rate with the dollar.

China moved off the 8.3:1 peg in 2005 and, since then, its currency's undervaluation has been corrected. Indeed, the IMF and most international economists have concluded that the yuan in recent times has been neither undervalued nor overvalued. Figure 5.9 shows China's trade-weighted exchange rate index as calculated by the Bank for International Settlements (BIS). China's exchange rate has appreciated fairly continuously, undergoing a cumulative appreciation of 44% on a trade-weighted basis between 2007 and 2015. China induced some market jitters in the summer of 2015 when its currency depreciated modestly against the dollar. But the authorities have made clear that they intend to manage the rate with reference to a basket similar to the one shown in Figure 5.9. (If the dollar rises against the yen and the euro, there may be some yuan depreciation against the dollar, but the goal is to keep the trade-weighted rate fairly stable.) If productivity growth continues in China, one would expect further gradual appreciation of the index.

Unfortunately, South Africa is the only African economy for which the BIS calculates a trade-weighted index, but its experience is typical of resource-rich countries. South Africa's

exchange rate tends to follow the cycle of commodity prices. As Figure 5.9 shows, South Africa's trade-weighted exchange rate was relatively high during the commodity boom period of 2007 to 2011, except for a brief dip during the global financial crisis. Commodity prices fell during the financial crisis but quickly rebounded because of China's massive stimulus program. The end of the commodity boom around 2011 signaled the beginning of a gradual decline in the exchange rate, with a cumulative depreciation of around 40% between 2011 and 2015. This demonstrates another mechanism through which Dutch disease occurs. High commodity prices tend to cause the currencies of resource-rich countries to appreciate, making it difficult for those countries to be competitive in non-resource sectors such as manufacturing. As commodity prices decline and exchange rates depreciate, the non-resource sectors become more attractive avenues for investment.

It is notoriously difficult to predict commodity prices, but, as discussed earlier, there is good reason to think that commodity prices will not increase in the foreseeable future. Most





African economies now maintain flexible exchange rates. Depreciation of their currencies helps them adjust to the end of the commodity boom and also stimulates manufacturing in a relative sense. As has been emphasized, African economies vary in their resource abundance. The direct relationship between commodity prices and exchange rates is clearest for countries such as Nigeria and South Africa. But the resource-poor economies are also affected because they sell to the big, resource-rich ones. Hence, depreciation has been common across the continent in recent years.

In short, the rise in wages in China and the high value of its currency on a trade-weighted basis create opportunities for African economies to attract some of the labor-intensive manufacturing that is starting to leave China. A lot of that manufacturing will move to Vietnam or to other nearby economies with low wages, but Africa is beginning to attract some as well. A key issue here is investment climate. Low wages and competitive exchange rates will not make much difference without reliable power and transport links, or in the face of suffocating bureaucracy and corruption. On this point, Ethiopia's experience is instructive. Ethiopia is making a deliberate effort to attract Chinese manufacturing by developing industrial zones with sufficient, reliable infrastructure and by improving the investment climate. It received a World Bank loan to help develop the Bole Lemi Special Economic Zone outside Addis Ababa, as well as a new industrial hub in Kilinito, 20 miles south of the capital.

Over the last couple of years, Ethiopia has attracted 15 major Chinese investment projects in sectors such as textiles and electronics. The firms are attracted by low wages, improving infrastructure, and Ethiopia's duty-free access to the U.S. market through the African Growth and Opportunity Act. Most of these are medium-sized investments of US\$5 million to US\$20 million. Although the total number of firms investing is small, their cumulative economic impact seems to be significant. Industry only accounts for 14% of Ethiopia's GDP, but it

increased at a 21% rate between 2013 and 2014. Starting from such a low base, even a modest amount of activity can have a large effect. Notably, Ethiopia's overall economy grew at about 10% per year in 2013 and 2014. The fall in commodity prices has slowed growth somewhat, but Ethiopia's economy still grew by faster than 8% in 2015 and 2016.<sup>50</sup>

Natural resources were a key reason that China stepped up its economic engagement with Africa starting around 2000. China's investment-intensive growth model needed natural resources, and Africa possessed an excess relative to its population. Going forward, however, the economic basis for the Africa-China relationship should shift to human resources. China has less need for natural resources as its growth model adjusts toward consumption, and its labor force is destined to shrink because of demographic trends. Africa, on the other hand, is set for a labor force explosion. It could be an important destination for Chinese investment, though getting to that positive outcome will require change both on the African side and the Chinese side.

## CONCLUSIONS AND RECOMMENDATIONS

China's economic engagement with Africa is a complex issue with many facets. It is usually difficult to find good and comprehensive data on low-income countries, and much of Africa is low-income. This general problem is compounded by a tendency toward non-transparency on the part of the Chinese government and China's SOEs. In general, China's engagement with Africa is a win-win scenario for both sides, so it would make sense to be more forthcoming with information. Still, there is enough available information on and research into China's trade, investment, and migration vis-à-vis Africa to draw some tentative conclusions and to make some recommendations for African countries, China, and the West. Specifically, this study draws six main conclusions.

The first tentative conclusion relates to the scale of China's activities in Africa. The media often portrays China's involvement as enormous, potentially overwhelming the continent. To be fair, China does not always help its image in this regard. When Xi Jinping participated in the latest China-Africa summit in South Africa in December 2015, he pledged US\$60 billion of support for African development. This is a big, general commitment covering many different areas and potentially disbursing over many years. Almost certainly, some of the plans will never pan out. In terms of realized Chinese investment in Africa, the amounts are significant enough to contribute to African growth but not at the huge scale that some media coverage suggests. According to data from MOFCOM,

the stock of Chinese direct investment in Africa was US\$32 billion at the end of 2014. This would represent less than 5% of the total stock of foreign investment on the continent. However, about half of Chinese outward investment is reported as going to Hong Kong, even though much of this transits to other locations. In other words, MOFCOM's figures for Chinese investment in different countries may be lower than in reality. But even if one doubled the estimate of Chinese outward direct investment in Africa, China's share of overall ODI would still be modest.

Stocks naturally change slowly. But the *World Investment Report 2015* similarly finds that China's share of inward direct investment flows to Africa during 2013 and 2014 was only 4.4% of the total. Of course, direct investment is not the only form of foreign financing. The Export-Import Bank of China and China Development Bank have also made large loans in Africa, mostly to fund infrastructure projects. In recent years, Africa has received about US\$30 billion annually from outside sources for infrastructure projects, and China has provided about one-sixth of that financing. In short, Chinese financing is substantial enough to contribute meaningfully to African investment and growth, but the notion that China has provided an overwhelming amount of finance and is buying up the whole continent is inaccurate.

The second main finding from the study concerns China's direct investment and governance. China has drawn attention by making large resource-related investments in countries with poor governance indicators, such as DR Congo, Angola, and Sudan. These deals are certainly part of the picture when it comes to China's engagement with Africa; MOFCOM data show large stocks of Chinese investment in those countries. But the more general relationship between Chinese direct investment and recipients' governance environments is different. After controlling for market size and natural resource wealth, total foreign direct investment is highly correlated with measures of property rights and rule of law, as one might expect.

This is true both globally and within the African continent. China's ODI, on the other hand, is *uncorrelated* with measures of property rights and the rule of law after controlling for market size and natural resource wealth. In this sense, Chinese investment is indifferent to the governance environment in a particular country. Again, this is true both globally and across the African continent. While China has investments in DR Congo, Angola, and Sudan, those are balanced by investments in African countries that have relatively good governance environments. South Africa, for instance, is the foremost recipient of Chinese investment. But because Western investment tends to avoid the worst governance environments, Chinese investment is *relatively* high in those locations.

A third main finding emerges from examining MOFCOM's database on Chinese firms investing in Africa. In the aggregate data on Chinese investment in different countries, the big state enterprise deals naturally play an outsized role. MOFCOM's database on Chinese firms investing in Africa, on the other hand, provides a snapshot of what small and medium-sized Chinese firms—most of which are private—are doing in Africa. Unlike the big SOE investments, these firms are not focused on natural resource extraction. The largest area for investment is service sectors, with significant investment in manufacturing as well. Many African economies are interested in attracting Chinese investment in manufacturing and services and welcome this development.

The fourth finding relates to infrastructure finance. Africa has well-known infrastructure deficiencies, but in recent years infrastructure financing has expanded and helped many African countries begin to rectify these deficiencies. Much of the funding for this will have to come from domestic sources, but foreign financing can play a useful, complementary role. As noted above, in the past few years Africa has received about US\$30 billion annually in external finance for infrastructure. China is providing about one-sixth of this amount. Chinese financing is a useful complement to other sources, particularly as

traditional finance from multilateral development banks and bilateral donors is concentrated on water supply and sanitation. Likewise, private participation in infrastructure is primarily aimed at telecommunications. China has filled a niche by focusing on transportation and power.

Chinese financing of infrastructure has also enabled Chinese construction companies to gain a firm foothold on the continent. Evidence suggests that Chinese companies have become highly competitive, crowding out African construction companies. This is an area where a tradeoff seems to exist between, on the one hand, getting projects completed quickly and cheaply and, on the other, facilitating the long-term development of a local construction industry.

This point leads to the fifth finding of the study. There are a lot of Chinese workers in Africa; the total is disproportionately high when compared to the amount of financing that China has provided and compared to migrants from other continents. This is a tentative conclusion because the data on this issue are particularly weak. But estimates of Chinese migrants in Africa exceed one million. Many migrants initially move to Africa as workers on Chinese projects in infrastructure and mining and then, perceiving good economic opportunities, stay on. Similar to the dilemma confronting the continent's construction industry, African countries face a tradeoff here: Chinese workers bring skills and entrepreneurship, but their large numbers limit African workers' opportunities for jobs and training. The popular notion that Chinese companies only employ Chinese workers is not accurate, but the overall number of Chinese workers in Africa is large, and it is not clear that all of these workers are on the continent legally.

A final important finding of the study is that the foundation for the Africa-China economic relationship is shifting. China's involvement in Africa stretches back decades, but the economic relationship accelerated after 2000, when China's growth model became especially resource-intensive while its

domestic supplies of energy and minerals were dwindling. In the early 2000s, China was poor in natural resources but boasted a rapidly growing labor force that gave the country comparative advantage in manufactures. By contrast, Africa was relatively resource-rich, with a labor force significantly smaller than China's. It was logical for China to import natural resources from Africa, and demand from China drove up prices and trade volumes. It was also natural for China to export manufactures to Africa.

These patterns of trade and investment are now likely to gradually shift in response to changing demographics. The working-age population in China has peaked and will shrink over the coming decades. This has contributed to a tightening of the labor market and an increase in wages, which benefits Chinese people. Household income and consumption are also rising. At the same time, China's old growth model, which focuses on exports and investment, is running out of steam. China is already the largest exporter in the world, and it is unrealistic to expect its exports to grow faster than world trade, so exports have become a lagging sector for China. And after years of high investment, China now faces excess capacity in real estate, manufacturing, and infrastructure. Chinese growth has entered a phase in which consumption is growing faster than investment, and the expansion of consumption primarily benefits services, not industry. Compared to past trends, China's changing pattern of growth is less resource-intensive, so China's needs for energy and minerals are relatively muted. At the same time, China is likely to be a steady supplier of foreign investment to other countries, and part of that will involve moving manufacturing value chains to lower-wage locations.

Africa's demographics are moving in the opposite direction. In fact, they resemble China's at the beginning of its economic reform 35 years ago. About half of Africa's population is below the age of 20, which means the working-age population will surge over the next 20 years, and will probably continue growing until the middle of the century or later. Roughly

speaking, Africa needs to create about 20 million jobs per year to employ its expanding workforce. Twenty years from now, it will need to create 30 million jobs per year. Africa's demographics present both an opportunity and a challenge. It is unrealistic to expect the China-Africa economic relationship to change overnight. Nor would it be reasonable to expect large volumes of Chinese manufacturing to move to the continent in the near future; it would be more natural for value chains to migrate from China to nearby locations such as Vietnam and Bangladesh. But if even small amounts of manufacturing shift, this could make a significant difference for African economies, which are starting out with an extremely low base of industrialization. And it is useful to have a long-term vision that an economic relationship that started out very much centered on natural resources should shift over time to a greater focus on human resources.

While these findings are tentative given the weakness of some of the underlying data, it is still possible to make some fairly robust recommendations for African countries and their civil societies, for China, and for the West, which has been mostly critical of the deepening Africa-China relationship.

The first recommendation for African governments is to work with China to produce better data on all aspects of the economic relationship. This is most important as it relates to migration, as there are widely varying estimates on the number of Chinese workers in Africa. African governments should track and publicize how many work visas they grant. They should also carefully track and publicize how much foreign debt the country has taken on, both with and without a sovereign guarantee. African countries generally have low debt burdens following previous write-offs by Western governments and international institutions. This puts them in a good position to take on moderate levels of additional debt, but it is important to guard against the reemergence of unsustainable debt. The amounts and terms of loans for infrastructure and investments in mining should be easily available to the public



so that citizens can judge for themselves the costs and benefits of different projects.

As highlighted, despite problems with the data related to Chinese workers in Africa, there seem to be many such workers. Given the immigration laws in place, it seems unlikely that all of them are in Africa legally. A second strong recommendation for African governments is to do a better job of managing the inflow of labor into their economies. As mentioned above, a real tradeoff exists here, as Chinese migrants bring skills and useful connections to the Chinese economy. However, throughout its own development, China severely limited the number of workers that foreign investors could bring as part of their projects, instead requiring those investors to train the local labor force. African countries would do well to study these practices and try to manage their labor inflows. Ideally, worthwhile projects can move ahead while maximizing the positive impact on the local labor market.

Africa needs to create more jobs to keep up with its rapid population growth. High commodity prices and an export boom supported African economies over the past decade, but it is likely that the big commodity cycle has ended for the foreseeable future. Compared to the recent past, it is both more important for African economies to develop manufacturing and tradable services, and more feasible. Chinese wages have risen substantially, and exchange rate movements have also improved African competitiveness. It will be no simple task, however, to attract manufacturing and service investments from foreign and domestic firms. Therefore, a third priority for African countries is to improve investment climates. Wages and exchange rates are not enough to make a location competitive. Good infrastructure in power, transport, and telecommunications is also needed, as is the “software” of integration: efficient customs administration, reasonable control over corruption, and secure property rights.

China’s large-scale economic engagement in Africa is still a relatively recent phenomenon, and it makes sense that the

engagement would evolve based on experience. Some recommendations for the Chinese government and Chinese firms include:

First, China should reconsider its big mining investments in poor governance environments. These investments by state enterprises are generally not working out. SOEs are playing with the public's money and seem to be wasting quite a bit of it. China will be better served if more of its outward investment is carried out by the private sector, which is likely to earn better returns, just as it does within China. In addition to the poor results from some of these resource investments, it is now clear that China's appetite for natural resources will remain muted compared to the 2000s, so there is no longer the same need for risky investments in these areas.

Second, China should work with African governments to encourage Chinese firms to hire and train African workers and to limit the flow of labor to amounts designated by African countries. Movements in wages and exchange rates help with this adjustment. It is becoming expensive to send a worker from China to Africa, so companies have growing financial incentives to hire locally.

China has played a useful role in countries such as Ethiopia by setting up industrial zones, financing infrastructure, and encouraging Chinese firms to move some manufacturing production to Africa. A third recommendation is for China to step up this kind of engagement, an effort that would align with Chinese leaders' tendency to take a long-term perspective. Throughout the near future, the labor force in South and Southeast Asia will continue to increase, and these will be natural sites for labor-intensive manufacturing. But over time, Africa will become the world's primary source of net labor force growth. Africa and its partners stand to benefit if economies there diversify into manufactures and tradable services. Through infrastructure and direct investment, China can play a critical role in this process.

Meanwhile, Western governments and the media have been largely negative about China's engagement with Africa. A first recommendation for Western audiences is to take a more balanced and objective view toward a phenomenon that is naturally complex and multifaceted. The fact that public opinion surveys in Africa mostly reflect positive attitudes about China is important. If Chinese involvement were largely detrimental, that would suggest that African populations do not know where their interests lie. It is much more likely that China's trade and investment provide benefits to African economies and that people on the ground correctly perceive this. Given the tremendous need for infrastructure and job-creation in Africa, Western audiences should be pleased that China's efforts are helping to alleviate these pressures.

A second recommendation for Western governments is that they step up their existing efforts to strengthen governance in African countries. This includes providing technical assistance to help government and judicial systems operate more efficiently, as well as helping strengthen civil society. Mining and infrastructure projects carry environmental and social risks no matter the funding source. There are plenty of examples of Western companies whose investments have led to environmental and social problems. The utility of finance depends to a large extent on the quality of governance both at the national and local levels. This is a long-term objective; there is no simple recipe for improving governance. But for Western audiences to sit back and criticize various Chinese-African collaborations is unhelpful and typically not appreciated by African audiences. Providing more support to improve governance would be a constructive alternative.

The third recommendation for Western governments is to be more welcoming of China and other developing countries as they seek to become leading players in existing IFIs. Many of the practices of the World Bank and regional banks, including the African Development Bank, reflect the preferences of developed countries. This system has evolved because of the

dominant role developed countries have played in financing these institutions, particularly in providing the subsidized loans and grants on which low-income countries rely. But the world economy is changing. The share of the world economy made up by China and other emerging markets has risen enormously over the past couple of decades, whereas governance of IFIs has been much slower to change. The creation of the Asian Infrastructure Investment Bank under Chinese leadership signals that China wants to more actively shape the global financial architecture. It would be smart for the United States and other Western powers to welcome this kind of initiative from China. There will naturally have to be some evolution of global institutions to reflect a more diverse set of preferences, but doing so has the potential to make institutions more effective, and certainly more representative and legitimate. The alternative—moving to a world with competing economic institutions and blocs—is far less attractive. African countries do not want to choose between China and the West, and there is no reason that they should have to.

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## ENDNOTES

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