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“Going Global in Groups”: Structural Transformation and China’s Special Economic Zones Overseas

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Summary. — China’s special economic zones helped the country industrialize by attracting foreign investment. In 2006, Beijing initiated an overseas trade and cooperation zone program, assisting Chinese companies to invest abroad while also building China’s soft power through the transfer of a key component of China’s development success. Little is known about the 19 zones approved so far under this program, or the impact they are likely to have on structural transformation and industrial development in their host countries. This paper identifies the 19 zones and their proposed locations, the process of selection, developers, implementation, and the Chinese incentive regime. It then focuses on the African zones. Using a typology of factors that have proven critical for zone development in the past, the paper evaluates the potential of these zones for fostering structural transformation in Africa.

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1. INTRODUCTION

In the space of a decade, China’s economic rise has begun to transform the global economic landscape. China’s emergence as a global economic power is both a threat and an opportunity for structural transformation in Africa. Real and potential economic threats have been telegraphed by media headlines that deplore the impact of Chinese imports on weak industrial sectors, as well as concerns that Chinese investment in natural resources will further “lock” Africa into its traditional role as a raw material exporter (Amsterdam, 2012). At the same time, however, econometric studies suggest a more nuanced picture. Chinese growth may act indirectly as an engine of poverty reduction. Researchers at the OECD found that for every 1% rise in Chinese growth, some 7.7 million people outside China were raised out of poverty (Garroway, Hacibedel, Reisen, & Turkisch, 2012). Weisbrod and Whalley (2011) calculated that Chinese investment, and not simply demand for commodities, had a significant positive impact on growth in sub-Saharan Africa.

Growth is not the same as economic development, however. It may have no relationship to the kinds of activities that will underpin a sustained move up the ladder. For most African countries, structural transformation will likely encompass, at first, a shift of labor and economic activity from low-productivity agriculture to labor-intensive manufacturing. The critical question then becomes: what impact will Chinese engagement have on African manufacturing?

This paper focuses on one aspect of Chinese engagement: overseas special economic zones. While Chinese officials have authorized support for 19 zones worldwide, six of these zones are being built in Africa and most focus primarily on

manufacturing. Given the lack of data on the zones, our methodology is qualitative. We establish a baseline from which their progress can be viewed, over time. To do this, we rely on multiple visits to the zones, their developers, and their African hosts in Egypt, Ethiopia, Mauritius, Nigeria, and Zambia, interviews with the developers in China, and a close review of existing information on the developers’ websites and other primary and secondary sources. In our analysis, we consider the potential of these zones to contribute to Africa’s structural transformation, while cautioning that given their early stage of development, any conclusions must be regarded as preliminary. The next section of the paper places these zones in context by a brief analysis of the various channels through which China’s rise could be affecting African structural transformation. We then turn to a review of the debates over the utility of overseas economic zones as instruments of economic development. An overview and analysis of the zones to date follows, and a final section concludes.

2. CHINA AND AFRICAN MANUFACTURING

China’s rise can affect African manufacturing through a number of competing channels, as several recent studies have demonstrated (Kaplinsky & Morris, 2009; Morris & Einhorn, 2008; Power, 2008; Wood & Mayer, 2011). At one level, Chinese imports provide competition for local firms. As noted below, this competition can be devastating in some countries and

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some sectors, driving local firms out of business. Yet as Schumpeter noted with the phrase “creative destruction,” capitalist competition can also be developmental. Another channel affecting African manufacturing comes through the sale of China’s competitively priced machinery and equipment. Third, trade incentives provided through China’s zero-tariff program could help stimulate manufactured exports, in ways similar to Europe’s “Everything but Arms” (EBA) trade preference program and the United States’ African Growth and Opportunity Act (AGOA). Finally, Chinese firms can invest in joint ventures or solely owned manufacturing firms in Africa. If this were to follow Asian experience, Chinese firms could be catalysts for local firms to move into manufactured exports, although they can also be footloose investors, moving on with only fleeting impact on manufacturing (Bräutigam, 2003; Rotunno, Vézina, & Wang, 2012).

The “competition leading to destruction” channel has received the lion’s share of media attention. In 2009, China exported \$3.1 bn in garments and \$1.42 bn in footwear to Africa, and both categories registered increases: 2.3% and 11.4%, respectively (State Council, 2011). It is easy to find anecdotes about the closure of textile factories in Africa that have succumbed to Chinese competition. Between 2004 and 2008, for example, seventeen Nigerian fabric factories closed, six of which employed more than a thousand workers each (Gabriel & Ahiuma-Young, 2008). Surveys of the Ethiopian shoe industry point to a more nuanced outcome. There, microenterprises in the informal sector suffered most from Chinese import competition, but a significant number of small, medium, and large enterprises fought back by upgrading their capabilities. As a result, some became exporters for the first time (Gebre-Egziabher, 2009; Redi, 2009; Sonobe, Akoten, & Otsuka, 2009).

Chinese competition is also likely to have affected African exports in third markets: the United States and Europe. For several decades, the Multi-fiber Arrangement (MFA) imposed a quota system on textile exports from countries like China, allowing space for domestic textile production and imports from other textile exporting countries. After the MFA ended on January 1, 2005, exports of clothing from Mauritius, Madagascar, Lesotho, and Kenya—four of sub-Saharan Africa’s major exporting countries to the United States and Europe—stagnated or fell (US Department of Commerce, 2011; WISER, 2011). However, in at least one of these countries, Madagascar, other factors compounded the problem. A December 2009 coup, and related sanctions imposed by the United States, caused a collapse in garment exports (Easterly & Freschi, 2010). Others have argued that the decline in exports from some southern African countries can be traced in part to an exit by Chinese manufacturers who had invested locally, but could no longer compete with their compatriots located in Asia (Rotunno *et al.*, 2012).

More generally, however, data from across Africa point to a highly uneven pattern of manufacturing growth. In the aggregate, sub-Saharan African countries have experienced a long term relative decline in the percentage of their GDP coming from manufacturing, from 17.5% in 1965 to less than 15% in 2005 (Lin, 2011). Yet this masks important temporal and spatial variation. For example, between 2005 and 2008, despite facing a common challenge of imports from China, manufacturing in sub-Saharan Africa grew by an average of 5% annually, until the impact of the global financial crisis in 2009. Moreover, value added, adjusted for inflation, grew every year between 2005 and 2011, with the sole exception of 2009.¹ On the other hand, manufacturing activity varies, with some

countries experiencing rapid growth (often from a low base) while others have stagnated or declined.

Some of the manufacturing growth may be due to an increase in Chinese manufacturing investment in Africa. The proportion of Chinese outward bound foreign direct investment in the manufacturing sector has increased sharply in recent years. In 2010, Chinese outward FDI in manufacturing came to \$4.7 bn, compared with mining at \$5.7 bn (Statistical Bulletin, 2010). Sectoral investment flows are not generally disaggregated on a regional basis, but the Chinese announced that Chinese investment in African manufacturing from 2009 to 2012 made up \$1.33 billion, and accounted for 15.3% of investment stocks by the end of 2011 (State Council, 2013). These figures help explain why the export of equipment and machinery is one of the fastest growing sectors in Chinese exports to Africa.

In addition, the Chinese government offers indirect incentives for Chinese manufactures to shift their production to Africa through the program granting tariff-free entry to more than 400 products from Africa’s low income countries, including a wide variety of manufactured goods such as motor vehicle spare parts, diesel generators, gardening tools, knit clothing, and leather wallets (Freemantle & Stevens, 2010). As a Chinese ambassador pointed out: “This policy does not only encourage Chinese enterprises to invest in Africa . . . people all over the world who invest in Africa can enjoy this treatment” (Lin, 2010).

Finally, the Chinese government is backing the construction of six overseas special economic zones in Africa, part of a global program that has seen 19 zones selected for support. These special economic zones, called “trade and economic cooperation zones” in official announcements, were apparently positioned to serve several strategic objectives for China. First, they could help increase demand for Chinese-made machinery and equipment, while making it easier to provide product support. Second, by producing overseas and exporting to Europe or North America, Chinese companies would be able to avoid trade frictions and barriers imposed on exports from China (Xinhua, 2006). Third, they could assist China’s efforts to boost its own domestic restructuring and move up the value chain at home (Xu, Li, & Wang, 2006). Fourth, they were intended to create economies of scale for overseas investment, and in particular, to assist less experienced small and medium-sized enterprises to venture overseas “in groups” (Bo, 2007; Fu, 2007). Finally, fifth, they were viewed as a way to transfer one element of China’s own success to other developing countries. This aspect of Chinese engagement would in theory be helpful for recipient countries, while also benefiting China (Bräutigam and Tang, 2011a, 2011b, 2012).²

The idea of setting up special economic zones and industrial clusters overseas to serve as magnets for manufacturing firms to venture outward is not original to China. Developing countries in Asia, including China, host perhaps dozens of industrial zones under various regulatory and incentive regimes, some built by Japanese trading companies like Sumitomo. Trading companies have worked in partnership with sending country governments to encourage regional production chains (Hatch, 2010).

The idea that industrial clusters can promote structural transformation has a long history. Porter (1990) popularized the idea in *The Competitive Advantage of Nations*. Economists have emphasized that clusters take advantage of agglomeration economies, economies of scale, reduce transactions, and search costs (Greenwald & Stiglitz, 1986; Krugman, 1991; Lin & Monga, 2011)

Overseas industrial zones in Asia have sometimes served to illustrate the “flying geese” pattern whereby developing countries first import a particular product such as automobiles, then begin to assemble and produce parts of the product, and finally move to become exporters of the product (Akamatsu, 1962; Kojima, 2000). The flying geese model illustrates in a stylized manner how structural transformation happens in a particular product cycle. As an exporter now moving up its own value chain, China can be expected to play a growing role in the transformation of manufacturing sectors outside its territory, just as Japan, Korea, and Taiwan did in earlier decades (Bräutigam, 2008; Lin, 2011). Do China’s overseas zones have the potential to play a key role as agents of structural transformation?

This paper provides an initial review of the six zones in Africa, in comparative context. It is based on ongoing fieldwork in China, Ethiopia, Egypt, Nigeria, Mauritius, and Zambia, beginning in 2007. We first outline the model being adopted in these zones, and then compare the African zones with each other, and with “best practice” in special economic zones. All of the Chinese zones in Africa are at an early stage of implementation, and thus our analysis must be regarded as preliminary. Most are still building their initial infrastructure, although several are already hosting some manufacturing firms. We outline the contributions they are making and are likely to make. Finally, we outline the challenges these zones face if they are to become significant players in Africa’s structural transformation.

3. SPECIAL ECONOMIC ZONES AND STRUCTURAL TRANSFORMATION

Zones begin as arenas for employment and new investment. To be development catalysts rather than enclaves of low wages, zones need to be linked to the domestic economy, provide significant opportunities for domestic participation, knowledge-sharing, innovation, and skills development. The architect of China’s economic reform and special economic zones, Deng Xiaoping, once said “the SEZ is a window, a window of technology, a window of management skill, a window of knowledge . . . from SEZs we can bring in technology, acquire knowledge and learn management skill” (People’s Daily, 2009). Zones in East Asia have led the climb up the value chain. Over two decades, labor-intensive industries fell from 40% or 50% of the turnover in South Korean and Taiwanese zones to about 10% in the mid-1990s; by then, technology-intensive industries contributed over 80% (Omar and Stoeber, 2008; White, 2011). In China, SEZs started with labor-intensive processing and assembling activities. It is still rare to find technology-intensive companies in the zones, although some, like telecommunications giants Huawei and ZTE, are based in China’s largest zone, Shenzhen.

(a) *Creating employment, building manufacturing*

In economies that are largely agrarian or based on mineral exports, zones can foster new manufacturing investment and expand employment. These are steps toward structural transformation, even if very preliminary steps. Still, history shows that some zones in Africa have not been successful even at these basic tasks. A zone in Senegal was closed down after 25 years in operation; it had only attracted 14 firms (Kanjungu, 2010). In more positive cases, zones have served to stimulate basic manufacturing transitions. In Mauritius, manufactured exports rose from 25% of total export value in 1980

to two-thirds in 1990, ending sugar’s dominance (Auty, 2011: 215). In other cases, although zones have expanded manufacturing employment, they have not been able to push the economy through the next steps. In the Dominican Republic (DR), employment in the Free Zones reached 200,000 at the turn of the century, about 35% of total manufacturing jobs, but then declined to 120,000 over the decade (Burgaud & Farole, 2011: 171). The DR failed to foster linkages with the local economy, and neglected innovation, and synergies that could have formed through targeted clusters and skills development.

(b) *Building linkages: fostering local innovation and technology transfer*

Zones can foster innovation in local technology and management practices. Because of their preferential policies and improved facilities, SEZs have advantages in attracting enterprises with sophisticated technologies. Many of the more successful SEZs proved to be catalytic agents for their countries, absorbing technologies from abroad and gradually building up domestic R&D capacities by attracting foreign investment (White, 2011: 190–1). In China, investments that brought in higher technologies enjoyed more privileges than other investments (State Council, 1984). If the match between the level of technology used in the zone and that in the domestic economy is too sophisticated, however, backward linkages will be difficult to establish. Encouraging zone firms to source materials, inputs, and components locally is a starting point, however, it is likely to take time to bring local producers up to the level of quality, speed, and consistency that the foreign investor’s existing suppliers can provide (Shrank, 2001).

East Asian countries have been particularly successful in promoting backward linkages and making these cost-effective for firms in the zones. Jenkins, Esquivel, & Felipe Larrain (1998) note that South Korea gave local companies supplying EPZ factories preferential access to intermediate and raw materials, while Taiwan provided special technical assistance and guidance to potential local suppliers and subcontractors (as cited in White, 2011). Chinese zones encouraged foreign high-tech companies to establish joint-venture with local partners so that the new enterprises could have strong local connections (State Council, 1984). Some zones, like Kunshan Economic and Technological Development Zone (KETD), organized discussions for domestic enterprises and foreign investors in the zone to promote cooperation between the two parties (Wang & Hu, 2010). Encouraging connections between firms and local universities so that their research can target problems that are relevant to zone firms can also strengthen the ability of a country to absorb new technologies.

Fostering clusters is one proven method of stimulating innovation and linkages. An important strategy used in China was to study the value chain of foreign investors in a zone and attract related foreign and domestic suppliers to move to the zone, too. In KETD, originally a rural township 40 km away from Shanghai, a zone official decided to disassemble his laptop, study which components were not being produced in Kunshan, and attract those manufacturers to move into the zone. As a result, a complete IT industrial chain was quickly forged in KETD (Wang & Hu, 2010: 143–44). The Kunshan government even set up special supplier districts to support the KETD, and KETD held yearly forums for domestic suppliers, giving awards to the best performers and promoting the exchange of experiences among firms. Sometimes a large firm can pull in its own suppliers directly. After Motorola settled down in Tianjin’s TEDA zone, a number of its suppliers also set up factories in the zone (Liu Jing, 2004). In this

manner, the zones have not only increased local manufacturing value-added, they have moved the whole value chain from overseas to China.

(c) *Building linkages: skills development*

Of equal importance is local training. Companies in a zone usually provide on-the-job training for local employees. Learning on the job from experienced foreign managers can build management skills for local managers. Overseas training in the parent company is another path. The role played by Korean conglomerate Daewoo in stimulating the birth and growth of Bangladesh's garment cluster through its relationship with a local firm, Desh, has been well documented (Rhee, 1990). Daewoo brought 130 Desh workers to Korea to be trained in the skills of export garment manufacture. A large number of these workers later left to establish their own firms, forming the nucleus of a garment export industry that rose to encompass 4500 firms, employing almost 2 million Bangladeshis (Shakir & Farole, 2011). Encouraging managers and skilled employees to start their own firms, initially as sub-contractors, can also help diffuse skills. Zones where foreign firms have robust interactions with training institutes, research centers and universities, and circulation of managers and skilled workers are far more likely to stimulate broader economic transformation beyond the zone (White, 2011).

In China, the government and state-owned enterprises assigned senior managers to work in joint-ventures in the zones for a period and then moved them to other Chinese SOEs, capitalizing on the experience they acquired (Department of Organization, 2000). Moreover, in 1994 China established a joint economic zone with Singapore in Suzhou in order to learn from Singapore's expertise in zone management. By 2008, more than 2,000 Chinese officials had been trained by the Singaporean partner, while about 20,000 officials from different parts of China visited the zone each year to study the "Suzhou model" (Zhao and Farole, 2011).

(d) *Infrastructure and urbanization*

If SEZs become a major engine for a country's development, improvement of the zones' facilities may accelerate structural transformation on a national basis. Jebel Ali Free Zone in Dubai was set up around the Jebel Ali port, the largest man-made harbor in the world. In order to meet the demands of the rapidly growing zone, the developer DP World plans to increase the capacity of the port by more than seven times, making it the world's largest container port and a key driving force for Dubai and UAE's future development (Halcrow, 2011).

In China, zones have created not only new infrastructure, but totally new urban areas. Developers commonly designated part of the zones for mixed residential use, a feature that enhanced convenience for managers and workers, diversified income sources and created synergies between industrial investment and urbanization. In just 30 years, Shenzhen, China's first SEZ, has grown from a fishing village into a modern city with over 10 million residents.

All Chinese zone developers and local governments understand that the basic design of a zone requires them to rapidly provide "three connections and one leveling": i.e. connections to local road networks, electricity, and water, plus ground leveling. With these as a starting point, some zones began to advertise their "five connections" (adding gas and telecoms) or "seven connections" (a local post office or express delivery services, and heat). Further, the construction of port facilities for China's early coastal zones raised China's overall shipment

handling capacity. In some countries, governments set up zones in remote areas, hoping to create new growth poles. As the poor site location entails heavy expenditure and high business costs, the zones are not economically efficient (FIAS, 2008: 50).

(e) *Policy experimentation*

Special economic zones offer a way for countries moving toward the market, or with political resistance to transformational policies on a national level, to experiment, acting as incubators of transition (Litwack & Qian, 1998). In China, innovative methods like one-stop service were first implemented and tested in the SEZs before being generally adopted. Successful practices to attract investment and increase exports can later be applied to the rest of the economy. Most of the incentives which the SEZs had at the beginning of the reform era have now become common policies across China (Xinhua, 2010). However, a World Bank study cautioned that zone programs can also slow down economy-wide reforms, allowing government to "muddle along" on the basis of increased exports and employment (World Bank, 1992: 3). It is important to keep in mind, as well, that the SEZ program even in China was experimental, that not all of the SEZs were successful, and that many zones were redesigned and rethought as they grew and developed.³

4. CHINA'S OVERSEAS ZONE PROGRAM

China's overseas zone program was launched as one of the country's instruments of "mutual benefit," something that would assist other countries to establish value chains and manufacturing prowess, while helping China's restructuring. They adopted an experimental design, and their implementation has been performance-based.

(a) *Design and management of the overseas zone program*

As it became clear that special economic zones were helping to foster structural transformation in China, other countries and Chinese companies began thinking about how China's experience might be exported. As early as 1994, the Chinese government received a request from the Egyptian government to provide assistance setting up an economic zone in the Suez region. The Chinese appliance firm Haier built an overseas industrial park in Camden, South Carolina in 1999, and launched another near Lahore, Pakistan, with a Pakistani company, Panapak Electronics, in 2001. A Chinese company began to construct a mineral processing industrial zone in the Chambishi area of Zambia in 2003 (Bräutigam, 2011).

All of these early efforts accelerated in the new millennium, as China joined the World Trade Organization in 2001 and launched the 2001–05 Plan, which emphasized industrial restructuring. The government accelerated incentives and programs to help Chinese companies globalize. This outward expansion, known as *zouchuqu* (often translated as "going global"), involved a number of experiments as well as an expansion of finance through China's state-owned banks. With Chinese companies already taking the initiative to set up zones abroad, much as Japanese companies had been doing in Asia, the Chinese Ministry of Commerce decided to set up a program to support the establishment of up to fifty foreign economic cooperation and trade zones in other countries. The government initially planned for a minimum of ten zones to be established abroad, and for each to eventually host an

Table 1. China's 19 officially approved zones (2007)

Country	Zone name	Location	Tender year	Original lead developer/ later lead developer	Chinese developer/ later developer	Home province or municipality	Initial zone focus/ later focus
Algeria	Jiangling	Oran City	2007	Jianling Automobile		Jiangxi	Automobile
Cambodia	Sihanoukville	Sihanoukville	2006	Guangming, Yiduo, Huatai/ Hongdou		Jiangsu	Industrial estate
Egypt	China-Egypt Suez	Suez	2007	Tianjin TEDA		Tianjin	Industrial and real estate
Ethiopia	Eastern	Dukem, Addis Ababa	2007	Yonggang /Qiyuan Investment Group		Jiangsu	Steel products, construction materials
Indonesia	Indonesia-China	Bekasi, Jakarta	2007	Guangxi State Farm Agribusiness Group		Guangxi AR	Cassava processing/Industrial estate
Mauritius	Jinfei	Terre Rouge	2006	Tianli/Three Shanxi companies		Shanxi	Industrial and real estate
Mexico	Geely	Aguascalientes	2007	Geely Automobiles		Zhejiang	Automobile assembly
Nigeria	Lekki	Lagos State	2007	CCECC		National	Industrial estate
Nigeria	Ogun-Guangdong	Ogun State	2006	Guangdong XinGuang		Guangdong	Industrial estate
Pakistan	Haier-Ruba	Punjab, Lahore	2006	Haier		Shandong	Home appliances
Russia	Ussuriysk	Ussuriysk, Siberia	2006	Kangnai Int'l Investment		Zhejiang	Industrial estate
Russia	Baltic Pearl	St Petersburg	2006	Shanghai Overseas United Investment Company		Shanghai	Real estate
Russia	Tomsk	Central Siberia	2007	Northwest Forestry		Shandong	Wood processing
S. Korea	Korea-China	Muan	2007	Dongtai Hua'an International Investment		Chongqing	Industrial and real estate
Thailand	Rayong	Rayong	2006	Holley Group		Zhejiang	Industrial estate
Venezuela	La Cua	Cçá, Urdaneta	2007	Inspur Group		Shandong	High technology, IT
Vietnam	Longgiang	Tien Giang	2007	Xieli Leather/Qiansheng Mining/Hailiang Qianjiang Invest. Mgmt.		Zhejiang	Industrial estate
Vietnam	Shenzhen-Haiphong	Haiphong	2007	Shenzhen Shenyue Joint Investment Co.		Guangdong	Electronics and textiles
Zambia	Zambia-China	Chambishi/Lusaka	2006	China Nonferrous Metals Corporation		National	Mineral processing

average of 50 Chinese companies. The zone program was not limited to Africa, but the English media first made note of the program when Chinese president Hu Jintao pledged to establish "three to five" economic trade and cooperation zones in Africa as part of eight major commitments made during the November 2006 Beijing summit of the FOCAC, or Forum on China Africa Cooperation.

In keeping with China's move toward the market, the Ministry of Commerce and its advisers did not assign firms to build the overseas zones, but held two rounds of tenders. More than 60 Chinese companies sent in initial expressions of interest as the 2006 tender was launched. Half were invited to submit proposals. Of these, 12 were invited to present their proposals before a special tender board in Beijing made up of professors and experts from China's own special economic zones. Eight proposals were selected for funding, and all went into development, although the consortium building the Baltic Pearl project in St. Petersburg later left the program (Table 1). The second round, in 2007, found more than 50 companies applying. Twenty were invited to submit formal proposals, and 11 proposals were selected. Of this second round, three proposals (for Algeria, Mexico, and Venezuela) have not been implemented (Table 1).

The panels scored the proposals on the basis of their feasibility studies (market potential, investment environment), the degree to which the firms could document evidence of support from the host government; the developers' ability to finance the project, and their proven capacity to implement a major construction engineering project.⁴ The second round in 2007 raised the annual turnover (revenue) requirement for participating firms to RMB 15 bn (about US\$ 2 bn) for at least the two previous years. This was a belated effort to ensure that companies would have the resources to successfully finance the development of the zones themselves, with the Chinese government playing only a supportive role.

Companies were interested in the program because of the support winning proposals would receive from Beijing through MOFCOM's Trade and Economic Cooperation Zone Development Fund. Companies would be eligible for RMB 200 to 300 mn (\$29 mn to \$44 mn) in grants, and long-term loans of up to RMB 2 bn (\$294 mn). These subsidies could be used for specific costs: up to 30% of the cost of feasibility studies, site visits to plan and negotiate with host governments, preparing a bid, purchase or rent of land, legal fees, and insurance. Companies moving into the zones from China could apply for reimbursements of up to half of their moving expenses, and rebates of some or all of the interest on Chinese bank loans. Some provinces and municipalities added additional incentives, and any locally-registered small and medium-sized (SME) companies in the zones were also eligible to apply for loan funding from a \$1 bn Chinese fund for African SMEs announced in November 2009.⁵

All of these subsidies were performance-based. In late 2008, the first benchmarking evaluation was done by a company contracted by the Ministry of Commerce and the Ministry of Finance: China International Engineering Consulting Corporation. Companies applied to be evaluated based on their own assessment of how they had performed against the stipulated benchmarks. Nine zones were evaluated in the first round; six companies were deemed to have passed the first set of benchmarks. Two additional rounds have taken place, in April 2010 and March 2011.

The implementing companies negotiate directly with the host governments about incentives and policies for the zones. No two zones have the same policies. Some countries have developed a legal and regulatory framework for special zones.

Zambia's Multi-Facility Economic Zone (MFEZ) policy, developed with assistance from Japan's International Cooperation Agency (JICA) allowed for VAT rebates and a graduated income tax schedule for companies investing in a zone, but also required that firms invest a minimum of \$500,000 before qualifying for the incentives. Other countries, such as Ethiopia, did not have special regulations for zones and treated the Chinese zones as ordinary industrial zones.

(b) *China's six zones in Africa*

As noted above, only 16 of the tender-winning zone proposals have proceeded beyond the tender stage (Bräutigam & Tang, 2012). The majority of the Asian zones were established in countries that were well on the way toward structural transformation. Zones in Korea, Indonesia, Thailand, and Vietnam are typical of this group. Chinese companies in these countries followed in the footsteps of Japanese and other Asian companies, and special economic zones are a relatively new concept only in Cambodia and Pakistan. In Africa, experience in economic zones is quite mixed. Among the countries where Chinese companies successfully bid to establish zones, Mauritius stands out as the most experienced: their first export processing zones were established in 1971, more than forty years ago. Nigeria has set up export processing zones, but none are considered successful. Egypt has several levels of industrial zones. Ethiopia and Zambia had no experience with special economic zones. In this section, we briefly describe the zones, before moving to analyze them based on the typology outlined above.

(i) *Chambishi MFEZ (Zambia–China Economic and Trade Cooperation Zone)*

Chambishi is a mining area 420 km north of landlocked Zambia's capital, Lusaka, home to a major copper mine complex operated by China Nonferrous Mining Co. Group (CNMC) since 1998. In 2003, CNMC began planning an adjacent industrial processing zone, comprising a smelter and ancillary factories. The foundation stone was laid in 2004. Zambia's 2005 Multi-Facility Economic Zone (MFEZ) legislation provided a framework for CNMC to develop a zone proposal, and they were successful in the 2006 tender. The Chambishi MFEZ comprises 11.58 km² in Chambishi, including the Chambishi copper mine. CNMC also undertook to build a 5.7 km² subzone near the Lusaka international airport. Firms in the zones will have a 25% customs duty on imported equipment waived, and will not have to pay Zambia's 16.5% value added tax, among other incentives. They are not exempt from the Zambian labor or environmental codes, and must invest at least \$500,000 to be able to take advantage of these incentives.

The zone developers highlighted an intention to add value to Zambian copper: "We want to build a whole industrial chain from exploration, concentrating and smelting to manufacture copper end products, we want to support mining activities in Kitwe and Chingola. We want to add value to copper as much as we can to enhance Zambia's industrial base and create employment for Zambians" (Trademark Southern Africa, 2011). Copper smelting, copper cables, and other copper and cobalt related products were obvious candidates for Chambishi, giving it a foundation of copper-based industrial development, allowing Zambia to add value to its traditional exports of simple copper concentrates. However, CNMC also hoped to attract other firms. In May 2011, the zone developers announced that they were seeking investment in specific categories, including electrical wire and cable, fertilizer, mine

equipment, building materials, and fire-resistant materials (ZCCZ, 2011).

By December 2012, the Chambishi zone was considered to be 60% complete (Zhou, 2012). CNMC had also invested at least \$5 million in earth works, internal roads, four factory shells, and other buildings in the separate Lusaka sub-zone, following a master plan developed in China, but approved by the Zambian Development Agency. As of our field visit in June 2013, infrastructure development in the Lusaka sub-zone was also well under way. In 2012, CNMC's zone was singled out by the Chinese government as the zone with the "best development, fastest progress, most standard management and most beautiful environment" among all the 19 approved overseas cooperation zones (CNTV, 2012). However, CNMC had also experienced problems, including a series of serious safety violations and strikes. In particular, a 2005 explosion at a dynamite factory on the grounds of the Chambishi mine killed more than 50 Zambian workers.

(ii) *Ethiopia Eastern Industrial Zone*

Eastern Industrial Zone in landlocked Ethiopia is located 32 km away from the capital Addis Ababa, near the town of Dukem, on the main road linking Addis Ababa to the port of Djibouti, about 550 km away. The major developer, Qiyuan Group, was originally a private pipe-making company based in the Zhangjiagang Trade Zone of Jiangsu Province, near Shanghai. When the chair of Qiyuan Group, Lu Qiyuan, visited Ethiopia in 2006, he was attracted by what appeared to be multiple manufacturing opportunities, and appreciated the political stability, security, comfortable climate, and "the strong desire" of the Ethiopian government "to get out of poverty."⁶ He brought in other three private companies from Zhangjiagang to co-invest in the zone, and competed successfully in MOFCOM's 2007 tender. Zhangjiagang Free Trade Zone provided technical assistance for zone management, under a contractual arrangement.

Eastern Industrial Zone was the first private industrial zone in Ethiopia and its progress has been delayed by the financial crisis that started in 2008. The developers were eventually able to get financial support from both the city of Zhangjiagang and the Jiangsu provincial governments, and a loan from China Export–Import Bank.⁷ According to the developers, shortages of foreign exchange, inadequate electrical capacity (low voltage), and the slow pace of bureaucratic approvals have also affected the zone's growth. Between early 2010 and July 2012, the start-up area of 100 ha was leveled, roads built, a cement company and a gypsum board manufacturer had built their own factories, and eleven new factory shells had been constructed for leasing. The zone was charging an annual cost of over US\$30 per m², considered high by Chinese standards. The zone developers' original goal was to promote several industrial clusters: building materials, textiles, food, shoes, electric assembly, and garments.⁸ Although the zone was open to investors from Ethiopia and all over the world, as long as they met the Ethiopian requirements, as of late 2012 only Chinese enterprises had invested in the zone. One of these enterprises, however, was a major shoe manufacturer, Huajian, which hired Ethiopians, brought a hundred to China for training, and quickly set up an export-oriented factory. By June 2013, Huajian was employing 1750 workers in the zone, mainly Ethiopian (Wallis, 2013).

(iii) *Mauritius Jinfei Economic and Trade Cooperation Zone*

Jinfei Economic and Trade Cooperation Zone is located in Riche Terre, an undeveloped tract of public land 3 km

northwest of Port Louis, near the Free Port. The sole original developer was the Tianli Group, a provincial level, state-owned enterprise active in trade, construction, real estate, and textiles. Tianli arrived in Mauritius in 2001, establishing a state-of-the-art spinning mill, which has since expanded several times. Tianli's plant supplied much of the demand for cotton and synthetic thread in the Mauritius textile industry, as well as exports to other countries.

Tianli's proposal for an overseas zone was one of the winners of the first MOFCOM tender in 2006. The zone was expected to be the smallest of the Chinese zones, with a total proposed area of 211 ha. The first phase was to comprise only 70 ha (0.7 km²) and when complete, was expected to provide both manufacturing and a service base (education, logistics, health, and leisure) for Chinese enterprises doing business in Africa. The second phase of the zone, targeted to begin in 2016, was said to target solar energy, pharmaceuticals, medical equipment, processing of sea food, and steel products as well as urban real estate. However, resettling farmers who had been leasing the land from the government caused delays in launching the zone, and the zone ran into further difficulties after the developer was hit by the global economic slowdown. After a request from the Mauritian government to assist the zone, the Chinese central government instructed Shanxi province to coordinate capital restructuring of the Tianli zone. Two much bigger partners, Shanxi Coking Coal Group and Taiyuan Iron and Steel Company, joined Tianli to create a consortium. An equity fund set up by China Development Bank, China Africa Development Fund (CAD-Fund), indicated that it was prepared to invest in the zone. The Mauritian government committed to invest several millions of dollars for its share of the public infrastructure leading up to the zone (water, electricity, and telecoms). Yet as of late 2012, the land had been cleared and some roads constructed, but little else.

(iv) *Nigeria Ogun–Guangdong Free Trade Zone*

Nigeria Ogun–Guangdong Free Trade Zone is located in the Igbessa Region of Ogun State, 30 km from the international airport serving Nigeria's commercial center, Lagos. The project originated from a 2004 study of South China University of Technology on the feasibility of setting up a Guangdong economic trade cooperation zone in Nigeria. This report was used for the successful bid by Xinguang International Group and a consortium in the 2006 tender. The project was originally sited in Imo State, but after several Chinese were kidnapped from a non-related project in the area, they decided to relocate to Ogun State where the government appeared better able to guarantee security (Soriwei, 2009). This delayed the project, although the developers were also then able to recruit the Ogun State Government as a minority partner. Construction began in Ogun only in the first half of 2009, and budget problems in Ogun state delayed some of the work promised by the Ogun state government, for example, paving the road leading to the zone.

Ogun allocated a total area of 100 km² for the zone, of which 40 km² was reserved for resettlement of people living in the zone area. Phase I began with 250 ha as a start-up area, although the developers planned to eventually utilize 20 km² (2,000 ha) in the first phase. A high-tech agricultural demonstration park may be added in the future. By June 2013, main roads within the start-up zone had been paved and a natural gas power plant was under construction. Thirty-four enterprises were registered in the zone, coming from Nigeria, China, Lebanon, and India (Nigeria–China Zhongfu Industrial Park Management Company, 2013).

(v) *China–Nigeria Economic and Trade Cooperation Zone*

The Lekki Free Trade Zone (LFTZ) is located 60 km east of Lagos on the Lekki peninsula, alongside a planned deep water port. The project had its origin in 2003 with discussions held by China Civil Engineering Construction Corporation (CCECC), which had been operating in Nigeria for over a decade, and the governor of Lagos State, about transferring the Chinese zone model to Nigeria. In May 2006, CCECC brought three other Chinese firms to partner with the Lagos State Government to establish Lekki Free Trade Zone Development Co. The government of Lagos State provided 30 km² of land (3000 ha) to the development company as part of its share. In November 2007, the Lekki Zone proposal won support in the second MOFCOM tender. The CAD-Fund later became an investor.

The development of the 3,000 ha on Lekki Peninsula was planned as a three phase operation, with the China–Nigeria Economic and Trade Cooperation Zone planned for the first phase (1,000 ha), with a target of some 200 companies. Construction began in October 2007 and although it was originally expected to last three years, it was still ongoing as of December 2012. The start-up area was limited to 154 ha (World Bank, 2011). The developers planned to divide the zone into six sections: transportation equipment; textiles and light industry; home appliances and communication technologies; warehousing; export processing; and living quarters and commercial areas.

(vi) *Egypt Suez Economic and Trade Cooperation Zone*

Egypt Suez Economic and Trade Cooperation Zone is located inside the 21.85 km² area of Sector 3 of the North-West Suez Canal Economic Area outside Egypt's new deep water Sokhna Port, just below the southern entrance of the Suez Canal, 120 km from Cairo. It was developed by Egypt TEDA Investment Co., a joint venture between Tianjin Economic-Technological Development Area Investment Holdings (TEDA), and Egyptian interests. CAD-Fund later joined the investors.

As noted above, TEDA was assigned to assist Egypt to develop a zone, and they began to do this in 1998. Their initial venture with Egyptian partners was not very successful, but in 2000, they launched their own small zone of 1 km² in a nearby area (Bräutigam and Tang, 2011a, 2011b). In November 2007, TEDA participated in the second MOFCOM tender. After winning the bid, they bought additional land in Sector 3 of the zone and formed a new joint venture with Egyptian interests. The zone proposal built on the earlier investment, and was planned around four clusters: textile & garments, petroleum equipment, automobile assembly, and electrical equipment, with the possible addition of electronics and heavy industries in a second phase. Egypt's political transition in 2011 did not appear to affect the zone much. By early 2013, 38 companies had invested in the zone (Scott, 2013: 28). TEDA officials commented to a reporter that they planned to expand and needed “more space: up to four times as much” (Halime, 2012).

5. AGENTS OF STRUCTURAL TRANSFORMATION?

The zones have potential to help in African processes of structural adjustment. Yet at this early point in their development, it is difficult to evaluate how well this potential is being realized. Zone development in China typically took at least a decade or longer to reach maturity. At the time of writing,

most of the African zones were still completing their infrastructure construction phase; this was taking longer than the expected three years, in all cases. The Chinese government understood the potential of the overseas zones to be development catalysts for Africa. One of six measures for China–Africa cooperation proposed by Minister of Commerce Chen Deming in a 2011 speech stressed that the cooperation zones should be developed more rapidly, create more employment, and emphasize technology transfer. He also proposed that China create more agribusiness, cluster-based centers, focused, for example, on the cotton value chain (Chen, 2011). Yet each zone is embedded in a local policy framework and depends on local coordination outside the zone. In this regard, the five host governments vary dramatically. Of the countries hosting zones, only Mauritius has been notably successful in fostering its own structural transformation in the past. It is thus ironic that the zone in Mauritius has experienced the greatest delays.

(a) *Employment and investment*

At a very basic level, structural transformation is signaled by an increase in the percentage of employment and production coming from manufacturing. Naturally, all of the Chinese zones have signaled their intention to attract large numbers of firms. For example, the Ogun Zone developers stated a plan to attract over 100 enterprises to the zone within 5 years, and 700–800 companies within 10 years. The more experienced TEDA had a more realistic goal for its Egyptian Suez zone, with the expectation that it would host 50 small and medium-sized companies by 2018 (Xinhua, 2009). Yet at present all of the zones are well behind their initial targets. Table 2 provides basic data on investment and employment in the zones. Determining the exact number of firms operating in these zones and their actual investment was difficult. Media reports repeatedly, but mistakenly, listed firms as having “invested” in the zones, but in reality, many of these firms have only signed some kind of memorandum of understanding. Not all of the firms that have actually invested are manufacturers.

In terms of the number of firms that have signed commitments of some kind, or actually moved in, the oldest zone, Egypt’s Suez zone, appeared to be the most advanced at the time of this research. At least 38 companies have made investments in the zone, although there has been some turnover (Feng, Yao and Feng, 2012; MOFCOM, 2012). As of March 2012, about 23 of the firms that had invested in the zone were reported to be “productive enterprises” (MOFCOM, 2012). At Chambishi in Zambia, five initial companies had grown to 26, with some \$322 million worth of equipment and plans to invest over \$1 bn (Zambia Daily Mail, 2012a; Interview, 2013). Three of the companies were apparently Zambian, but most appeared to be Chinese, and at least six were subsidiaries of the core developer, CNMC, although several *minying* (private) Chinese firms had invested.⁹ In Ethiopia, during our fieldwork in July 2012, factories operating in the zone included only a cement factory, a brick factory, a gypsum board maker, a producer of plastic bags, and a branch of one of Guangdong province’s largest leather shoe companies, Huajian Group, which had opened an assembly line with more than a thousand workers. A steel pipe manufacturer was preparing to start operations.

In Nigeria, as of December 2012, 85 enterprises had registered interest in the Lekki zone, 30 had signed lease agreements with the zone and four companies (producers of furniture and automobile spare parts, and petroleum storage) had begun operation. Among the 30 investors who signed lease agreements,

60% were Nigerians, 20% were Chinese, and 20% were from other countries such as the UK, India, and Ukraine.¹⁰ The Ogun Zone had attracted the most interest from private (i.e. not state-owned) Chinese firms. As of June 2013, all the 34 enterprises with commitments to invest in the zone were private companies, however, these were usually fairly small (many planned to invest only around \$1 million). Seven factories were already in operation, including a ceramic factory, a packaging material producer, a steel manufacturer, a plastic product maker, and other light industrial producers.¹¹

Employment figures are also tentative. As for African employment, the numbers are still small, but promising Table 2. Most zone developers appear to have gained permission to import skilled Chinese workers during the construction phase, but the proportion of Chinese workers is considerably smaller in the factories in the zones (Table 2 refers only to employment in the zone firms, not in the construction phase). The Ethiopian zone, for example, had 827 Ethiopian employees and 126 from China as of September 2011.¹² The Zambian zone had 7,973 Zambian workers and 1,372 Chinese, although these numbers include the mine workforce (Interview, 2013). The Ogun State government in Nigeria complained to reporters that the Chinese had agreed to hire 30% of skilled workers locally, but that this agreement was not being respected (Olukoya, 2012). It was not clear how each side defined “skilled,” nor whether this referred to the construction phase or to practices by the firms producing in the zone.

(b) *Building linkages, fostering technology transfer, clusters*

So far, we see little sign of clusters in the zones. Some of the zones, such as TEDA in Egypt, and Eastern in Ethiopia, included a cluster model in their initial plans, but in both cases they had not fully implemented the plan (TEDA had come closest). The demand has not been high enough yet to enable the developers to limit entry to only some kinds of industries. Further, although the developers might believe that clustering will be good for their host country, their own incentive as landlords is to rent out the spaces in their industrial park.

In the Ogun zone in Nigeria, developers planned initially to focus primarily on light manufacturing, including construction materials and ceramics, ironware, furniture, wood processing, medicine, small home appliances, computer, lighting, and paper. However, fieldwork revealed that most of the companies actually operating in the Ogun zone display no particular cluster potential. They include a packing materials factory, a ceramic producer, a plastic product factory, two producing steel construction materials, and one producing detergent powder. Indeed, entrepreneurs themselves may have their own reasons for not clustering. The owner of a leather factory operating outside of the Ethiopian zone told the authors that while he had offered friendly assistance to another Chinese leather firm, he did not particularly wish to operate close by other leather producers because of the increased potential for poaching of employees and production ideas.¹³

Some backward linkages may be formed by the entrepreneurs themselves. One of the major companies to move into the Ogun zone in the start-up phase was Hazan, a major Chinese shoe manufacturer from Wenzhou in Zhejiang province. Hazan’s experience reflected in part the incentives created by industrial policy in Nigeria. Hazan was originally only distributing its Chinese-made, artificial leather men’s shoes in Nigeria. When the Nigerian government banned the import of complete shoes, Hazan decided to set up a shoe assembly line

Table 2. Zone Investment, circa July 2013

Constr. Start Date	Phase I size (ha)	Est. constr. investment (\$US mil)	Actual constr. investment (\$US mil)	No. of Tenant Companies (signed)	No. of Tenant Companies (in operation)	Tenant Company commitments to invest (\$US mil)	Tenant Company actual investment (US\$ mil)	Tenant Company # of Chinese workers	Tenants: Approx. # of African Workers
2000	134	200–280	49	49	38	524	358	n/a	1000
2004	1158	200	150	36	26	1000	322	1372	7973
2007	109	392	83	26	6	700	76	n/a	n/a
2009	70	220	15	n/a	0	n/a	n/a	n/a	n/a
2009	250	220	24	34	7	150	58	177	1619
2010	200	101	22	12	6	129.5	n/a	300	1600

^aTEDA (2011), Bräutigam and Tang (2011b), Feng et al., (2012), China Net (2013) and Scott (2013).

^bPhase I size refers to entire zone. CNTV (2012), Commercial Office (2012), Alves (2011), Chitale (2011), Zambia Daily Mail (2012a, 2012b) and Interview, Chambishi Zone, June 1, 2013.

^cEstimate construction cost is for Phases I and 2. Interview, marketing manager of Lekki zone, Lagos, December 2012, World Bank (2011), China–Africa Lekki Investment (2012a, 2012b), China Commerce (2012).

^dConstruction investment as of July 2010; does not include Mauritian government's costs. Bräutigam and Tang (2011a, 2011b), Ancharaz and Nowbutsing (2011) and World Bank (2011).

^eInterview, Ogun–Guangdong zone management, December 2012; Gao (2012) and Zhongfu Nigeria. (2013).

^fInvestment commitments are as of end of 2011 and do not include Huajian; Workforce is as of July 2012 and includes Huajian. Interview, Eastern zone management and Huajian factory, July 2012. World Bank (2011) and Ethiopia Eastern Industry Zone. (2013).

in Lagos. By 2009, Hazan and at least four other Chinese shoe manufacturers had moved their shoe-making assembly lines to Nigeria, while still importing uppers and soles from China. Hazan decided to relocate to the Ogun zone after reviewing the relative costs: both wages and land were less expensive in Ogun than in Lagos, and the customs and tax regime were slightly better.¹⁴ Hazan had identified a potential to produce rubber soles in Nigeria from local rubber and were in discussions with one of their suppliers, a Chinese factory, about moving to Nigeria. Although Hazan was aware of Nigeria's potential as a leather producer, most of their shoes continued to be made of artificial leather, and they were not planning to attempt to integrate backward at that time. Yet this route of local backward linkages will not be easy (Na-Allah & Muchie, 2010). On our last visit to Nigeria, we learned that Hazan closed its Nigerian factory in April 2012 due to financial troubles affecting the parent company in China.

In another example, the large Chinese shoe company, Huajian Group, was attracted to Ethiopia and the Eastern zone because of Ethiopia's quota-free access to European and US markets. Ethiopia's high-quality skins would be an ideal raw material for its products if the country had enough processing capacity. The company was very happy to find that a new Chinese leather processing factory, China–Africa Overseas Leather Co., had just started operation near Addis Ababa (although not in the zone). It contacted the leather factory to discuss a supply contract.¹⁵ However, the Chinese tannery was not interested in supplying leather to the shoe factory, because it would lose its tax holidays if its products were sold locally instead of being exported. Huajian had to look for other local suppliers, and as of July 2012, was unable to source more than 30% of its leather inputs locally.¹⁶

Elsewhere, efforts to promote linkages with local companies appeared minimal. At Chambishi MFEZ, for example, although the developers professed a desire to bring in Zambian companies and other non-Chinese firms, their website was only in Chinese, and the minimum size of investment (\$500,000) set by the Zambian government made it difficult for most Zambian firms to qualify. The action plan of the Forum on China–Africa Cooperation (FOCAC) in 2009 stated that both sides will “intensify efforts to ... provide facilitation to African small and medium-sized enterprises (SMEs) to develop their business in the zones.”¹⁷ However, according to a MOFCOM official connected to the zone program, the Chinese government had no particular plan to connect African SMEs with the zone. African authorities did not appear to be taking any special actions either.

The cooperation zones have potential to build up industries in the same value chains in African countries and promote broad industrialization, just as the zones did in China. However, as of late 2012, few local enterprises had moved into the zones. There were no local manufacturers or suppliers in the Ethiopian, Mauritian, and Nigeria-Ogun zones. The Zambian zone only received its first local manufacturing investor, a plastic product manufacturer, in 2012 (Commercial Office, 2012) The Egyptian zone hosted a local bank, a local customs clearance company, and a couple of Sino-Egyptian joint-ventures (TEDA, 2011). The Nigerian Lekki zone had attracted considerable interest from local companies. By December 2012, nearly 20 Nigerian companies had signed lease agreements with the zone.¹⁸ Many of them were in the oil and gas sector, partly because the Lagos government, which had a 40% stake in the zone, actively promoted the zone inside Nigeria. However, as the construction of the zone was delayed, these companies have

not yet begun operations in the zone at the time this article was written.

(c) *Building linkages: skills development*

Developing Chinese special economic zones overseas could provide a practical channel for learning by doing, accompanied by focused training and the exchange of experience among African and between African officials and experienced Chinese. The Chinese zone program is overseen by China's Ministry of Commerce (MOFCOM), which also operates hundreds of training programs for officials and NGOs from developing countries. Some of MOFCOM's training programs focus on learning about China's experience of developing special economic zones and about investment promotion. Several African officials working on zone management or in investment promotion agencies were invited to workshops held in 2010 and in July 2011, but topics were not limited to the zones.

The overseas zones are at present unevenly linked into local training and research and development networks. Although the developers in most cases planned for the zones to attract specific clusters of enterprises, in no case did this appear to be connected to a distinct clustering strategy adopted by the host government. However, two of the zones are cooperating with vocational-technical institutes that were themselves funded by the Chinese government. The Eastern Zone in Ethiopia is linked to the Chinese-built Technical and Vocational Education and Training (TVET) Center in Addis Ababa. They have used interns from the TVET center. The Suez Zone operated by TEDA also had an association with a Chinese funded training institute: Egypt-TEDA Suez vocational education and training base.¹⁹ A mining equipment assembly company at Chambishi indicated that it had signed an agreement to provide apprenticeships for students studying mechanics at Northern Technical College in Ndola (Ngosa, 2012).

(d) *Infrastructure and urbanization*

As for infrastructure, the six Sino-African cooperation zones are scattered in five countries across the continent. Unlike the orchestrated zone development in China's coastal region, most of the Chinese zones in Africa are individual isolated spots in their host countries, and several are in land-locked countries. They have been able to improve investment conditions in one local area, but are unlikely to elevate the entire country's infrastructure capacity systematically, as happened in China. However, some of the zones do include plans to build or link to facilities crucial to the host countries' long-term development. The China-Egypt Suez zone is situated in a strategic spot, just outside Egypt's new deep-water Sokhna Port and 40 km away from the southern entrance of the Suez Canal. The Egyptian government has a clear, long-term vision to realize synergies from integrating the port facility, the canal, and the special economic zone (GAFI, 2011).²⁰

Chambishi zone in Zambia is located in Copperbelt province, the country's industrial hub. The zone envisaged forging a "relatively complete value chain" of copper/cobalt mining and processing, eventually creating a regional "strategic base" using the Tanzam Railway (built as a Chinese aid project in the 1970s) and extending through Central

Africa.²¹ Zambian sources reported that Chinese interests were investigating the rehabilitation of the Tanzam Railway, and linking it to Angola, which would create an overland route from the Atlantic Ocean to the Indian Ocean (Lusaka Times, 2011). These strategic rail links could play a major role in regional integration, creating new markets, and reducing the cost of inputs and raw materials for industrialization. However, the Chinese developers in the Lusaka East sub-zone were stymied in pushing the zone further because they had been waiting for three years for the Zambian power authority, ZESCO, to connect the substation built by the Chinese at Lusaka East to the national grid (Malama, 2012).

The managing director of the Lekki Zone, had high hopes for the zone and its associated (planned) port and airport to develop into a Shenzhen-like booming coastal city in the Gulf of Guinea, becoming the logistics center of West Africa (Xinhua, 2011). Plans for the zone in an area north of the commercial center, Port Louis, in Mauritius have also evolved toward real estate development, although as an upper middle income country with a robust investor class that has successfully built and run world-class hotels, Mauritius has little need for a real estate development with a Chinese flavor. Elsewhere, there is little sign of the kind of rapid urban development that accompanied some zones in China.

(e) *Policy experimentation*

The Chinese developers have clearly played a major role in transferring the Chinese ideas and practices about zones in Egypt and Ethiopia, and somewhat in Zambia, where the zone developers worked closely with the Zambia Development Authority, holding seminars and sponsoring their training trips to visit zones in China. This has also fostered a kind of policy experimentation. In Ethiopia, for example, the government had no experience with special zones, and could not even provide sub-lease land certificates for the investors in the zone. Zone developer Lu himself described the zone using a Chinese saying: "the first person to eat crab," i.e. the Ethiopians were figuring out how to "eat" this new "crab" and difficulties were inevitable. For the zone developers, negotiating preferential policies was the largest challenge. At first, Ethiopian authorities considered the Eastern Industrial Zone simply as a private industrial estate and refused to give special incentives. The developer insisted that preferential policies would be essential for attracting foreign investors, according to Chinese experience. In order to persuade Ethiopian authorities, the zone management, with the help of MOFCOM, organized visits by minister-level Ethiopian officials to visit SEZs in China in 2008 and 2010: Beijing, Shanghai, Zhangjiagang, and Suzhou. According to Lu, the trips "liberated the mind" of Ethiopian officials, and encouraged them to explore new policies.²² In Zambia, Chambishi zone officials took credit for the decision by the Zambian government to put greater emphasis on the MFEZ model as a development instrument: "this is our company's achievement. We did this."

The Chinese government also played an active role in influencing the Ethiopian government to provide more flexible policies for foreign investment. When the Minister of MOFCOM, Chen Deming, met Ethiopia's late Prime Minister Meles in 2010, he noted that even with huge foreign reserves and inward FDI, China continued to expand and optimize policies

to attract foreign investment and technology. He hoped that the Ethiopian government could "treat foreign investors with a more open mindset, and provide the Eastern Industrial Zone with more open thinking, more incentives and more preferential policies." According to the Zone promoters, Meles responded that he had instructed his ministries of finance and industry to study additional preferential policies for the Eastern zone, noting that the Ethiopian government needed to use the Eastern zone as a platform to study the management experience of Chinese SEZs.²³

Through the efforts to resolve these issues, the Ethiopian authority developed a policy framework for industrial zones. Zones (including the Eastern zone) were to be provided with some special incentives, including longer tax holidays than elsewhere in the country and the ability to retain part of their foreign exchange earnings. When a Turkish developer proposed building another industrial zone in 2009, the government was already better at negotiating land price, resettlement package, and contract terms.²⁴ In late 2011, Shijiazhuang, a city in Hebei Province, expressed interest in developing an industrial park in the Ethiopian city of Dire Dawa.²⁵ Chongqing Municipality sent a delegation to visit the Eastern zone in 2011 and was contemplating developing its own economic zone in Ethiopia.²⁶ However, the Eastern zone developers continued to press for additional incentives, including a 30% VAT rebate, which they argued was common in Chinese SEZs, noting that "industries would grow very rapidly with such rebates".²⁷

6. DISCUSSION

Interviewed in November 2011, the private Chinese developer of Eastern Industrial Zone in Ethiopia, Lu Qiyuan, expressed confidence in the future of his zone, because China will continue to need to export its manufacturing overcapacity overseas. In his words, "Africa is the future for Chinese companies, because the weaknesses of China, like land and natural resources, are precisely the strengths of Africa."²⁸ The Chinese commercial counselor in Egypt commented that "Chinese manufacturers are under pressure to lower costs ... and Egypt specifically has a very rich human resources to meet that demand" (Halime, 2012). For the Chinese government, the zone program seemed to serve its own objectives well, but these could dovetail easily into an African government's strategy for promoting structural transformation by catching the rising wave of restructuring in China (Lin, 2011). To do this, however, African governments need to see the wave rising, and map out how to get it to land in their country.

A major obstacle to realize the zones' potential of bringing structural transformation is the different held by Chinese developers and African governments. Chinese developers like to use the special economic zones in China as an example and believe that this model can be transplanted in Africa. In Egypt, although the Suez zone was still largely undeveloped desert, the zone's developer Tianjin TEDA told Egyptian media that the cooperation zone's goal is to become another Tianjin Binhai District.²⁹ Binhai, like Shenzhen, grew from uninhabited salt plains to an industrial engine and a booming urban center lined with skyscrapers. With this model in mind, TEDA have made an ambitious plan to invest in the Egyptian zone's infrastructure, forge manufacturing clusters, and develop a 10 km² residential area. The Egyptian authorities liked this idea, but were meanwhile more concerned about securing

Egyptian interests in this new model. For example, TEDA proposed setting up a single corporate entity that could both develop and invest in the zone. Zone development requires a huge investment and construction firms cannot obtain large loans for real estate alone. However, Egyptian authorities insisted that TEDA separate the infrastructure construction from other investments so that the infrastructure assets can be safely transferred to Egypt after 45 years.³⁰ Because of the different views on this and related issues, the two sides were continuing to negotiate the framework for the continuation of the zone as of February 2012 (TEDA, 2012). The Eastern zone in Ethiopia has experienced similarly difficult negotiations, too.

The divergence between Chinese and African views suggests that there are limits to the transfer of China's successful experience of SEZs. All the SEZs in China were developed by government and state-owned developers. The development of the zones was part of the whole government strategy. However, in Africa, the Chinese developers and the African developers may have different plans and conflicting interests, and it is not clear how both sides will be able to effectively coordinate their goals and activities. The slow start in almost every zone and the arduous negotiation processes in Egypt and Ethiopia already signal the bumpy way ahead. In addition, the zones' weak linkage with local enterprises and the lack of local participation in the zone management make it more difficult for the zones to drive broad transformation in the local communities.

For the zones to take advantage of the economics of clustering, plans to co-locate similar kinds of industries would seem to be critical. Garment manufacturers need firms that produce buttons and zippers. Shoe manufactures need to be able to access buckles and accessories. This requires far more coordination among the developers and their African hosts than has been the case to date. None of the zones have special incentives for clustering, and only the Chambishi zone appears to be succeeding in attracting industries in a related field (copper products). On the other hand, for some kinds of diffusion, it may not be necessary for all firms in a cluster to be co-located in zones, if skilled labor and advisors can move freely in and out of factories in a cluster. Skills can be transferred across the zone boundaries to other firms in a sector. Indeed, Chinese manufacturing investment in these countries outside of the zones is probably already far higher than inside, as a recent World Bank survey in Ethiopia suggests (Geiger & Goh, 2012).

Nonetheless, the establishment and the progress, albeit slow, of these zones have already marked a general trend of moving manufacturing industries out of China. It is unlikely that any of the six zones will play the same role in their host countries' transformation as the Chinese SEZs did in China's reform. Yet as pioneers, they contribute to the bi-lateral learning experience. At a minimum, they ought to provide the infrastructure (water, electricity, and sanitation) that will ease industrial investments by medium-sized firms and allow them to set up relatively rapidly, as Huajian did in Ethiopia. Chinese enterprises have accumulated overseas investment experiences and set up bases in Africa, whereas Africans are experimenting with new ways of attracting foreign investment. In this sense, the implementation of the zone model or the expansion of the zones is actually not the crucial question. As long as the zones help both sides better understand transnational industrial investment in practice, the zones are already facilitating the "flying geese" to come to Africa.

NOTES

1. Authors' calculations based on data in World Bank, *World Development Indicators* 2012.
2. Official discussion of the overseas zone program is very sparse. These objectives were derived by the authors from a scattering of official statements.
3. We appreciate the comment by an anonymous reviewer to this effect.
4. Interview, Ministry of Commerce officials, Beijing, November 25, 2009.
5. According to CDB, loans have been made to enterprises in the Suez and Jinfei zones. Amounts range from \$3 million to \$30 million for each loan. Interview, Liu Hao, deputy director of China Development Bank, September 8, 2011, Xiamen, China.
6. Interview, Lu Qiyuan, Chair of Qiyuan Group and Eastern Industrial Zone, Addis Ababa, November 2011.
7. Interview, Chinese Commercial Counselor and CEO of Eastern Zone, Addis Ababa, November 2011.
8. A stylized map of the zone on the wall of the reception room lists these clusters.
9. Interview, Liu Chang, Deputy Director of Zambia–China Cooperation Zone Beijing Office, Xiamen, September 9, 2011.
10. Interview, Marketing Manager of Lekki Free Trade Zone, Lekki, Nigeria, December 2012.
11. Interview, CEO of Ogun–Guangdong Zone, Igbessa, Nigeria, December 2012.
12. Interview, Zhou Chunlong, Manager of Investment Dept of Eastern Industrial Zone, Xiamen, September 9, 2011.
13. Confidential interview, Addis Ababa, Ethiopia, November 2011.
14. Interview, Jack Hong, Marketing Manager of Hazan Shoe Factory, Lagos, Nigeria, June 2010.
15. Interview, manager of Eastern Zone, November 2011, Addis Ababa, Ethiopia. Email communication, manager of Huajian Group, November 2011.
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