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China's special economic zones and the industrialisation of Africa

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Abstract

Africa's interest in the Chinese experience of industrialisation has led to the development of SEZs on the continent. The past two decades have witnessed an evolution of Africa from relying on traditional industrial zones to implementing numerous modern international SEZs, and from having only seven China–Africa Economic and Trade Cooperation Zones to possessing modern African SEZs of various developers and operators. The African SEZs inspired by China are increasingly widespread. As a new strive for development, African industrialisation through SEZs is characterised by underlining export promotion and the preference for the labour-intensive manufacturing industry based on well-developed infrastructure and an active role of the state. China has been supporting African SEZs in the whole process from financing, construction, and management to industrial transfer and investments. Despite the significant opportunities that SEZs offer, African countries still face several limitations in implementing them successfully. African policy-makers and other actors involved in the SEZs can better adapt to the new approach of industrialisation by making relevant adjustments.

Keywords: Special economic zone, industrialisation, limitations, China-Africa Cooperation.

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Zones économiques spéciales de la Chine et l'industrialisation de l'Afrique

Résumé

L'intérêt de l'Afrique pour l'expérience chinoise en matière d'industrialisation a conduit au développement des ZES sur le continent. Au cours des deux dernières décennies, l'Afrique a évolué, passant des zones industrielles traditionnelles à la mise en place de nombreuses ZES internationales modernes, et de sept zones de coopération économique et commerciale Chine-Afrique à la possession de ZES africaines modernes de divers promoteurs et opérateurs. Les ZES africaines inspirées par la Chine sont de plus en plus répandues. En tant que nouvel effort de développement, l'industrialisation africaine par le biais des ZES se caractérise par la promotion des exportations et la préférence accordée à l'industrie manufacturière à forte intensité de main-d'œuvre, sur la base d'infrastructures bien développées et d'un rôle actif de l'État. La Chine a soutenu les ZES africaines tout au long du processus, depuis le financement, la construction et la gestion jusqu'au transfert industriel et aux investissements. Malgré les opportunités considérables qu'offrent les ZES, les pays africains se heurtent encore à plusieurs obstacles pour les mettre en œuvre avec succès. Les décideurs africains et les autres acteurs impliqués dans les ZES peuvent mieux s'adapter à la nouvelle approche de l'industrialisation en procédant aux ajustements nécessaires.

Mots-clés: Zone économique spéciale, industrialisation, obstacles, coopération Chine-Afrique.

Introduction

China's industrialisation has been such a success that it has made China the largest manufacturing country. More and more African countries are interested in China's industrialisation experience because, from the perspective of these developing countries, China's experience is more practical for emulation than that of developed countries. At the same time, China is willing to share its development experience and conduct extensive cooperation on SEZs. Chinese SEZs have made a distinct impact on shaping the modern SEZ as an industrial model in the world. It is widely noted that "the concept of the SEZ as part of a national industrial development strategy has been adopted from the Chinese model" (Signé & Johnson, 2018, p. 25).

This article tries to assess how African industrialisation is facilitated by China through SEZs.[®] The structure of this research begins with a literature review and methodology, before looking back on the genesis and development of SEZ in the process of Africa's pursuit of industrialisation. The features of African SEZs and the support from the Chinese part all the way are outlined. Finally, existing limitations of the SEZs are brought up, respectively followed by corresponding recommendations for African stakeholders, so that their policies can be adapted to the new approach of industrialisation.

¹⁰ Since SEZs include industrial parks, free trade zones and export processing zones among others, with the industrial parks being the most common, the term SEZ will be generally used representing various concrete forms in this paper.

I. Literature review

A few scholars have introduced Chinese SEZs in Africa in the early stage (Brautigam & Tang, 2011; Tao et al., 2016; Huang, 2018; Wang, 2019), which are also called Chinese official African Economic and Commercial Cooperation Zones or China-African Economic and Trade Zones in a different context. They elaborated on the history or pointed out challenges and solutions to these SEZs. Bräutigam & Tang (2011) Zhang (2013) and Zeng (2015) have also well presented the origins and the function of the first seven Chinese SEZs in Africa approved by China's Ministry of Commerce. However, over time, the pilot zones have given much knowledge on how to multiply them. The number of SEZs in Africa has increased to 237 in 2020 from 20 in 1990 (UNCTAD, 2021). SEZs have proliferated so rapidly that there have been a large number of SEZs of various developers and operators in Africa today. Although Wu et al. (2017), UNCTAD (2021) and Rodríguez-Pose et al. (2022) presented African SEZs as a whole, studies on the new whole picture, taking into consideration the typology of ownership, including African state-owned SEZs, many more Chinese SEZs recently built, as well as joint SEZs of Chinese investors and African governments have been few.

SEZs have more often than not been thought to make a real contribution to the industrialisation of Africa. Existing studies have referred to a few arguments: Chinese-sponsored Economic and Trade Cooperation Zones have promoted the industrialisation of Africa by providing "new sources of investment, employment, skills transfer and technology transfer" (Alden et al., 2021). Chinese lessons in developing SEZs for industrial development are valuable because SEZs can boost economic diversification and promote manufacturing (Kim, 2015). There are also presentations on the positive role of the industrialisation of a certain African country. For example, Nigeria has accelerated industrialisation owing to its SEZ programme which helps to attract investment and take advantage of its local and international market (IPRCC, 2015) and Chinese foreign direct investment in SEZs has catalyzed industrialisation in Nigeria through positive technology transfer (Chen et al., 2016). However, there are controversies about the effectiveness of SEZs for African industrialisation. Some scholars underline that the SEZ may have a direct or indirect negative impact on industrialisation. Firstly, Farole (2011) points out the risk that SEZs may be just enclaves disconnected from the local economies and that their activities are outsourced to foreign companies. Secondly, the fiscal incentives specific to SEZs for attracting investors constitute unfair competition for local firms outside of the zones (Manwaring & Teachout, 2020). Thirdly, what prevents the replication of Chinese practice of SEZs in Africa is the flaws in the political economy of SEZ schemes, more specifically as a result of inadequate knowledge and distorted incentives (Farole & Moberg, 2014). Finally, increased incentives and subsidies of African SEZs have made them tax havens for companies and have led to a "race to the bottom" (AfDB, 2018).

Some studies focus on country-specific challenges in the implementation of SEZs. For example, the problems with the SEZs in Zambia include "the weak institutional capacity and inefficient services of the public sector, inadequate infrastructure and weak linkages between the zones and local firms" (Zeng, 2016). In the case of Nigeria where are instituted the two remarkable bilateral cooperation zone, the Lekki FTZ and Ogun-Guandong FTZ, SEZs face common challenges in terms of "legal and institutional framework, resettlement, infrastructure, environment, zone management & operational know-how, and host government

ownership (World Bank, 2012)." Song (2019) indicates that there are a few factors constraining China's facilitating role for Africa's industrialisation in terms of Angola and Zambia: "a business-unfriendly financial environment, vast untapped labor and resource potentials, an imbalanced growth model, and cumbersome bureaucratic procedures".

To complement the existing literature, this article puts focus on various SEZs developed and operated in Africa based on inspiration from the Chinese ones. This paper shows how African industrialisation has been facilitated by China through SEZs. Finally, it identifies the development problems encountered by African countries at large in this endeavour.

2. Methodology

This article will combine document analysis of SEZs of African countries with first-hand data obtained through fieldwork in Ethiopia and Senegal. Among the documents are research reports and official presentations on the operation of SEZs. Ethiopia and Senegal will be the object of the case study as they are the pilot countries selected by the U.N. Industrial Development Organization for industrialisation promotion. What's more, Ethiopia is one of the African countries with the most SEZs and it developed them relatively early, while Senegal is a country that began to develop SEZs in quite recent years. These two countries were visited for fieldwork in 2018. The visited places for this study include some important industrial parks located in Addis Ababa, Hawassa and Dukem of Ethiopia, and Dakar and Diamniadio of Senegal. Data were collected through semi-structured interviews with officials in related government authorities, including the developer and operator of industrial parks, i.e. the Industrial Parks Development Corporation (IPDC) of Ethiopia and the Agency of Development and Promotion of Industrial Sites (APROSI) of Senegal. Officials at the Ethiopian Investment Commission and the Agency for the Promotion of Investments and Major Works (APIX) of Senegal were also interviewed because they are responsible for attracting investors for industrial parks; other interviewed stakeholders involve the investors/factory managers setlled in the industrial parks and the Chinese contractors for the construction of SEZs, such as CGCOC (China Geo-engineering Corporation Overseas Construction Group) and CCECC (China Civil Engineering Construction Corporation). Direct observations and the analysis of relevant documents solicited during the visits and interviews are also effective ways of study.

3. Findings

China has played a pivotal role in Africa's transition from relying on traditional industrial zones to modern SEZs, which have multiplied quickly in different African countries during the past one or two decades. With several comprehensive facilitative factors from the Chinese part in launching and developing SEZs, a new model of African industrialisation has emerged.

3.1 Factual lessons on the development of SEZs in Africa

3.I.I From African traditional industrial zones to modern international SEZs

Since their independence, African countries have made several attempts at industrialisation. Africa has had industrial zones since the 1970s. But in fact, most countries of Sub-Saharan Africa just began to develop zone programs in the 1990s (Farole, 2011, p. 36). These industrial zones are mostly not the modern SEZs and their achievement was limited. Senegal's industrial zones have been developed relatively early in Africa. According to (APROSI, 2019), the industrial zones of SODIZI and SODIDA date back respectively to 1973 and 1974. Later, the industrial zones of SODISA and SODIKA were also created. They are located in different regions of the country. The traditional industrial zone of Ethiopia is the Addis Industrial Village (IPDC, 2019). Established in the 1980s, it was the first-ever industrial zone in Ethiopia. Concerning SEZs, today there have been three in Senegal, respectively the SEZ of Diamniadio, the SEZ of Diass, and the SEZ of Sandiara. All of them have just been created since 2017, with the SEZ of Diamniadio as the first and major one. As for Ethiopia, in just several years since 2014, the Ethiopian government through IPDC has started to have a dozen governmental SEZs distributed all over the country, alongside some private ones like "Huajian" and "George Shoes". African governmental industrial parks following Chinese example has been generally inaugurated since 2015. The first governmental industrial park of Ethiopia, Bole Lemi started operation in 2014, followed by the flagship SEZ in Hawassa inaugurated in 2016; while in the case of Senegal, the first SEZ of Diamniadio was inaugurated officially in November 2018.

Established in different periods, African industrial zones as well as the traditional export processing zones are different from modern SEZs in many ways, for example, in terms of the tax regime and fiscal incentives, infrastructure conditions and government engagement, the provided service, etc. Just as an official from the APROSI has expounded on the case regarding the differences between the classical industrial zones and the SEZs in Senegal:

They are not of the same vision. The SEZs are specially designed to attract a lot of investors, especially foreign investors, and to create a lot of added value. The industrial zones, on the other hand, are incubators allowing nationals to go with craft to an industrial space. Craftsmen come and industrialize. In SEZs, we take industrial enterprises. It's about production, not incubation. Industrial zones have ordinary regimes, not special. The investors don't enjoy any advantage even when it comes to exporting. The infrastructure is very modest there. The state does not pay money to them.^①

Although the two kinds of industrial platforms are bestowed different ambitions, it is noteworthy that the traditional industrial zones of Ethiopia and Senegal are being modernized by the governments. With the inspiration of modern SEZs, the traditional industrial zones, like the Addis industrial village and SODIDA are undergoing modernization and will be integrated into a new general programme. The development, management, and operation experience learned with the SEZs can be used for revitalizing traditional ones. A traditional industrial zone can become a SEZ when benefiting from all the advantages. This is the case of

⁽¹⁾ Interview, APROSI official, August 7, 2018.

the SEZ of Sandiaram which is being transformed into a SEZ from a traditional industrial zone. Meanwhile, the launch of modern SEZs has not put an end to the momentum of the traditional industrial zones. For example, in Senegal, the traditional industrial zones of Fatick, Sédhiou, and Diamniadio are still being developed. Different ambitions mean that the traditional industrial zones and SEZs are complementary. A start-up small enterprise can be eligible to move into an SEZ when it has grown up and become competitive, especially in the international market.

3.1.2 From China's Official African Trade and Economic Cooperation Zones to African SEZs

The earliest Chinese SEZs were distributed in only several countries in Africa, i.e. two in Zambia, two in Nigeria, one in Ethiopia, one in Mauritius, and one in Egypt. They were established after 2006 with the initiative of the Chinese government. The whole or the lion's share of these seven SEZs has been Chinese-controlled. The economic cooperation zones can be seen as pilot overseas SEZs of the Chinese model. The seven earliest Chinese official SEZs in Africa were constructed and operated directly based on Chinese experience at home and the Chinese tried to reproduce such experience as much as possible in Africa. Through the first batch of Chinese official Cooperation Zones, the African host governments have been initiated in this endeavor. African officials in the countries with the seven Chinese SEZs can get to know and understand by dealing with them, while officials of other African countries also come to pay a visit to have a preliminary idea about them here on the continent. So, those Chinese SEZs in Africa have been a showcase appealing to African countries for embarking on this path and setting up more private or governmental SEZs. This is an effect of demonstration that arouses emulation.

The first industrial park of Ethiopia, the Eastern Industrial Park was just a showcase for Ethiopian leaders and other policymakers to get knowledge at home about the SEZ. It enlightened the Ethiopian government on what an industrial park was like and how it worked. The demand for preferential policies from the Ethiopian government by Chinese investors and the law-making process for the first SEZ were also a part of the initiation process. Later, the basic SEZs legal framework became common for those developed by the African government or Chinese or other SEZ investors. The Chinese Eastern Industrial Zone developers invited African government officials to China to see the industrial parks and presented the operations and issues concerned so that Ethiopian leaders could accept it in the African country. Several years later, the Ethiopian government got fully convinced of the benefits of SEZ and has developed a dozen governmental industrial parks while welcoming more investors to come to build and operate private industrial parks.

Therefore, the SEZs newly developed and managed by Africans have made African SEZs more pluralist. There has been not only an increasing number of Chinese SEZs in Africa but also an emergence of SEZs developed by African governments in recent years. The African states with governmental SEZs are even more active in creating a better environment to ensure the success of SEZs through policies and regulations since they are engaged in many senses.

3.1.3 The widespread distribution of African SEZs inspired by China

African SEZs inspired by China are found in more and more African countries, and in each country, the number of SEZs grows. In terms of the inspiration from SEZs of the Chinese model, Ethiopia, Nigeria, Kenya, Uganda, Angola, Djibouti, Egypt, Zambia, Rwanda, the Republic of Congo, Cote d'Ivoire, Mauritius, Mozambique, Tanzania, and South Africa are the African countries that have put into practices the most. Apart from the seven official cooperation zones, there have been a large number of SEZs in operation, under construction, or in the pipeline. In these countries, besides a few well-known examples, many more SEZs are being developed or under consideration. Ethiopia, Nigeria, Kenya, Uganda, and Zambia have the most SEZs. For example, in Ethiopia, over twenty industrial parks are to be accomplished. Apart from the Chinese Pearl River SEZ and the Naivasha SEZ under construction, Kenya is going to build two projects in cooperation with Chinese enterprises, the SEZ of Friendship City and the SEZ Mombassa. Following the steps closely of its two neighbours, Kenya and Rwanda, Uganda has been establishing 22 Industrial and Business parks (UIA, 2019). Quite a few Chinese industrial parks recently built can be found there. The giant project of the Enyimba Economic City of Nigeria is to begin after the fruits of economic diversification have been achieved with SEZs like Lekki and Ogun Free Trade Zones in this country dependent on the oil sector. The SEZs of the Chinese model in Africa have already transcended the pilot stage and are being brought to countries more widely in Africa. Many countries including Tanzania, Senegal, Morocco, Kenya, Nigeria and Angola have expressed their wish to learn from Shenzhen or build a "Shenzhen". More countries like Benin have got their first SEZ with the help of Chinese partners. Countries that would like to build their first SEZ can integrate the Chinese experience from scratch. The SEZs built early by Africans may be transformed according to the experience of Chinese SEZs. As "the South African SEZs are meant to improve the performance of the existing industrial development zones", Cissé (Cissé, 2012) notes that the model of SEZs in China is "sought after for applications across Africa".

3.2 The model of African industrialisation facilitated by China through SEZs

The model of African industrialisation facilitated by China through SEZs can be summarized as one based on state-led industrialisation in a relatively well-developed infrastructure environment, with a preference for an export-oriented manufacturing industry. This new industrialisation model found in some African countries reflects African countries' needs nowadays. The main features of this model will be illustrated in detail.

3.2.1 Export Promotion Supplemented with Import Substitution

The import substitution strategy of industrialisation prevailed in most African countries from independence to the late 1970s, before switching to export promotion from the 1980s to the late 1990s (Abegaz, 2018, p. 155). But the reality shows that the manufacturing industry development in Africa was almost static. The export-promotion industrialisation didn't fare well. The structure of the exports of Africa, especially sub-Saharan Africa has always been dominated by fuels and mineral and agricultural products. Many African countries have been suffering from a trade deficit.

With the SEZs, the industrialisation pattern is to carry out the strategy of export promotion complemented by import substitution. Export-oriented industrialisation aims at relieving the foreign currency crunch and the trade deficit of African countries. Meanwhile, the policy of export promotion can also help to avoid fierce competition in the local market for nationals. Therefore, the general requirement of Ethiopia for enterprises to be settled in industrial parks is to export 100% of their products, with a few exceptions since there are a small number of industrial parks dedicated to importing substitution. The latter ones are indeed dedicated to the internal market: Eastern Industrial Park is devoted to importing substitution except for the expansion area; Arerti Industrial Park is devoted to construction materials production and Kilinto Industrial Park is mainly for pharmaceuticals. Although not obliged to export, the investors in these industrial parks can enjoy incentives if they export.[®] All the other industrial parks, private or governmental alike, are just devoted to export. As for the three SEZs of Senegal, the investors settled in the SEZ of Diass are required to dedicate 60% of their products to export and in the SEZ of Diamniadio 50%. The other products in these two SEZs are devoted to importing substitution. Finally, the SEZ of Sandiara is more eclectic as the criteria set for it were that the investors there should achieve 50% of their turnover from export or import substitution, during the first 3 years (APIX, 2020).

3.2.2 Well-developed infrastructure for attracting investors "nest and phoenix" thesis

The infrastructure of the traditional industrial zones is incomparable to that inside and outside of the SEZs. In the vision of the Chinese, building industrial parks to attract investors to settle in is like building a good nest so that phoenix would be attracted to come. Apart from the one-stop-shop service providing all the useful services on site for the investors and an attractive tax and customs regime, a basic highlight that Chinese-style SEZs-driven industrialisation in Africa lies on the physical level. For the SEZs, the infrastructure can attain international standards and the logistical connectivity has been much improved. The industrial park has provided an environment in which the infrastructure is well developed, including the sheds, roads, electricity and water supply, telecommunication, and sewage treatment equipment inside the park. Meanwhile, the external infrastructure of the SEZs today is even more epoch-making. The rapidly expanded national road network, including the first expressways of the countries, the first standard gauge railways, water well drilling and water transmission projects, the power generation and transmission projects, the construction of ports, airports, bridges, ICT network ... all help to satisfy the needs of industrial activities. Such widely improved infrastructure has helped to allow industrial activities to intensify in the countries. At the same time, intra-African connectivity is being improved and there are more and more cross-border infrastructure projects. For example, the Ethiopia-Djibouti cross-border water transmission and Ethiopia-Kenya power transmission are just significant for industrialisation. Intracontinental connectivity through road networks and railway lines would facilitate the transportation of raw materials, products, and human resources. Not only can coastal countries develop export-oriented SEZs, but a landlocked state like Ethiopia can also have access to the ports easily. The industrialisation can benefit from sub-regional and regional integration owing to the improvement of infrastructure.

¹⁰ Interview, Official of Ethiopian Investment Commission, July 10, 2018.

3.2.3 Preference for the labour-intensive manufacturing industry

Nowadays, Africa is aimed at getting integrated into the world market as an exporter not only of raw materials but more of finished goods. To climb up the industry value chain, these countries are willing to develop manufacturing. There are industrial parks or enterprises in industrial parks engaged in the processing of minerals and other natural resources-related products in correspondence to the endowments of some African countries. However, manufacturing, such as textiles, apparel and shoes, leather products, ceramics, furniture, and food processing is still the industry, particularly popular due to their labour-intensive nature and the domestic demand. Such industrialisation through labour-intensive industry is adapted to the comparative advantage of African countries, in particular the relatively low labour cost. Many African countries have daunting difficulties in creating enough jobs. The labour-intensive light industry that Africa is introducing just addresses this problem. Even countries abundant in natural resources would like to diversify their economy to improve the economic structure in case of the fluctuations of commodities prices in the international market.

3.2.4 A more important role of the state

Africa's industrialisation model right after independence was state-centric. The state-led industrialisation of import substitution from the 1960s and 1970s turned into the market-led model in the 1980s and 1990s when the Structural Adjustment Programmes was implemented (Ajakaiye O & Page J, 2012). This means the role of the state has contracted since the end of the 1980s.

The SEZ of the Chinese model in general features an important role of the state in line with the Chinese developmental state and the control of neoliberalism by the regime of the CPC (Communist Party of China). In China's development of SEZs, especially in the early periods, the development corporations have been attached to the Administrative Committee of the government. Most of the important SEZs in China were state-run. The cooperation with the Chinese on the SEZs has inspired African states to formulate policies and allocate resources to lead and promote the process of industrialisation. The introduction of SEZ of the Chinese style helps to resume state-led industrialisation. The state would be an important factor in the industrialisation.

In Ethiopia, a dozen governmental industrial parks developed and managed by the IPDC have been the preoccupations of the state. The prime minister attends the inauguration of each of them. The public corporation is in charge of the development and operation, financing, w support in workers' recruitment, security, and so on. For example, in Ethiopia, local government staff helps to announce and organize the recruitment in villages for the investors settled in the industrial parks. The state also offers help to private industrial parks since they are also integrated into the general programme of industrialisation of the country and create job opportunities for the population. The investment commission/agency promotes both the governmental and private SEZs to potential investors. In Senegal, the representatives designated by the prime minister accompanied the investors in looking for workers from the local traditional tailoring workshops.⁽¹⁾ Having invited a Chinese construction enterprise to come to Senegal to construct an industrial park, it was the state that financed the first SEZ of the country - the SEZ of Diamniadio. It is the state that manages it as well. The state does many things to attract Chinese and other foreign investors to set up a factory in the SEZ of Diamniadio and facilitate their activities, in terms of customs clearance efficiency, and recruitment ... Financially, the state subsidizes the salaries of the workers of the foreign garment factory C&H during the months of training. The state also subvents the costs of meals and commuter buses for workers of this factory. The state has been engaged more than it did before as a neoliberal state.

3.3 The comprehensive facilitative factors from the Chinese

China's cooperation with Africa has markedly turned to industrialisation since 2006 when the Chinese government was determined to promote African industrialisation in the framework of Sino-Africa cooperation. China's support of African industrialisation is not an isolated undertaking, rather it's an integral part of comprehensive cooperation plans. African industrialisation promotion was a priority both within the "Ten Key Cooperation Plans" and "Eight Major Initiatives" proclaimed respectively in the 2015 Johannesburg Summit and the 2018 Beijing Summit of the FOCAC (Forum on China-Africa Cooperation). Indeed, cooperation on aspects like production capacity, trade, and investment facilitation, infrastructure connectivity, capacity building, financial service, agricultural modernization announced in the "plans" and "initiatives" also reinforce industrialisation. Furthermore, in recent years, the transfer of China's manufacturing industries to Africa has constituted an uncommon opportunity for industrial development for African countries. To encourage and give impetus to Chinese investment in Africa, China has pledged to step up policy guidance and mobilise all interested parties.

The launching of African SEZs for the industrialisation has been impelled by four groups of facilitative factors from the Chinese part during the whole process as is shown in figure I.

⁽¹⁾ Interview, staff of CGCOC, August 24, 2018.



Figure I Chinese impetuses for the launching of SEZs in Africa

3.3.1 Financing

Funding of US\$10 billion for production capacity cooperation was announced in the FOCAC 2015 when the cooperation policy on industrialisation was emphasized. In the 2018 Summit, another US\$10 billion special fund for development financing was set up as well. The SEZs in Africa invested by the Chinese may be eligible to get funding from China-Africa Development Fund and the China-Africa Fund for Industrial Cooperation (CAFIC). China-Africa Development Fund is dedicated to providing shareholding funding to Chinese investment projects in Africa. The first industrial park of Ethiopia, the Eastern industrial zone was just invested in part by this Fund. What's more, China provides loans to African governments mainly through the Eximbank of China for the construction of some SEZs.

3.3.2 SEZ and infrastructure construction

The construction of African SEZs is often an EPC (engineering, procurement, and construction) project. They are often designed in China, after communications with the African owner or development partner, and constructed by one or more Chinese contractors. So the design of the structure and the functions of the SEZ reflect many ideas of Chinese SEZs at home. In terms of the realization of the infrastructure of SEZs for industrialisation, many urban, regional, or even trans-border projects outside of the SEZs are put in place also through cooperation with China for stable and cheap power and water supply and convenient logistics transportation. The activities of the SEZs can benefit from them directly. For example, the project for the electric power transmission and distribution lines of Ethiopia can supply power for up to 16 industrial parks. The Adama industrial park is served by the wind power built earlier by Sinohydro, the Adama railway station of the Addis Ababa-Djibouti railway, and the Addis Ababa-Adama Expressway. There are many Chinese construction projects infrastructure across Africa.

3.3.3 Management and operation of African SEZs

Chinese managers in African SEZs are relatively experienced in SEZ management and operation. The African officials and the personnel in the SEZs are often willing to get experience sharing from China or their Chinese counterparts. It has been common for African states interested in undertaking industrial parks to organize delegations to visit China, and even follow some training in China. For instance, the government officials and staff in the SEZs of Ethiopia, South Africa, and Cote d'Ivoire have been trained in China. The African personnel responsible for SEZ affairs would like to emulate what they have learned about in China in their own countries. The visit to the SEZs and training have been carried on in Africa as well. African SEZs inspired by China receive visiting delegations, such is the case in Ethiopia, the SEZs of which have been frequently visited by the heads of state of many other African countries. As for the training, the personnel having been trained in China can further train more of other national staff back home. The flagship Hawassa Industrial Park of Ethiopia has held training for the administrative personnel of other governmental industrial parks to spread more widely the knowledge and experience learned in China. Since Africa hopes to attract Chinese investors and receive Chinese industrial transfer, it is rewarding for the developers to shape the African SEZs in a more or less Chinese way. Such SEZs are a place of preference for Chinese investors because they are more familiar with them and feel at home.

Chinese SEZs in Africa can be operated by a Chinese private or state-owned enterprise, or by a joint venture of Chinese or Chinese and Africans. There are two advantageous situations for Chinese SEZs in Africa. The first situation is that an African country is in partnership with a certain Chinese province or municipality in developing SEZs, and in this process, the management and operation are carried out together by the two parties. This is the case of the Lekki Free Zone operated by the personnel of Nanjing Jiangning Economic and Technological Development Zone of Jiangsu province, the Adama-Hunan Industrial Park operated by the personnel of Changsha Economic Development Zone of Hunan Province, the China-Egypt Suez Economic and Trade Cooperation Zone operated by the personnel of the TEDA SEZ of Tianjin, the Mauritius Jin Fei Economic Trade and Cooperation Zone involving Shanxi Province and the Zambia Jiangxi Economic Cooperation Zone (JXECZ) supported by Jiangxi Province, etc. An

apparent advantage of such kind of Chinese management team is that they've already been full of successful experiences back home. The second situation is that certain SEZs cluster the investors from the same place in China, though not exclusively. Not only the African SEZs operated by the management team of Chinese provincial/municipal SEZs can attract Chinese clusters of investors from the same hometown, but also the SEZs operated by Chinese private enterprises can work towards this. For the SEZs in Africa of the clusters of Chinese of the same origin, the Chinese local government concerned can assist with all kinds more easily, especially when it comes to attracting investors and conducting publicity. In Uganda for example, the following industrial parks are all connected to a certain province of China in their background: the Liao Shen Industrial Park (Liaoning Province), Uganda-China Guangdong Free Zone (Guangdong Province), Sino-Uganda Mbale Industrial Park (Hebei Province), and Africa Shandong Industrial Park (Shandong Province).

To sum up, there are three scenarios for the management and operation of African SEZs of Chinese style. Firstly, the Chinese SEZs in Africa have maintained to a large extent the way of management and operation of the SEZs back home, thus being a showcase to the Africans. Secondly, for the governmental SEZs developed solely by African states, the officials and the staff involved visit or even go for training in China. Some may also invite Chinese experts to guide them at the initial stage of their SEZ, such is the case of Hawassa Industrial Park. Finally, for the SEZs jointly developed and operated by Chinese and Africans, African staff can learn from the major role that the Chinese play in the cooperation all the way.

3.3.4 The transfer and creation of Chinese manufacturing enterprises in African SEZ

Chinese investors are seeking investment opportunities in Africa. Some want to create a business there, while others may just transfer their existing factories from China in consideration of better production factors. Either way, as the state of China, plays the leading role in the economy, including the private sector, its encouragement, and support are the important impetus for the arrival of Chinese investors in Africa. As an Ethiopian official note, "China has its policy of the government for investors to go global for investment. Other states don't promote it. Promotion means the Chinese government offers enterprises many incentives for them to go abroad. ".¹⁰ Indeed, apart from many incentives for going global and general foreign cooperation, there are many policies and incentives provided to Chinese investors for investment in Africa on financing, tax, foreign currencies, and formality simplification. The Chinese government encourages Chinese financial institutions to give preferential treatment to them. The Chinese industrial production investors may also take use of the financial support of the funds like China-Africa Development Fund and CAFIC. According to China Foreign Exchange Administration Agency, Chinese enterprises who what to invest in Africa can go to change the foreign currencies they need there without amount limitation. The Chinese enterprises benefit from a tax rebate for the equipment, machines, and devices that they brought for their investment in Africa according to the stipulations on foreign aid. More precisely, the export rebate policy applies to exports using foreign aid concessional loans and funding for joint venture projects.

¹⁰ Interview, official of the Ethiopian Investment Commission, July 10, 2018.

Chinese industrial investors in turn constitute important actors in the industrialisation drive of Africa. Now that Chinese investors in search of investment opportunities in Africa are very important groups adapted to the African industrial development stage, the African industrial parks built in the Chinese model can be more attractive to them by making them feel at home. The "nest and phoenix" thesis is even more significatively appropriate in Africa because the Chinese not only help to construct the "nest" for African countries but also bring there the "phoenix" afterward. Without the intention of massive Chinese enterprise relocation or creation in those African countries during the cooperation negotiation before the construction of SEZs, it would be less likely for African developers to be determined to launch the projects of SEZs.

4. Limitations of African SEZs and corresponding policy recommendations

The rapid multiplication of SEZs in Africa has been propping up African industrialisation. However, as most of the SEZs concerned are still at their primary stage, generally some problems have limited the SEZs from playing their part to the full.

4.1 Weakness of the national industrial foundation

Due to the underdevelopment of the industrial base in Africa, the local supply chain is far from complete. Often, manufacturing investors have to import the majority of the materials they need for production. For example, it's a widespread phenomenon that Chinese apparel enterprises have to import raw materials from China, even the packaging materials are sometimes not available in the local market of the African country. The investors rely heavily on imports, which increases their production cost and time, takes the edge off the competitiveness for the attraction of investors, and deprives them of broader opportunities for local industrialisation.

To climb up the industry value chain, the foundation should be consolidated. Both Chinese and African governments should encourage the transfer of and investment in the whole supply chain through cooperation. Investors should extend their local linkage for a more complete industrial chain so that industrial raw materials, including intermediate goods or components, could be supplied locally. This is realistic because investors are motivated to move towards this target, for example, Huajian Industrial Park and George Shoes Industrial Park are building a complete industrial chain for their leather shoe production in Ethiopia.

4.2 Infrastructure insufficiency

Despite the significant improvement, the African infrastructure service is still insufficient and the costs of water, power, telecommunication, and transport are high in some African countries. When power is in short supply, unstable and expensive, the industries won't move in or function well. The underdeveloped transportation is time-consuming, expensive, and unsafe as well. Due to various reasons like project delay and problems in the implementation, there is sometimes a time gap between the construction of infrastructure and the launch of FDI industrial activities. Although for the sake of industrialisation and job creation, the economic benefits are not the priority in the early years, the governmental SEZs should be

well managed so that they would not become a burden for the African states. African countries need to continue with their efforts in infrastructure service and connectivity. Infrastructure construction should keep pace with the economic activities based on it, to ensure financial sustainability and form a benign circle of infrastructure and economic development.

4.3 The Financial pressure on the government

The construction and operation of the industrial park require high capital input. At the early stage, the operation of the SEZ is not profitable and needs continual investments. According to the experience of the cooperation zones, it takes about 15 years to attain the profit period. As Zeng points out, "the developers' main profit will ultimately come from the value increase of land once a zone is turned into an industrial and commercial hub like Shenzhen." (Zeng, 2015, p. 4) After massive financial input during the first five years, the following ten years would see the zones just make even before being profitable regularly (Zhang, 2013). This long period of investment with slow returns constitutes a financial challenge for the developers. Therefore, it seems that it is not easy for a short-term profit-seeking private investor to be the developer of large SEZs. As an official of Diamniadio industrial park revealed, "we wanted to find a private to invest, but it began to take a long time, so the government-financed".^① In the case of Chinese Economic Cooperation Zones in Africa, even though some Chinese developers are private, they often enjoy subsidies and financing assistance from the Chinese government (Tang, 2015). But anyway in general, most of them still need to struggle with their financial situation within a certain period.

When it comes to African governmental industrial parks, such investment needs to put pressure on the state due to the limited financial budget and the supervision of the IMF. Indeed, an interviewed official called the latter an "economic financial interference" and noted that they were under pressure from foreign actors telling them what is wrong and what is not to do.[®] The practice that African states finance and develop SEZs is contrary to the philosophy held by the IMF and the World Bank of giving priority to the private sector for driving economic growth. The governmental subsidies and tax reductions for the investors in the SEZs are not encouraged by them. Instead, these international financial organizations have attached conditions like public spending reductions and privatization reinforcement when providing loans. Just as an enlightened official in the interview has observed, "we always wait for guidance from the IMF and the World Bank. They always make instructions that you cannot spend, you cannot get into debt"[®]. So the state investment in the SEZs, subventions, and incentives to the investors are constrained externally.

To alleviate the financial pressure on the government, various forms of development of SEZs can be adopted. This would make the developers and operators pluralist. Alongside the African governmental SEZs, the foreign private ones and the joint venture between private foreign investors and the African government can also be encouraged. The state finances the governmental industrial parks with its budget, through loans or PPP. What's more, faced with external forces that may deviate from the industrialisation

¹ Interview, APROSI official, August 7, 2018.

² Ibid.

³ Ibid.

path with SEZs, only by insisting on the national development programme in an autonomous way can the African states push through their plan of SEZs.

4.4 Limitations of the internal market and scanty intra-African trade

According to the policy implemented by African states, investors in the industrial parks are often required to sell the majority if not the whole of their products in the international market. Besides, except for a few countries with large populations like Nigeria, Ethiopia, Egypt, and South Africa, most African countries do not have a big domestic market. However, the fragmented African market and the shortage of infra-African trade are expected to be improved by the regional integration propelled by the AfCFTA. In fact, not only the market can be common, but also the movement of raw materials, technicians, and capital within Africa would be intensified. Although all the African countries cannot implement export-oriented industrialisation identically, investors from one African country in the region can settle in and benefit from the good industrial platforms of another. For example, In the Diamniadio SEZ of Senegal, there are Ivorian, Tunisian and Malian investors. The settlement of African investors in other African countries is also helpful to expand the operation and management knowledge of the SEZs to their country of origin.

4.5 Monetary policies not conducive to the industrialisation of African countries

It's common to see strict foreign exchange control restricting the free flow of capital in Africa, which may discourage investors and creates inconveniences to their business. In certain cases, it's difficult to keep foreign currency in the local account for over a month. Investors also suffer from exchange rate fluctuations. What's more, there are some problems specific to the CFA franc zone countries. The CFA franc pegged to the relatively strong euro is conducive to the import of manufactured goods and not conducive to exports. Such conditions are therefore not favourable for local enterprises to develop processing and manufacturing industries. Investors can't enjoy the monetary flexibility in terms of the exchange rate to improve their competitiveness in the exportation of their products. The CFA franc and euro gives an advantage to the investment from EU countries, in particular, France, while investors from other countries face difficulties related to the regime of the CFA franc. Today, China has helped many countries of the CFA franc zone to establish modern industrial parks, to name just a few, the Diamniadio Industrial Platform in Senegal, the PK24 Industrial Park in Côte d'Ivoire, the Glo-Djigbé industrial zone in the Republic of Congo. Many more will be established in the future. So related countries must embrace an autonomous currency favourable for their industrialisation and international trade.

4.6 The contraction of the state capacity

The retreat of the state following the neoliberal reforms has stopped it from playing enough roles in supporting industrialisation and providing as many resources as possible. It is not easy to coordinate private service providers for water, electricity, telecommunications, banks, security protection, and the like to the SEZs. Chinese SEZs at home function in an environment marked by the strong leadership of the state in the private sector. Wu et al. (2018) note that in the case of China, the SEZs rely on the strong support of the government, and the coordination between the government and the SEZ development corporation has an important impact on the construction and operation. Through centralized management, China has carried out profound government-enterprise cooperation, with the government-dispatched departments and the SEZ management committee effectively maintaining the stable operation of the SEZ. On the fiscal and taxation level, many SEZs have also received a large number of rebates, reductions, and exemptions from the government (Wu et al., 2018). Therefore, the inspiration of the Chinese SEZ model means that the engagement and support of the African government should be strengthened as well.

The SEZs have led to higher requirements for the state to play a leading and coordinating role. The state agency responsible for the administration of both industrial zones and modern SEZs needs a stronger capacity. This is especially the case for the state agency managing and operating the governmental SEZs. The governmental authorities, on the one hand, taking charge of the SEZs, like the Free Zones Authority, Agency for Development and Promotion of Industrial Sites, and Industrial Park's Development Corporation[®], and on the other hand, in charge of attracting investment, like the investment agency or commission, tend to play a more active role in the industrialisation. Today, many African states are getting more developed by pushing for the industrialisation through the creation of favourable conditions.

4.7 African work culture and labour laws and regulations

The work pace, work hours, and labour laws and regulations applied to the African SEZs are different from Asian or specifically Chinese ones. They have something to do with the work culture and life habits. Many African countries have made their laws and regulations by referring to those of European developed countries. Strict laws and regulations in favour of local labours are good for the protection of their interests. However, this aspect should be adapted to the African developing countries. For African SEZs mainly relying on the importation of raw materials for manufacturing and the sales of products in foreign markets, the low labour cost is the biggest attraction for investors. Frequent strikes organized by labour unions harm the normal production and delivery of products and would finally harm the sustainability of the SEZ. It's better to find a compromise between the investors and the workers in terms of work efficiency, over time, the interests of investors and the rights of workers. For labour-related issues, African government departments concerned need to keep a balance in protecting the two parties.

¹⁰ Responsible for the establishment, development, management, maintenance, supervision and control of SEZs.

Conclusion

The early African industrialisation efforts made through traditional economic zones have been advanced with modern SEZs. The concept of SEZs of Africa cannot be reduced to the several initial China-Africa cooperation zones in the 2000s. Over time, African states have been steered into developing modern SEZs of various types and ownership, which are distributed widely. This has generated a new approach to the industrialisation of Africa compared with its former practice. The China-Africa cooperation has propelled a lot of African countries to try the path of industrialisation through SEZs. This path is characterized by the strategy of export promotion supplemented with import substitution, well-developed infrastructure for attracting investors, the preference for the labour-intensive manufacturing industry, and a more important role played by the state. This impetus has been made possible with the support of China in the financing, construction, management, and operation, as well as industrial transfer and investments. The everdeepening partnership between China and African countries helps to reinforce their joint efforts in promoting African industrialisation. It should be noted that the African states have been holding the reins of the SEZ development, with autonomous decision-making based on local conditions. The rapid expansion of SEZs in Africa shows the popularity and success of the implementation of SEZs in the first period. However, alongside this great opportunity, there are still considerable problems on the level of the supply chain, financial pressure, state capacity, monetary policies, internal market, and work culture. Relevant recommendations have been proposed correspondingly. An objective overview of the latest development of SEZs in Africa makes for the continuous improvement of their operation. Only by sweeping away the obstacles can the industrialisation achieve unprecedented breakthroughs.

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