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Bulldozer or Locomotive? The Impact of Chinese Enterprises on the Local Employment in Angola and the DRC

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Abstract
This article is to analyze the impact of Chinese enterprises on the local employment practices in Angola and the Democratic Republic of the Congo (DRC). Based on surveys of over 100 Chinese and local companies and extensive interviews with managers and policy-makers in both countries made from July to December 2007, the study aims not only to depict the current employment practices of Chinese companies in Africa, but also to analyze the factors which affect the localization of employment. Two major patterns, bulldozer-type and locomotive-type, are identified and their implications for the local communities are discussed.

Keywords
aid, Angola, Africa, China, Democratic Republic of the Congo, employment

Introduction

During the first decade of the new millennium, China's economic engagement with Africa has been increasing significantly. Trade between China and Africa is projected to reach $100 billion before 2010, 10 times the 2000 figure (Brautigam, 2008). China's foreign direct investment (FDI) outflows to Africa have been growing even faster, from $74.8 million in 2003 to $1.57 billion in 2007 (Ministry of Commerce of PRC, 2008). That represents an average annual growth rate of 114 percent. Chinese banks have offered loans to finance trade, investment and development. Chinese firms have been dramatically expanding their business in energy, mining, construction, telecom, agriculture, trading and other sectors in Africa.

Correspondingly, the issue of China in Africa has attracted a great deal of political and media attention around the globe. Although many African governments welcomed aid, trade and investment from China, the reactions in the USA, Europe and Africa have often been characterized by fear and suspicion – considering China's enhanced existence as a threat rather than an opportunity. For instance, the impact of Chinese business on the local employment has become a major concern for many critics. While a huge amount of inflowing Chinese capital creates tens of thousands of new jobs in Africa, numerous Chinese businessmen and workers also come with low costs and salaries

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to compete with local African companies and labor. The number of Chinese migrants in Africa in 2007 is estimated to be somewhere between 270,000 and 510,000 according to different sources (Ma Mung, 2008). These newcomers have already caused uneasiness in the local communities. Sometimes their arrival is linked to the closing-down of local businesses and rising unemployment. Anti-Chinese resentments have been fueled in Lesotho and Zambia (Maseru, 2008; Trofimov, 2007).

Very little research work has been devoted to the question of how Chinese enterprises influence local employment, although a handful of papers cover related topics. Emmanuel Ma Mung (2008) has published a descriptive overview of the new Chinese migration flows to Africa. Empirical studies explore the features of Chinese diaspora in certain African countries, such as Sylvie Bredeloup and Brigitte Bertoncello's (2006) study on Chinese entrepreneurs in Senegal and Cape Verde, Elisabeth Hsu's (2007) paper on the Chinese communities in Zanzibar, and Elame Esoh's (2005) research on Chinese immigration in Cameroon. Works by Deborah Brautigam (2003) and Barry Sautman and Hairong Yan (2007) analyzed the effect of Chinese investment models and migration communities on general African economic development. Charity Manyeruke (2006) and Mduduzi Biyase and Lumengo Bonga-Bonga (2006) have done case studies on the impact of Chinese imports on Zimbabwean and South African employment respectively. Reports of Chinese engagements in African countries by Indira Campos and Alex Vines (2008) and the University of Stellenbosch (2007) also discussed migration and employment.

To explore in-depth the chances and risks brought by Chinese enterprises to Africa's labor markets, this article provides an empirical analysis based on surveys and interviews conducted in Africa. Angola is selected as the focus country because of its high-level commercial cooperation with China and the variety of Chinese migrants, which is made up of temporary labor migration in connection with big public construction projects and systematic entrepreneurial migration, as well as small- and medium-sized merchants. However, the Sino-Angolan cooperation has a very short history, starting just from 2004. Therefore, this article also introduces the case of the Democratic Republic of the Congo (DRC) to enhance the temporal dimension, which is vital for understanding the long-term trend as it is illustrated in Brautigam's (2003) research. The Chinese community in the DRC is merely one-tenth of the size of that in Angola, but has a presence dating back to the 1970s.

This article is based on three months' fieldwork in Angola and the DRC in 2007. Thirty-three Angolans and 12 Congolese were interviewed, including officials in charge of foreign trade and investment, entrepreneurial executives, scholars and employees. Sixty-nine Chinese in Angola and 25 Chinese in the DRC were interviewed, including officials from the Chinese embassies, managers, professionals, merchants and community leaders. Besides, another 58 Chinese were surveyed by phone or online. Twenty-eight diplomats and businessmen from other countries in Angola and the DRC were interviewed as well for comparative purposes and third-party viewpoints. Most major Chinese enterprises in energy, construction, telecommunication and manufacturing were visited. Smaller business in mining, trading, catering, agriculture and other sectors were sampled randomly.

Overview of Chinese Economic Activities in Angola and the DRC

Before the thematic analysis, it is necessary to give an account of the scope of Chinese economic activities in both countries. Both Angola and the DRC have suffered decades' long civil wars recently and are in desperate need of reconstruction.[1] Transportation infrastructure, water and electricity supplies in both countries have been ravaged by wars; public education and healthcare systems are almost non-existent in most rural areas; hundreds of thousands of unemployed live in ghettos, and there are hardly steady, well-paying jobs except in a small number of extraction industry companies. Both countries are troubled by huge foreign debts and corrupt governance so that they have difficulties in getting funds from western countries.

Angola

Angola signed its first framework agreement of $2bn with China in 2004 and the second agreement of another $2bn in 2007. Plus, a $500m loan was provided to Angola in 2007 for additional works from the first agreement. In these agreements, China offers low interest loans for Angola's infrastructure construction, such as airports, railways, schools, hospitals, telecommunication and water supply systems. A condition is that these projects should be completed by Chinese companies (Angolan Ministry of Finance, 2007).[2] Around 40 state-owned Chinese companies, mainly in the sectors of construction and telecom, entered the local market through these projects.

Moreover Angola's Cabinet of National Reconstruction uses the Hong Kong-based China International Fund as a financing platform to contract with a dozen big Chinese construction companies for gigantic special projects, such as railway, social housing and airports. These projects amount to $3.5bn (Angolan Ministry of Finance, 2007). After establishing a foothold in Angola, these companies plan to further expand their business through contracting for other public and private projects, although the amount of contracts procured is still not comparable with those of the governmental projects. Meanwhile, fast growth in Angola attracted private Chinese companies as well. They are mostly active in construction sub-contracting and importing cheap consumer goods from China. A Sino-Angolan car manufacturing joint venture in the company CSG, of which Zhengzhou-Nissan was the Chinese partner, was established and produced the first car in Angola's history at the end of 2007. As a result of these developments, the Chinese population in Angola has grown from 2500 in 2004 to possibly over 40,000 in 2007 (University of Stellenbosch, 2007).

The Democratic Republic of the Congo

In comparison, the DRC experienced longer economic cooperation with China. In the 1970s, China aided the DRC to construct the national stadium and the Congressional palace. A number of health-care and agriculture experts were sent from China as well. Some of them chose to stay in the DRC after the mission and established the first batch of Chinese companies there. In the 1990s, some Chinese private and state-owned companies began to expand overseas and set foot in the DRC in spite of the unstable political situation. Today, most Chinese-owned businesses concentrate on the footwear trading and mining sectors. In addition, a Chinese telecom company, ZTE, formed a joint venture, Congo China Telecom, with the Congolese government in 2001 and is among the largest telecom operators in the DRC. It is estimated that there were around 4000 Chinese in DRC by the end of 2007.[3] However, the scale of Sino-DRC cooperation was set to expand tremendously in the following years. In September 2007, China and the DRC signed a framework agreement of $5bn, including massive infrastructure construction and the revival of the mining industry in the DRC (Wild and Sguazzin, 2007). This agreement follows the model of Sino-Angolan cooperation and is regarded as a vital part of the DRC's post-war economic reconstruction. Although the implementation of this agreement still needs time, the inflow of Chinese companies and workers will significantly accelerate.

The employment patterns of Chinese companies in each country are illustrated later, followed by a comparative analysis and conclusion.

Table 1. Number and nationality of workers involved in the Sino-Angola enterprises – by company types

	Chinese	Angolan	Others	Total	Local employment (%)
Projects under framework agreement*	1264	1872	0	3136	59.7
Projects under Cabinet of NR**	1580	2030	0	3610	56.2
Private business***	509	1580	36	2125	74.4
Total	3353	5482	36	8871	61.8

Sources: * The Ministry of Finance of Angola, 30 June 2007, based on statistics of 30 projects in phase I of the first framework agreement. ** Based on surveys and interviews with eight Chinese construction enterprises. *** Based on surveys and interviews with 47 Chinese private companies.

Chinese Companies' Employment Practice in Angola

State of Employment

As mentioned, Chinese companies enter the Angolan market mainly through three approaches:

1. the bilateral framework agreements;
2. the projects from Angola's Cabinet of National Reconstruction (GRN);
3. private business.

These three types of enterprises showed quite different features regarding employing local workers (see Table 1).

The percentage of Angolan workers in the private sector is higher than those in governmental sectors. The reason for this difference is that all private business must be registered in and supervised by the ANIP (Agência Nacional para o Investimento Privado [National Agency for Private Investment]), which requires that at least 70 percent of the employees be Angolans according to Angola's Basic Private Investment Law, Art. 54/1. The companies working for governmental projects are not subjected to the ANIP, but rather are directly controlled by the Ministry of Finance and other corresponding ministries. There is also a clause in the framework agreement, requiring that 70 percent of the labor should be Angolans. Yet the definition of labor does not include managers and technicians, but only refers to the non-skilled workers. The conditions for GRN's projects are not disclosed, therefore there is no clear public control in this respect.

Such exceptions in the governmental projects are made out of considerations that national reconstruction projects such as water supply and road construction are urgently needed for Angolans' daily life and should be finished as soon as possible; while other projects, such as power plants and telecom, require large number of skilled technicians, which Angola cannot provide for the time being.

A further look at the ratio of local employment according to sectors shows more clearly that only in a few sectors does the percentage of local employers drop significantly lower than 70 percent (see Table 2).

The availability of technicians is clearly the largest obstacle in hiring Angolans, as evidenced by the fact that the two most technology-dependent sectors, namely power generation and telecom, have the lowest local employment ratio. Twenty-seven years of civil war devastated the educational and industrial systems in Angola, so that most of the local workers do not have the required

Table 2. Number and nationality of workers involved in the Sino-Angola enterprises – by sectors

Sector	Chinese	Angolan	Others	Total	Local employment (%)
Agriculture/irrigation	72	307	0	379	81.0
Hydropower plant and transfer	451	335	0	786	42.6
Education/school construction	376	676	0	1052	64.3
Healthcare/hospital construction	365	554	0	919	60.3
Construction of transportation Facilities	658	1053	0	1711	61.5
Municipal construction	349	607	0	956	63.5
Public housing	274	455	0	729	62.4
Commercial housing	191	486	14	691	70.3
Telecommunication	235	145	4	384	37.8
Catering	42	128	0	170	75.3
Trading	146	432	7	585	73.8
Manufacturing/industry	194	304	11	509	59.7
Total	3353	5482	36	8871	61.8

Sources: The Ministry of Finance of Angola, June 30 2007, based on statistics of 30 projects in phase I of the first framework agreement, surveys and interviews of eight Chinese construction enterprises and 47 Chinese private companies.

education and experience for advanced tasks. In addition, some Chinese managers are not familiar with the local workforce and thus have no confidence in them yet. In order to ensure the progress and guarantee the quality of the projects, they tend to bring from China as many technicians as possible, from plumbers and carpenters to electricians and engineers. The unfamiliarity with the quality of local workforce and the urgency of certain public projects are both short-term factors. This will probably change with time. After the Chinese companies are established in Angola and enter a phase of stable development, the influences of these two dynamics are expected to decrease and the 70 percent local employment quota can and should be reached in these sectors too.

A positive note is that local workers make up more than 70 percent or even over 80 percent of the workforce in some sectors which create long-term employment, such as agriculture, catering, trading and commercial housing. There are two reasons for this: first the local government is more unwilling to give out work permits in these ‘low-tech’ private sectors; and second the calculation of cost and outcome in the market competition encourage employers to use local workers for these simple jobs.

Among the 35 employers who answered the question of comparing the efficiency between a Chinese worker and an Angolan worker of the same technical capability, the average estimation is that the Chinese worker is about 1.3 times more efficient than his Angolan counterpart, because they ‘take less leave’, are ‘more disciplined’, and ‘work harder’. Meanwhile a Chinese worker on average earns approximately 60 percent more than his Angolan counterpart. However, apart from salary, a Chinese employee also entails more additional costs, including accommodation, one or two trips to China per year, work permit applications and extensions, medical costs, etc. These costs vary according to positions, but on average they are approximately equivalent to the salary. Let’s suppose that an Angolan worker’s salary is \$50 per week and he produces \$100 value during this period, namely he creates \$50 profit without counting material costs. A Chinese employee in the same position has higher pay and costs. Yet he produces \$230 and brings 40 percent more profit to the employer than his Angolan counterpart (see Figure 1).

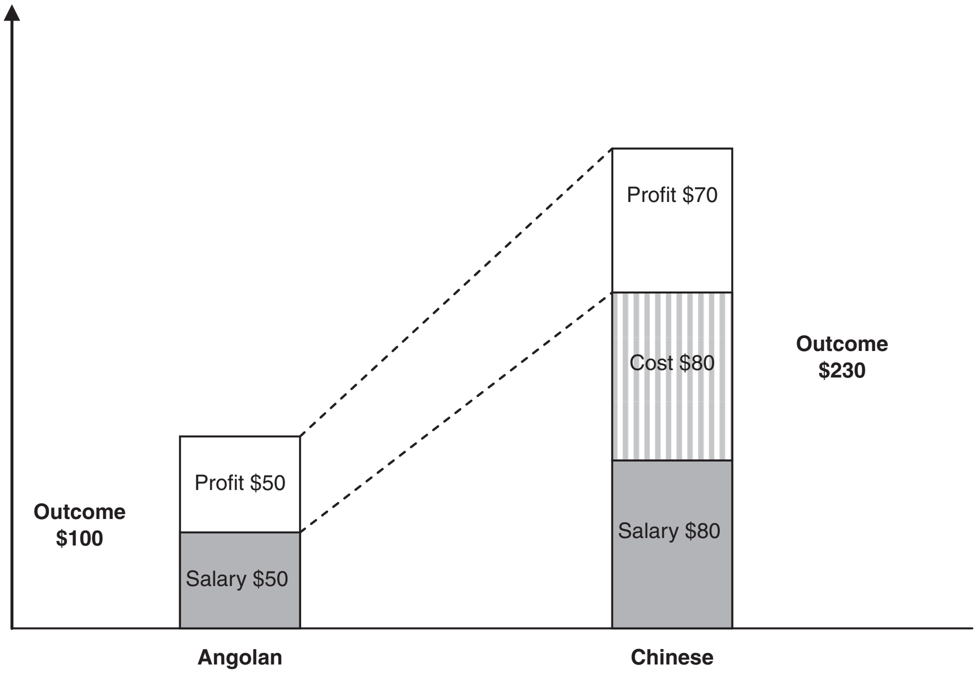

Figure 1. The cost and outcome comparison between Chinese and Angolan workers

This simplified model illustrates the basic economic rationale for hiring skilled technicians from China. If we assume that this salary and outcome ratio is common, the use of Chinese employees is more profitable when positions are more technology-featured, because the difference in profits will be larger in high-salary and high-outcome positions.

However, many Chinese employees in Angola report very low work satisfaction rates. In Luanda, the most expensive city for expatriates in the world (Biggs, 2007), the accommodations provided by the Chinese companies are often shabby. The food supply is problematic. There is almost no entertainment after work. The health and safety situation is critical. The separation from family is painful. Although the salary paid to Chinese expats is higher than the usual rates in China, Chinese companies cannot afford similar expats packages as European companies can (Sautman and Yan, 2007). Therefore most Chinese workers, including managers, are not willing to stay overseas after their contract term, which is usually two to three years.

Localization

Employers have acknowledged this problem and are trying to replace Chinese employees with Angolans mainly through two approaches: first, by training local employees to raise their skill levels; and second, by using more local managers to integrate enterprises and to improve productivity, because often the inefficiency of the local workers is caused by improper management and miscommunication. The following data are the result of the survey regarding training programs for the local employees (see Table 3).

Table 3. Training programs for local employees in the Chinese companies

Sector	Training at work	Intensive training programs	Overseas training	Total
Public construction projects	33	10	0	35
Commercial housing	8	5	0	9
Telecommunication	3	3	1	3
Catering	5	5	0	5
Trading	17	7	1	19
Manufacturing/industry	2	2	2	2
Total	68	32	4	73

Source: field research Jul/Nov. 2007.

Seventy-three enterprises surveyed responded to the question about training. Sixty-eight of them, namely 93 percent, have different kinds of training for the Angolan workers. Those who have no training are all new comer working on small short-term projects and have not built their own stable workforces. All the enterprises choose training at work as their major training method, since it is the most cost-saving, efficient and practical way of learning. Training at work includes learning specific working skills, such as carpentry, electricity and engineering, as well as learning how to use new machinery and devices.

Intensive training programs are usually provided at the beginning of employment for workers to acquire necessary understanding and skills, or at the end of the construction phase to train staff for post-construction maintenance. Especially in the energy and telecom sectors, where Chinese engineers are the major workforce for construction, Chinese companies trained or planned to train Angolan engineers for maintenance. It would be a huge cost burden to have Chinese engineers stay on-site during the two or three years of post-construction service. Another advantage of training local engineers for maintenance is that after the two or three year guarantee period, the local property owners can easily take over the projects and their maintenance with the local engineers.

Overseas training is rare, given the immense costs involved. Therefore, only the industrial sectors that require high-profile employees, in areas such as telecom, oil and automobile, need this form of training and can afford it. Most trainees are engineers and administrators. For example, the Sino-Angolan automobile joint venture CSG sent 50 Angolans to the company's headquarters in China for three months to get familiar with the whole organization, production process and enterprise culture (Portal das Empresas Governo de Angola, 2007).

Table 4. The percentage of local employees in different positions

Sector	Labor	Technician	Engineer	Admin.	Manager
Public construction projects	79	34	11	61	3
Commercial housing	91	53	21	78	32
Telecommunication	80	29	18	66	5
Catering	84	65	–	70	45
Trading	91	68	–	69	31
Manufacturing/industry	93	49	32	58	41

Source: field research Jul/Nov. 2007.

Although localization is happening at all levels of enterprises, the steps vary – as Table 4 shows. Most non-skilled labor positions have already been filled with as many local workers as possible. Only some positions that have special requirements, such as waiters in Chinese restaurants, use a small number of Chinese employees. Technicians are relatively easy to train. Although it is difficult to recruit many qualified electricians directly in the labor market, as well as masons or other skilled workers, companies are training the workers and gradually building up their teams. Especially in the private sector where the number of Chinese workers is strictly regulated, for example in catering and commercial construction, companies pay more attention to training; whereas in public projects, construction companies focus more on keeping the project schedules than systematic training – for the time being at least. On average, 60–70 percent of the office administration staff are Angolans, but the Chinese administration employees cannot be entirely replaced in the near future because few Angolans can speak Chinese thus far.

The recruitment of local engineers is much more difficult. First, Angolan university graduates in technologies are scarce, except those in the extraction-related majors. Consequently, fierce competition by companies for the limited number of engineers dramatically raised salary levels. A good programming engineer in Luanda today can earn \$3500–\$4000 per month on average. Compared with the western telecom and construction companies operating in Angola, many Chinese companies cannot afford high-quality local engineers. Though some companies are trying to train their own engineers, for example in the telecom and automobile industries as mentioned before, it is a long and costly process. If the imbalance between the demands of industrial development and the supply of qualified university students cannot be solved, the localization process of engineering teams will be slow.

The localization of management differs according to the enterprise structures and the industrial sectors. In the Sino-Angolan joint ventures, Angolans often actively participate in management. In some trading companies, civil construction companies and restaurants, Angolans have even taken over control of the company. For example, S restaurant[4] was one of the biggest restaurants in Luanda and was owned by several Chinese and Angolan investors. Originally it was supposed to be an entirely Chinese restaurant under Chinese management. However, as the local economy developed quickly, more and more Angolan customers became richer and began visiting restaurants more. Since the Chinese managers did not understand local eating habits, nor were they able to communicate with local customers in depth, the restaurant lost a large number of customers to other restaurants. In this context, the Angolan co-owners took over the initiative gradually. They first added local dishes to the menu, then increased the proportion of local staff, and finally replaced the Chinese general manager with an Angolan.

This case shows that the demands of a local market largely influence the localization process of management. The advantages of localized management are:

(a) Angolans understand the local market better.
(b) They are adept in handling the local authorities and public relationships.
(c) They have good communication with Angolan employees.

However, the negative sides include:

(a) They are used to a slow rhythm and cannot keep pace with the Chinese enterprises.
(b) They cannot effectively manage Chinese employees.
(c) They have difficulty in communicating with the Chinese parent companies.

Sometimes, the decision between the pros and cons is difficult. As a middle way, a few Chinese companies use people from a third country, for example South Africa, to facilitate the localization of management. This is a common practice in multi-national companies. Usually European or American companies will send their staff in Portugal or Brazil to Angola because of the linguistic and cultural affinities. Most of the Chinese companies in Angola have no branches or presence in Portugal or Brazil. Neither can they afford the compensation package for expatriates from these countries. Thus, they bring their South African or Southeast Asian employees to Angola. These employees have worked for Chinese companies for a while and have understood their corporate culture, speak English better than the Chinese, and are better at communicating with Angolans. Though this phenomenon exists only in a small number of private enterprises now, it shows that Chinese companies have begun to realize the importance of diverse and localized management in their Africa businesses.

External Impact

Besides directly employing Angolans, the Chinese companies' business activities are indirectly influencing the local job market as well. Especially when they arrive in Angola in such large numbers and in an organized manner, their business patterns have a huge impact on the market environment.

First, the gigantic construction projects need numerous subcontractors. If Angolan companies win the subcontracting, it will not only create jobs for local workers, but also contribute to the long-term development of Angola's own construction industries. However, the lack of qualified local construction companies forces Chinese and other foreign companies to search for subcontractors from outside.

Companies from China, Korea, Portugal and Brazil are the four major forces in Angola's construction market. As Table 5 shows, the portion of local subcontractors never exceeds 40 percent of the total subcontractors. If counted by the subcontracting amount, the percentage is probably even lower. Interestingly, Chinese companies are subcontracted by companies from all countries because of their competitive prices. Thus Chinese construction companies form a serious threat to the local companies. The Angolan government has realized this problem and added a condition in the new framework agreement that the Chinese companies must use 30 percent of total project funds to subcontract with local companies (Thompson, 2005).

However, Angolan companies have advantages which cannot be replaced by Chinese. First, they have large construction machines at hand, whereas Chinese companies must transport their equipments from home. This causes extra costs and long delay. Second, they are much more experienced in the local environment. They know the market of supplies, the construction location, the natural circumstances, the people and all the bureaucratic problems. Therefore they can avoid or at least be well prepared for the many logistic troubles which can unexpectedly disturb the Chinese and cause huge losses.

Actually Chinese companies are also willing to and regularly do subcontract local companies to use their strength (University of Stellenbosch, 2006). Yet, two major concerns hinder further local subcontracting. Above all, many Chinese companies are unsatisfied with the quality of the work done by local companies. Also, the projects which are constructed by Chinese companies in general are generic projects and have such low profits that the Chinese general contractors cannot afford the expensive local subcontractors or companies from other countries. This is a major problem for Chinese enterprises. On the one hand, their hard work gets little reward; on the other hand,

Table 5. Sources of subcontractors for Chinese, Korean, Portuguese and Brazilian companies (in parentheses is the percentage of the total subcontractors)

Sources of subcontractors	Chinese	Korean	Portuguese	Brazilian
China	29 (66%)	2 (25%)	5 (19%)	1 (9%)
Korea	0	2 (25%)	0	0
Other Asian countries	0	1 (13%)	0	0
Portugal	0	0	7 (27%)	1 (9%)
Brazil	0	0	2 (8%)	3 (27%)
South Africa	0	1 (13%)	2 (8%)	2 (18%)
Angola	15 (34%)	2 (25%)	8 (30%)	4 (36%)
Others	0	0	2 (8%)	0
Total	44	8	26	11

Source: surveys and interviews of 38 Chinese projects, three Korean projects, four Portuguese projects and two Brazilian projects.

they are not capable of hiring large amount of local workers and subcontractors and face severe criticism.

Acknowledging such a dilemma, Chinese companies are aiming at more specialized, high-quality and high-profit markets for long-term development. This strategy means that in the future they will focus on high-end markets and compete more directly with Portuguese, Korean, Brazilian and South African companies. Though western companies maintain a slight competitive edge over their Chinese counterparts in specialized or technology-intensive construction projects, the gap is closing fast (University of Stellenbosch, 2006). Hence, in the long run, Chinese companies are set to climb up the value chain and change their current awkward situation.

Another important external impact on the labor market is the amount of local suppliers used. Since the industrial structure in Angola is extremely imbalanced, the extraction sector counts for nearly 60 percent of the national GDP, while the manufacturing sector has a share of less than 5 percent (Universidade Católica, 2005). Therefore, construction, telecom and manufacturing enterprises have to import most of their equipment, accessories and materials from South Africa, Europe and China. Local suppliers can only provide agricultural products, cement, elementary service, etc. The imbalance of industrial structure significantly limits the development of local supply networks and in turn the possibility of local employment.

Nevertheless, the increasing imports from China stimulates the development of commerce, which accounts for 15 percent of Angola's GDP (Universidade Católica, 2005), and creates jobs in the commercial service sector. Imports from China rose from $370m in 2005 to $890m in 2006 and reached $1.23bn in 2007 (Ministry of Commerce of the PRC, 2005, 2006, 2007). The import of these affordable goods, ranging from textiles and electronics to machinery, partly contributed to the flourishing of the local consumer goods market, which grew on average over 20 percent quarterly in 2006 (see Figure 2). Though there is no accurate statistics about employment in the commercial sector, the market boom can indicate the trend of job creation. Tens of thousands of local retailers, street vendors and sales assistants now are making their living from the distribution of the consumer goods made in China.

Last but not least, the improvement of infrastructure will definitely benefit the economic future of Angola in the long run. The three sectors in which Chinese companies are most active, namely agriculture, energy and water, and construction, have shown higher growth rates than other non-petroliferous sectors (Figure 3). With proper management of these new infrastructures,

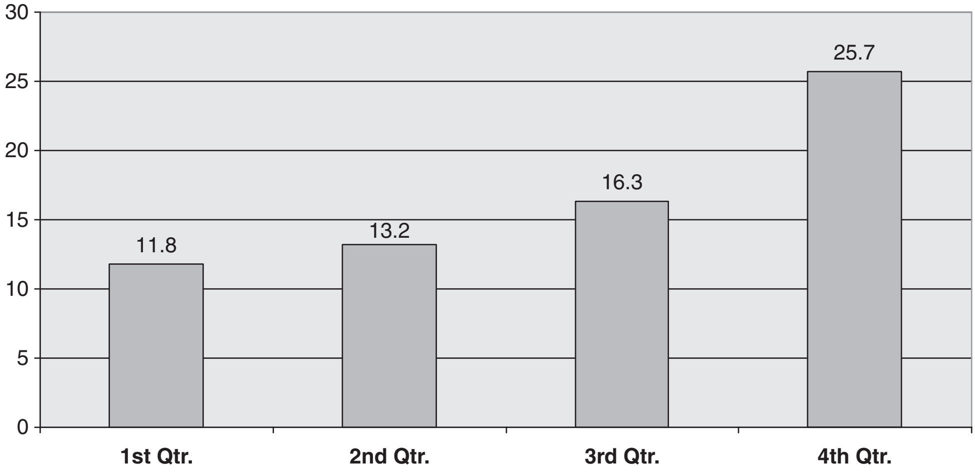

Figure 2. Quarterly Revenue from Consumption Tax in Angola 2006 (in billion Kwanza)
Source: The Ministry of Finance of Angola, 2007.

Angola will be able to achieve sustainable industrialization and social development independent of the fluctuating oil price.

Chinese Companies' Employment Practice in the DRC

As mentioned in the first section, the gigantic projects proposed by the agreements between China and the DRC have not yet been implemented. The following investigation is limited to the Chinese enterprises which were operating in the DRC by the end of 2007. Thus the number and the variety of the enterprises described here are much smaller than those in the Angolan investigation. However, compared with their counterparts in Angola, a large number of the

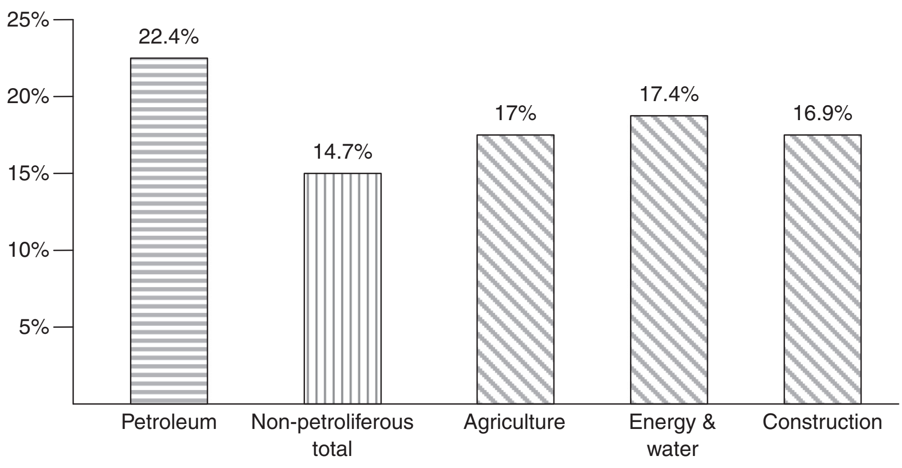

Figure 3. The growth rates of Angola's economy 2005 by sector
Source: Studies of economy and finance – Angola, BPI, August 2006.

Table 6. Number and nationality of workers involved in the Sino-Congolese enterprises – by sectors

Sector (no. of enterprises surveyed)	Chinese	Angolan	Others	Total	Local employment (%)
Mining (23)	174	637	5	816	78.1
Telecom (4)	149	491	3	643	76.4
Catering (5)	36	114	0	150	76
Trading (36)	138	402	0	540	74.4
Total (68)	497	1644	8	2149	76.5

Source: field research Dec. 2007.

Chinese enterprises in the DRC have been operating for a relatively long time, on average between five and 10 years. Though some companies are state-owned enterprises and some of the private businessmen were sent to the DRC by the aid programs and chose to stay afterwards, they all established their businesses through market competition without governmental arrangement.[5] This enables us to study Chinese companies' employment practice in Africa in a very different context. Moreover, the present status may assist future research on the impact of the arriving multi-billion projects.

Chinese enterprises in the DRC are mainly in the sectors of mining, telecom, catering and textile trading. Table 6 shows that the average percentage of local employment is much higher than in Angola (cf. Table 2).

Interestingly, unlike Angola, the DRC has no clear legislation regulating what percentage of staff in a company should be local employees. The high percentage of local employment is made up purely from the consideration of economic needs. First, most Chinese companies in the DRC are not contractors of construction projects, but face the consumer market directly. They need large amount of local employees to do sales and marketing for their cell phones, phone cards, shoes, etc. Second, since there is no urgent project schedule, enterprises' employment plans are rather based on long-term development. Instead of bringing expatriates from China, they put more emphasis on training local employees to build a reliable workforce. After a period of training, many Congolese employees take over the positions of the Chinese. Through a comparison of the companies which are older than five years and those which are less than five years old, we can see an obvious trend of increasing numbers of local employees. This trend will probably continue as companies grow further, because as the business grows, usually the overwhelming majority of the staff added are local employees.

Correspondingly, the localization of management and technical positions is also progressing with companies' growth. For example, during the period of the study, Congo China Telecom were sending about 20 Congolese engineers to China for training annually. These trainees together with middle-level local managers are supposed to take the place of their Chinese colleagues in the near future.

The character of the localization of Chinese companies can be exemplarily illustrated by comparing five telecom operators from different countries. Table 7 shows that the localization in the Chinese company is ahead of two new operators, but significantly slower than two old operators, especially in the technical department and the management. A major reason is that it was the first time this Chinese company had operated in an African country. The company lacked experience. For example, the African telecom operator trusts the graduates from the University of Kinshasa because it knows clearly the quality of technology education there; it only brings people from

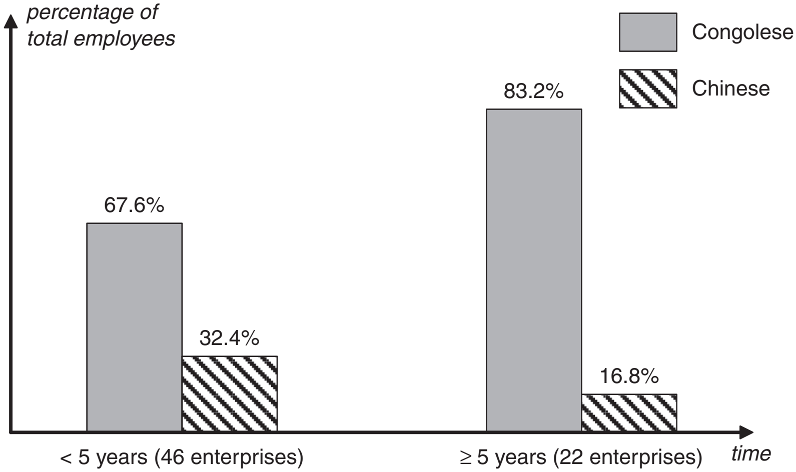

Figure 4. Temporal comparison of local employment
Source: field research Dec. 2007.

abroad to some management positions for which the Congolese have not enough experience. The Chinese company does not have such knowledge and confidence. As a consequence they tend to use Chinese employees as long as they are unsure about the capability of the local employees. Yet, through a period of observation, more and more Congolese have been promoted to important technical and management positions.

Another factor is that the high-quality local employees are too costly. In the European and African companies a Congolese technical director can earn up to $100,000 per year, which is four or five times more than his Chinese counterpart. Therefore, in order to keep its strategy of low cost and low price, the Chinese company has to use Chinese personnel for the high-level positions. Nonetheless, such hyper-salary phenomena are limited to the high-ranking management positions. In the low- and middle-rank positions, the company hires a large number of local people.

Apart from its 300 local employees, the Chinese telecom operator also indirectly created 4000 jobs, mainly in the distributing channels. In the mining sector, Chinese investment reinvigorated the whole supply chain. From production to testing, trading, transportation, equipment manufacturing, catering and lodgment, numerous local enterprises benefit from the insatiable appetite of Chinese buyers for copper, cobalt, gold, etc. In the sector of textile and footwear trading, the import of cheap Chinese products contributes to the market boom and creates indirect employment in transportation and commerce.

Comparative Analysis of the Employment Patterns

Government Decision

Summarizing the characters of the described practices in Angola and the DRC, we can see two major patterns in Chinese companies regarding local employment. The first one brings a large number of Chinese technicians and emphasizes speed and cost efficiency. In this pattern it looks as if a whole Chinese company has moved to Africa. Like a powerful bulldozer, it cleans the ground very efficiently, but has no essential interaction with others and its impact is limited to the work it has done. The other model focuses on establishing close links between Chinese and local

Table 7. Comparison of the percentage of local employees in telecom operators

Parent company's nationality	Technical department	Administration dept.	Management	Total	Operation in other African countries	Year of operation	Pricing
Chinese	76%	93%	64%	79%	0	2002	Low
European	89%	97%	84%	92%	6	2002	High
African	98%	100%	88%	97%	15	2000	High
South American	76%	91%	61%	78%	5	2007	Low
Korean	66%	84%	52%	69%	0	2007	High

Source: Standard Telecom, Tigo, Celtel, Vodacom, CCT, Dec. 2007.

people in order to integrate the Chinese company into the local community. The company is pursuing long-term profit by creating synergic growth together with Africans. Using the strength of the Chinese side, such as capital, technology, efficiency, this model, like a locomotive, can contribute to a much larger scale of local development, including training, indirect employment and market prosperity.

However, the choice between these two patterns does not depend on the Chinese side, but is and should be mainly decided by Africans. Both patterns have their advantages and the decision should be based on comprehensive considerations of economic needs and social development. The bulldozer pattern is effective for the least developed countries, especially the post-conflict countries, where there is not enough qualified workforce for the vast reconstruction. The temporary use of Chinese workers can speed up infrastructure construction, quickly improve people's living conditions and provide a solid basis for further development. The locomotive pattern definitely contributes more to the long-term interests of African countries, whereas the start-up is slow. For the countries which need Chinese bulldozers at the beginning, the key point is how they can smoothly transfer them into locomotives after the period of urgent construction.

Regarding this point, the Chinese government has been consistently encouraging Chinese enterprises to hire local people and create a good social image (Bo, 2006; Zhou, 2007). However, it is market competition and business needs that finally decide the behavior patterns of enterprises. As demonstrated earlier, the approaches of market entry set the tone for employment patterns. When companies enter the countries purely through market competition, they are more concerned with connections in the local environment. Thus they hire and train local employees at the beginning, as well as relying on local partners and services. They automatically take the role of locomotives. In contrast, in the public projects sponsored by government agreements, the enterprises are mostly concerned with keeping schedules, because this is also the biggest interest of the politicians who award the contracts. These projects are usually one-time and short-term (less than three years) projects. Thus companies are not interested in spending much time and money for training, because their benefits are limited to these projects. Hence, it is necessary for local administrations to control projects of governmental agreements within a proper scope so that Chinese enterprises can pay more attention to employing and training local people.

In this connection, the mandatory involvement of local workers, subcontractors and suppliers in the projects of intergovernmental agreements benefits both sides. For Africans, local human resource can be developed during the process of hardware construction. For the Chinese, the imposed local involvement can actually facilitate the transformation of their enterprises from short-term outsiders to long-term localized players.

Enterprise Strategy

From the perspective of entrepreneurial management, Chinese companies' pricing strategy is the key point to be considered regarding their impact on local employment. The prevailing market strategy of Chinese companies nowadays is low pricing. Consequently they have to keep cheap labor costs without reducing productivity. Yet, this strategy has its difficulty in the localization process. First, the local employees do not have the same skills and working styles as their Chinese counterparts, therefore localization may cause the increase of costs and prices. Second, the skilled local employees are too expensive for Chinese companies. Though enterprises from other countries also bear additional costs during localization, Chinese companies are more sensitive to it since low price is the key to their competitiveness. Their strategy restricts their flexibility to salary expenses and selection of employees.

However, the cheap products brought by Chinese companies can create large amount of indirect employment. In both Angola and the DRC, the booming markets in clothes, electronics and cars, imported or manufactured by Chinese companies, not only benefit the consumers, but also stimulate the growth of distribution, transport and other related sectors. In the countries whose manufacturing industries are under-developed and where consumer markets are dependent on imports, the jobs created in the commerce and commercial service sectors are net gains. Likewise, the low-cost commercial constructions realized by Chinese enterprises provide affordable office spaces, market places, hotels and factory buildings for the development of other sectors. In addition, the increasing demands for construction materials and suppliers, some of which can only be produced locally, also encourage employment in the upstream of the construction sector.

Of course, short-term market boom and indirect employment cannot hide the long-term problems. If Chinese enterprises stick to the business pattern of low pricing, the positive influence will diminish as soon as the markets become saturated, and the negative effects will be more obvious if more Chinese workers continue to come. Yet the surveys made in Angola and the DRC showed that this scenario is unlikely to happen. The ratio of Chinese employees has been sharply decreasing as Chinese companies grow. The average ratio of Chinese employees is reduced by half after five years (see Figure 4). In many manufacturing and mining enterprises, 60–70 percent of the initial Chinese workers returned home after the factories had been constructed and operation had begun. The bulldozers tend to transform into locomotives automatically as time goes by.

The first reason for this transformation is African workers' fast-learning progress, which makes hiring Chinese workers no longer economically attractive. Based on the calculation model of Figure 1, Figure 5 shows that an experienced local worker increases his efficiency by 50 percent and produces $150 value per week. He does not have to reach the same productivity as his Chinese colleagues in order to replace them. Even when his salary is raised to $80, the profit he makes now is $70, without counting material costs, which equals the profit created by a Chinese worker.

Apparently such an elevation of productivity is not difficult for generic tasks, given a period of learning, practicing and adaptation. Management and advanced technical positions require longer training and more experience. Hence, after Chinese workers set up the original models, Chinese enterprise quickly reduce the number of Chinese employees and form a similar structure to those of the Western companies, in which only a few key positions are filled with expatriates.

Chinese employers are in fact eager to reduce their Chinese employees too, because the expatriates are unwilling to stay for long time and are often unsatisfied with the living and working conditions provided. In addition, the complicated visa and work permit administration of foreign workers contributes perennial headaches and uncertainty to the entrepreneurial operation. Harsh conditions, hard work but low profit is the character of the low-pricing strategy. Chinese companies are certainly not content with this situation. When the market develops and the competition becomes tougher,

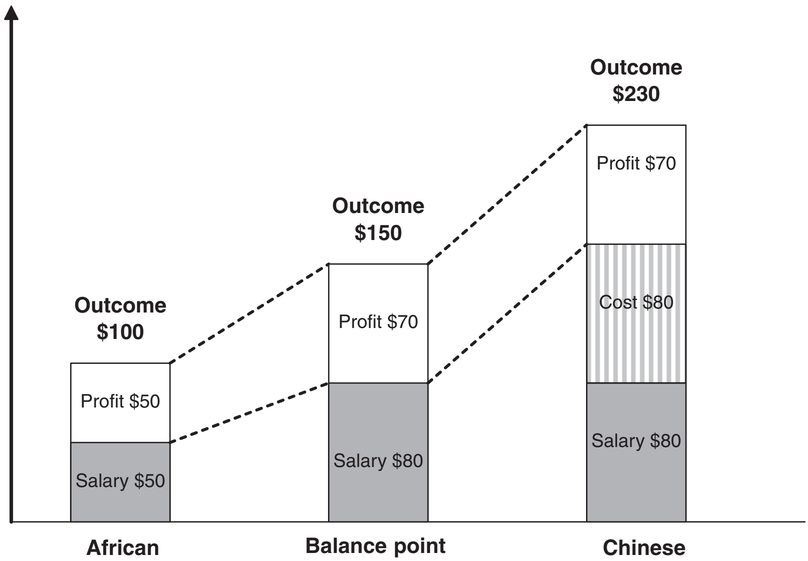

Figure 5. Balance point between Chinese and African workers

the enterprises have to enter the high-end market to look for space for growth and provide more value-added products or services. Correspondingly, they place more and more stress on the overall competence of marketing, sales, public relationship, technology, quality, etc. rather than on the single-dimensional cost-price calculation. Success will no longer rely on the productivity of Chinese workers, but rather on the integration of various strengths of employees from different nations into a unity of competence. Therefore the bulldozer model is by its nature just a short-term transitional strategy; companies who employ it must upgrade themselves to more sophisticated locomotives for the sake of long-term development in the local market. Bulldozers only play an important role at the beginning of construction, but locomotives become an indispensable part of the local society by establishing a mutually beneficial synergism.

Learning Process

However, the statistics and analysis mentioned merely show general trends. In reality, various Chinese companies demonstrate very different characteristics in their local employment practice, even when they are in the same country and the same sector. Some enterprises with over 100 employees have only three or four Chinese staff, whereas other companies in the same sector still heavily rely on Chinese managers and technicians after more than five years of operation. The large variation between companies reflects the experimenting processes of Chinese companies. Unlike western companies which have developed their systematic international strategy and best practice over decades, Chinese companies began their global operation substantially only after the initiation of the 'go global' policy at the beginning of the 21st century (Accenture, 2005). It is understandable that many companies adopt a conservative employment strategy because of unfamiliarity with local culture, difficulty in communication, uncertainty of success and inexperience in multi-national management. The localization progress thus largely depends on the executives' personal preference and capability as well as the enterprises' experience. The managers and companies who already have international operation experiences elsewhere are usually more prepared for local employment, including the localization of management.

In this context it is not helpful to criticize those who have not progressed to localization fast enough, because it is a complicated learning process and highly risky for young companies. They not only need time to get familiar with different languages, traditions and working styles, but they also need fundamental reform of their structure and culture for successful international operations. A number of traditional practices in Chinese enterprises, such as reliance on family members/ Guanxi (the Chinese-style concept of interpersonal relationship), must be changed to form an open and standardized organization. Even for the executives who already have this awareness in mind, implementation requires considerable time, practical insights and lots of experiments. Many enterprises are still unsure about the benefits and are closely observing the localization experiments carried out by other companies. The successes of their localized competitors will force them to take similar actions and the failures will daunt them.

Anyway, when a certain percentage of local employees have already been hired according to the regulations, the pace of localizing the rest is a matter for the company and depends on the needs of market competition. An impractical urge to hire more local staff may cause a malfunctioning of the enterprises and a huge loss in business operations. This will eventually harm the growth of enterprises and reduce employment opportunities in the African countries in the long run.

Conclusion

To conclude, Chinese enterprises' expansion in these two African countries is greatly impacting the local job market. Not only do they create tens of thousands of direct and indirect employments, but the contents of these jobs, the training and the management, will also influence the development of local human resources. Apart from the 'hardware' construction, Chinese operations in Africa should also contribute to the 'software' of local community. Yet, unlike the material infrastructures which are specific and fixed, the benefits of employment can vary significantly under different managements. It may become a great opportunity for African countries, if a well trained, experienced and motivated local workforce can be built through the constructions done by Chinese companies. Yet this also presents a big challenge, since the highly competitive Chinese companies and workers may dominate the markets if the local communities do not respond properly.

In order to successfully manage the employment issue, local government, local people and Chinese companies should cooperate together. For local government, the task is to create a fair and reasonable market environment for enterprises to flourish. A certain percentage of local employment and subcontracting ought to be demanded, but there should be enough flexibility to attract investments and encourage the growth of companies. For Chinese enterprises, long-term success needs more comprehensive market strategies. The localization of workforce and management is crucial to the implementation of the multi-dimensional strategies and in the interest of companies. For local people, there may be competition pressure on some sectors and some companies, but if local enterprises and workers develop their unique advantages in local markets, generally they can benefit from the booming markets. Local education programs should also be adjusted to meet the requirements of economic development, for example adding Chinese courses. Universities should enhance their communication with Chinese enterprises to promote the employment of their graduates. Chinese enterprises' impact on the local employment market cannot be simply judged as good or bad, but requires a consideration of all the influencing factors and temporal development so that the responsible parties can manage it towards a sustainable development for both sides.

Notes

1. Although there is still violent conflict in the east regions of the DRC, the political situation in most parts of the country has become stable and national reconstruction is the priority of the country's agenda.
2. This is a common practice for such kinds of framework agreements. Brazil and Germany provided loans to Angola under the same condition, although the amount of their loans was much smaller.
3. Estimation is based on interviews with the leaders of the local Chinese community.
4. The true name was omitted in order to protect the identity of the interviewees.
5. The $5bn framework agreement had not been implemented during the field research in December 2007.

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