Special Economic Zones: Lessons from the Global Experience

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Special economic zones (SEZs) or industrial parks can be an effective instrument to promote industrialization and structural transformation, but only when implemented properly in the right context.

More than 50 years of experience with special export zones yields a mixed picture. There are notable successes, particularly in Asia and Latin America, and disappointments, more common in Sub Saharan Africa. This uneven record fuels a debate about the rationale and justification for using SEZs as an instrument for economic development. What are the global lessons from the use of SEZs in the broader effort to achieve structural transformation? Are the zones effective in promoting private-sector development? What are the risks of promoting SEZs in low-income countries, and what strategies will enable developing countries to minimise those risks and harness the power of SEZs to stimulate growth? This paper addresses these questions, and sheds light on the key issues for policymakers in developing countries.

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Abstract

Special economic zones (SEZs) or industrial parks can be an effective instrument to promote industrialization and structural transformation, but only when implemented properly in the right context. So far, the results are quite mixed globally, with successes, such as those in Asian and Latin American countries, and struggling operations, most notably those in Sub-Saharan Africa (SSA). The uneven record often stirs up debates about the rationale and justification for using SEZs or industrial parks as an instrument for economic development. What are the global lessons from the use of SEZs or industrial parks in the broader effort to achieve structural transformation? Are the zones effective in promoting private-sector development? What are the risks of adopting policies in low-income countries? Most importantly, what strategy will enable developing countries to effectively harness the power of industrial parks to upgrade industry and achieve economic transformation? This paper addresses these questions, and sheds light on key related issues for policymakers in developing countries.

JEL codes: L5, L6, O1, O2, O3, O4, O5, R1, E2.

Key words: Special Economic Zone, Industrial Park, Industrial Development, Industrialization, Development strategy.

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I. The Concept and Definitions of SEZs

Special economic zones (SEZs) or industrial parks are proliferating around the globe. The zones can be effective instruments to promote industrialization if implemented properly in the right context. Some emerging economies, especially those in East Asia, offer examples of success. However, such zones are expensive, risky endeavors that require careful planning. They can be a tool for political speculation rather than a tool for economic development, and some zones, the so-called "white elephants" fail entirely. This paper examines the zone phenomenon by looking at what is known about the conditions that tend to lead to success and failure of these endeavors.

The term "special economic zones" (SEZs) covers a broad range of zones, such as free-trade zones, export-processing zones, industrial parks, economic and technology-development zones, high-tech zones, science and technology parks, free ports, enterprise zones, and others. Table 1 shows the most common types that have been created in recent years.

Table 1. An Overview of Common Types of Special Economic Zones

Name	Definition
Free Trade Zones	FTZs (also known as commercial-free zones) are fenced-in, duty-free areas, offering warehousing, storage, and distribution facilities for trade, transshipment, and re-export operations.
Export Processing Zones	EPZs are industrial estates aimed primarily at foreign markets. They offer firms free-trade conditions and a liberal regulatory environment. There are in general two types of EPZs: one is a comprehensive type, open to all industries; another is a specialized type, only open for certain specialized sectors/products.
Comprehensive Special Economic Zones	Comprehensive SEZs (also called "Multi-functional Economic Zones") are zones of a large size that have with a mix of different, industrial, service and urban-amenity operations. In some cases these zones can encompass a whole city or jurisdiction, such as Shenzhen (city) and Hainan (province) in China.
Industrial Parks	Industrial Parks (also called "Industrial Zones") are largely manufacturing-based sites. Some multi-functional ones similar to "Comprehensive Special Economic Zones" (listed above) exit, but usually operate at a smaller scale. The parks normally offer a broad set of incentives and benefits.
Bonded Area	Bonded Areas (also known as "Bonded Warehouses") are specific buildings or other secured areas in which goods may be stored, be manipulated, or may undergo manufacturing operations without payment of duties that would ordinarily be imposed. To some extent, a "bonded area" is similar to a "free trade zone" or "free port." However, the major difference is that a "bonded area" is subject to customs laws and regulations, while a "free trade zone" is exempt from these provisions.
Specialized Zones	Specialized Zones include science/technology parks, petrochemical zones, logistics parks and airport-based zones.
Eco-Industrial Zones or Parks	Eco-industrial zones or parks focus on ecological improvements in terms of reducing waste and improving the environmental performance of firms. They often use an "Industrial symbiosis" concept and green technologies to achieve energy and resource efficiency. Given the severe environmental challenges, an increasing number of countries is embracing this new type of zone.

Note: This is not an exhaustive list. *Source:* FIAS (2008), Zeng (2010) and author's research.

Though these zones differ from one another, they all share certain hallmarks. Broadly, four characteristics define the SEZ concept: (1) it is a geographically delineated area, usually physically secured; (2) it has a single management or administration; (3) it offers benefits for investors physically within the zone; and (4) it has a separate customs area (duty-free benefits) and streamlined procedures (FIAS, 2008).

Additionally, these zones share features that contribute to the "special" nature of the SEZ. These are: (1) a special regulatory regime: zones normally operate under more liberal economic laws than those that typically prevail, regarding issues such as labor, land use, and foreign investment; (2) public services: zones are normally serviced with efficient customs, fast-track registration and licensing, often through "one-stop-shop" services; (3) infrastructure: zones have much better and more reliable infrastructure such as roads, power, and water, compared to the domestic economic environment; and (4) fiscal incentives: the zone's investors, particularly its anchor investors, often enjoy capital freedoms and certain levels of tax incentives and subsidies.

The first modern industrial SEZ was established in Shannon, Ireland in 1959. In the 1970s, East Asian and Latin American regions began establishing such zones - initially mostly in the form of export processing zones (EPZs) - to attract foreign direct investment in labor-intensive manufacturing sectors to encourage exports (Farole, 2011).

A zone represents a divergence from the traditional import-substitution policies. EPZs are normally fenced-in estates with strict customs controls and most of the products (normally over 80 percent) produced in these zones must be exported. This model was successful in many countries, such as the Republic of Korea, Taiwan, China, Vietnam, Bangladesh, Mauritius, the Dominican Republic, and El Salvador (Farole and Akinci, 2011). Many new EPZs have been created since. By 1986, according to the International Labour Organization (ILO), 176 EPZs were operating in 47 countries; and by 2015, their presence had grown to around 4,300 EPZs in over 130 countries (The Economist, 2015).

SEZs are typically established with the aim of achieving one or more of the following four policy objectives (Madani, 1999; Cling and Letilly, 2001; FIAS, 2008; Zeng, 2010; Farole and Akinci, 2011; Fuller and Romer, 2012): (1) attracting foreign direct investment and promoting exports and industrialization; (2) serving as "pressure valves" to alleviate large-scale unemployment; (3) supporting a wider economic reform strategy; and (4) acting as experimental laboratories for the application of new policies and approaches.

These are the broad aims for zones, but no universal standard formula exists to measure their success. Typically, "success" of a given program largely depends on whether it meets the objectives defined when it was established (generally for a time horizon of 10 to 15 years), and whether it is commercially viable in relation to the total investments in the endeavor. Such objectives are normally linked with quantitative measures of economic development outcomes, such as investment, employment, foreign exchange, and/or export generation; and in some cases, also linked with the economic and policy reforms, depending on the initial goals of the program. In order to keep track of its progress, a proper monitoring and evaluation system needs to be established to check whether the zone program is on the right track, and to determine whether any adjustment or remedial measures need to be taken. In addition, an exit mechanism may also be needed to stop an ill-designed program at an early stage. On the other hand, given that zones take time to generate impact, one should not declare its "success" or "failure" too early to avoid killing a zone program prematurely.

Many economists believe that SEZs can achieve industrial development in an efficient and effective way (Lin and Monga, 2010). In particular, investing in SEZs can: 1) provide a bundling of public services in a geographically concentrated area; 2) improve the efficiency of limited government funds/budgets for infrastructure; 3) facilitate cluster development, or agglomeration of certain industries; and 4) enhance urban development by providing facilities conducive to improved living conditions for both basic wage workers and highly skilled technical workers, taking advantage of economies of scale in provision of environmental services, such as water treatment plants and solid waste treatment plants. Thus, the SEZs can be conducive to both job creation and income generation, and potentially, to protecting the environment and promoting green growth and eco-friendly cities (Lin and Wang, 2014).

Nevertheless, it is important to note that special economic zones should only be used to address market failures or binding constraints that cannot be addressed through other options. If the constraints can be addressed through countrywide reforms, sector-wide incentives, or universal approaches, then zones might not be necessary.

II. Are SEZs Effective in Driving Private-Sector Development?

Measuring the direct impact of special economic zones at the firm level – and especially the impact on the domestic enterprises - presents a challenge, due in part to a lack of data, and in part due to the difficulty in finding appropriate enterprises that can serve as "controls" with which to make valid comparisons. Indirect measures can suggest the impact of zones on exports, investment, employment and spillovers on firms outside zones, yet even these assessments are scarce. So far, the major source of information on the zones' global impact is International Labour Organization's EPZ study (Boyenge, 2007). As of 2007, it estimates, EPZs created about 68 million direct jobs and US$851 billion worth of exports, accounting for about 41 percent of global exports (FIAS, 2008).

However, the global picture is quite heterogeneous. Based on disaggregated studies, the impact of SEZs in driving economic and private-sector development seems to be quite mixed across countries and regions.

Successful SEZs are able to attract large numbers of multinational companies and domestic firms, and to make great contributions to business investment, employment generation and economic development. In China, estimates show that the national-level SEZs (including various industrial parks) account for more than 30 million jobs and about 22 percent of national GDP, 46 percent of foreign direct investment, and 60 percent of exports (Zeng, 2010).

An analysis of panel data of 270 cities at the prefecture level (a jurisdiction between county and province in China) over 23 years finds that the introduction of a major zone in a city in the post-reform years led to an average increase in the GDP level of 12 percent, with the effect depending on the type of zone. The long-term (cumulative) effect of an SEZ could be an increase of about 20 percent in the GDP level (Alder, S., et al., 2013). Another analysis (Wang 2013) of 321 prefecture-level cities between 1978 and 2008 shows: a) on average, an SEZ program increases the level of per-capita FDI by 21.7 percent, and the growth rate of FDI by 6.9 percentage points; b) the SEZ program generates significant agglomeration economies; it increases the technological progress of the earlier treated municipalities by 1.6 percentage points compared to the later ones; and c) the average wage of workers in the treatment group increases 8 percent more than in the

control group. (Over the evaluation period, the cost of living rises by 5 percent.)

However, SEZs in China have experienced mixed results with regard to export diversification. For instance, Schminke and Van Biesebroeck (2013) compare ETDZs in China with Science and Technology Industrial Parks (STIPs). They find significant differences between the two types. Firms locating in an ETDZ achieve much higher export values, driven by higher volumes of trade and numbers of destinations. Firms locating in a STIP perform best on quality dimensions, fetch higher export prices, and have more success exporting to high-income countries (Schminke and Van Biesebroeck, 2013).

Elsewhere in Asia, Johansson and Nilsson (1997) find that SEZs have positive impacts on exports in Malaysia, Mauritius, and Sri Lanka. Their findings indicate that SEZs are more likely to have a positive impact on exports when countries adopt outward-looking, export-oriented policies at the national level to promote their SEZs. In particular, Johansson and Nilsson (1997) highlight the case of Malaysia's "catalyst effect" on potential domestic exporters by filling an "ideas gap" in the market. In essence, by the early 1990s in Malaysia, SEZs attracted the right mix of foreign investors who brought along knowledge on how to master production, marketing and distribution of export goods. This knowledge translated into spillover effects on the local market, and stimulated domestic firms to enter the export market and to increase their production of export goods, the authors contend. The Philippines has experienced tremendous economic growth through its eco-zones, which focus on agro-industry, tourism, recreation, commerce and financial services (the environmental aspect of zones will be addressed in section IV). Eco-zones' share of national merchandise exports increased from 22 percent in 1995 to 76 percent in 2003, and eco-zones' share of national foreign direct investment increased from 30 percent in 1997 to over 81 percent in 2000 (FIAS, 2008).

Evidence from many parts of the world suggests the potential of the SEZ phenomenon to spur growth and employment. Examples include: The more than 7,000 firms at the Jebel Ali Free Zone in Dubai currently employ 170,000 people, or 13 percent of Dubai's workforce. By 2012, the Aqaba Special Economic Zone in Jordan had attracted $18 billion in investment and generated 10,000 jobs. Eight zones in Bangladesh attracted 412 firms that have made investments totaling $2.6 billion, and have employed 350,000 people (IFC, 2016). In the Dominican Republic, employment in industrial-free zones rose from 500 in 1970 to almost 200,000 in 2007, and in Costa Rica, the EPZ share of manufactured exports jumped from less than 10 percent in 1990 to 55 percent in 2003, with export items changing from mainly apparel and textile products to modular circuits and other electronic components (FIAS, 2008). In Madagascar, a $165 million World Bank project contributed to a tenfold increase in the stock of formal enterprises and a near seven-fold increase in the number of formal jobs in the growth poles of Fort Dauphin and Nosy Be, despite a complex political environment. The project successfully integrated a number of reforms to improve the business climate and job creation around these growth poles (World Bank Group, 2016).

However, the impacts of SEZs are not uniform, as analyses of various outcomes show.

- Export impact and diversification

In some countries, SEZs have not positively affected exports. Johansson and Nilsson (1997) assert that countries that fail to eliminate trade restrictions, and fail to adopt export-oriented

strategies are less likely to experience positive impacts on exports. They highlight examples from Mexico and the Dominican Republic. For example, the Dominican Republic developed a rationale for SEZs and created what many considered to be successful SEZs with catalyst effects, increased employment and high levels of productivity (Rhee et al., 1990); nevertheless, SEZs in the Dominican Republic did not have a significantly positive impact on exports. The country continued to practice import substitution policies and maintained a series of trade barriers, which Rhee et al. argue stunted the impact of SEZs on exports. SEZs in the Dominican Republic today continue to be largely isolated from the rest of the economy (Carneiro et al., 2015).

In South Asia, Aggarwal (2005) and Aggarwal et al. (2008) assess the impact of SEZs on export diversification but find SEZs have mixed results. For instance, in 2008, after a 40-year-long record with SEZs, India's SEZ exports represented only 5 percent of overall exports; by contrast, in a short span of time, SEZ exports accounted for nearly one-fifth and one-third of exports in Bangladesh and Sri Lanka, respectively (Aggarwal, et al., 2008). At the time of these findings, India was undertaking a major expansion of its SEZ policy; nevertheless, recent studies, including a report by the Comptroller and Auditor General's office in India, continue to highlight the mixed success of India's SEZ policy (CAG, 2014).

The roles SEZs have played in export diversification have varied by country, across sectors and products, as Aggarwal et al. (2008) also highlight. Substantial exports from SEZs have been observed in some sectors that were already outward-oriented before SEZs appeared in the market – thus making export performance difficult to attribute directly to the presence of SEZs; the information technology in Southern India provides a case in point. However, in other instances, such as the garment industry in Bangladesh, more directly observable linkages emerge between the creation of SEZs and increases in export productivity.

- Industrial upgrading and technology transfer

Assessments about the role of SEZs in industrial upgrading and technology transfer are mixed. Certain assessments have suggested that skill levels in zone workforces have not significantly increased over time. The share of skilled labor in the maquila workforce, for example, increased only slightly from 6.6 percent to 7.2 percent in 1988-1998 (Sadni-Jallab and Blanco de Armas, 2002). Other analyses have suggested the opposite. Substantial evidence shows that SEZs have played an important, catalytic role in the industrial upgrading and technology transfer in the newly industrialized East Asian economies, especially in South Korea, Taiwan (China), Malaysia and the Philippines, where significant industrial upgrading has occurred in the electronics sector located mainly within industrial zones (Lall, 2000). The Philippine Economic Zone Authority has documented substantial rise in skills levels in the Philippine eco-zones where major activities have shifted from production to design and R&D (FIAS, 2008).

- Firm-level performance

Little is known about the relationship between SEZs and firm-level performance. Few studies have attempted to explore the relationship closely. Aggarwal (2005) asks how cost-reduction measures found in zone-related policies influence firm performance. Focusing on export diversification, and exclusively on EPZs, Aggarwal (2005) conducts firm-level surveys in SEZs in Bangladesh, India, and Sri Lanka. Her primary-survey analysis is based on three types of cost-reduction measures that EPZs provide to firms: infrastructure, location, and regulatory/ governance measures. Given that she has no counterfactual to assess firms outside of zones, she

is unable to successfully model how belonging to an SEZ impacts firm performance. Nevertheless, in a subsequent paper, Aggarwal et al. (2008), using the same data, the authors note: "Although data limitations make it challenging to evaluate the institutional characteristics and trade performance across zones and countries, the comparative assessment attempted in this study yields several findings. In particular, zone location, access to and quality of infrastructure, and the governance structure of the zones seem to influence the performance of SEZs" (p. 234).

In an older analysis of firm-level performance in zones, Rhee et al. (1990) survey foreign and domestic firms as well as joint ventures operating within EPZs in the Dominican Republic. Their primary focus is on the relationship between foreign and domestic firms, and the impact of EPZs on domestic productivity and labor market outcomes. The authors find that foreign firms have a positive impact on local export supply in the Dominican Republic. Foreign firms acted as catalysts to initiate exports of a wide range of products that were also adopted by domestic firms. The authors also highlight knowledge transfer and vocational skills that foreign firms were able to supply to domestic firms within EPZs. Like the Aggarwal research, the primary constraint of this paper stems from its exclusive focus on in-zone firms, without comparison with the performance of non-zone firms.

- Labor-market outcomes

A considerable amount of research has looked at the relationship between SEZs and various labor-market outcomes, ranging from the influence of SEZs on job creation to working environment conditions and unionization. Cirera and Lakshman (2014) draw a sample of 59 such studies to explore the relationship between SEZs and employment, wages, and labor conditions. They focus specifically on freedom of association, health and safety, and working hours in developing countries. Their findings highlight very disparate and mixed outcomes associated with this research. In terms of unionization, Cling et al. (2005) and Glick and Roubaud (2006) find more unionization in EPZs than in the private sector outside in Madagascar, although the authors compare different sectors of activity. Both ILO (1988) and Sen and Dasgupta (2008) find very similar unionization rates between firms inside and outside the EPZs in some Asian countries in the early 1980s and in India in 2004–2006. Ver Beek (2001) finds less unionization inside the EPZs in Honduras in 1998, while Zohir (2001) suggests that unionization is banned inside Bangladesh's EPZs, but not outside. Therefore, excluding those cases where unionization is legally prohibited in EPZs, it's hard to conclude whether restrictions on union rights can be attributed to EPZs or to general failures in domestic labor institutions.

While significant health and safety issues in EPZs have been documented in the literature – ranging from anecdotal evidence to more robust studies – the few studies reviewed comparing workers inside and outside the EPZs show conflicting results. Liberato and Fennell (2007), using a survey in the Dominican Republic, find that working in EPZs negatively affects health and increases the likelihood that women will be hospitalized, but meanwhile, they find that EPZs also improve health outcomes in the household through better health benefits or the use of preventative medicine. Two further studies (Guendelman and Silberg, 1993; Hovell et al., 1988), comparing women working in EPZs and in other activities in Tijuana, Mexico, find no morbidity differences between women working in the maquiladora EPZ and other sectors. Furthermore, the evidence reviewed does not provide any clue on whether the cases of higher incidence of illness in the zones are explained by the concentration of sectors with more illness prevalence (Cirera and Lakshman, 2014).

III. Why Do Countries Use SEZs as a Policy Tool for Economic Development?

Today, the concept of the industrial zone is gaining more acceptance globally. Countries across the world are increasingly exploring the possibilities presented by zones, and attempting to seize their potential to catalyze economic development and structural transformation.

SEZs offer a way to create special environments conducive to business in economies where governments otherwise face great difficulties doing so. Governments also use SEZs as a way to attract investments in sectors with no obvious comparative advantage, or as a way of increasing value added in export activities (Cirera & Lakshman, 2014). The basic rationale is that by removing some critical "binding constraints" to economic growth (Rodrik, 2004), SEZ policies create incentives for firms and investors that might not otherwise be attracted. These constraints range from regulatory regimes and infrastructure to land and trade logistics. SEZs are able to overcome these constraints in a controlled environment, and to experiment with some reforms, or new policies and new approaches.

Due to limited resources and implementation capacity, developing countries often cannot create the business environment, or build enabling infrastructure nationwide all at once. In addition, developing countries often have limited political capital to defend policies and reforms against vested-interest groups and political opposition (Zeng, 2015b). This makes targeted interventions or a pilot approach necessary, especially at the initial stages. SEZs are able to create a better business environment in a geographically limited area, through a more liberal legal and regulatory framework, efficient public services, and better infrastructure within the zone, including better roads, power, water, and wastewater treatment. Some newer-generation zones are even becoming the drivers of green development and eco-industrial cities (Zeng, 2015b).

In the economics literature, the views on SEZs are quite mixed, partially because of the mixed results of SEZ programs in different countries or economies, as previously discussed. Quite a few scholars view SEZs as a suboptimal strategy or second- or third-best options for development. Some contend that SEZs benefit a few, and distort resource allocation (Engman et al., 2007). Others believe that the zones' success is confined to specific conditions over a limited time horizon (Hamada, 1974; Madani, 1999). Some economic research finds that SEZs are welfare reducing (Chen, 1995; Hamada, 1974; Hamilton & Svensson, 1982; Wong, 1986), and other research raises concerns that SEZs may become "enclaves" (Kaplinsky, 1993).

At the same time, other research shows that overall social welfare may be improved under certain conditions, such as by attracting foreign direct investment and through enhancing export diversification (Alder et al., 2013; Jenkins et al., 1998; Miyagiwa, 1986; Wang, 2013). Empirical research shows that many SEZs have attracted foreign direct investment, generated jobs and exports, and demonstrated a marginally positive cost-benefit effect (Chen, 1993; Jayanthakumaran, 2003; Monge-Gonzalez et al., 2005; Warr, 1989; Zeng, 2010; Fuller and Romer, 2012). Examples are quite evident, especially in East Asian experiences.

In addition, the basic economic model for the establishment of SEZs highlights the possibility of spillovers to the local economy. Hamada (1974) notes that there may be externalities or learning effects for the domestic, non-zone-based firms, which may become more efficient after the introduction of foreign investment. SEZs may also affect the welfare and labor markets of the local economy Case studies have highlighted spillover effects associated with the establishment

of SEZs (Creskoff & Walkenhorst, 2009). Positive spillover effects can come in the form of enhanced economic productivity, newly available technology, and local social welfare effects on the domestic population (FIAS, 2008; Wang, 2013; Ge, 1990).

In general, if implemented successfully, SEZs confer two main types of benefits, which in part explain their growth in popularity: "static" or "direct" economic benefits such as employment generation, export growth, government revenues, and foreign exchange earnings; and the more "dynamic" or "indirect" economic benefits such as skills upgrading, technology transfer and innovation, economic diversification, and productivity enhancement of local firms. (Zeng, 2010). Table 2 provides a list of possible benefits from successful SEZ programs. In general, the "indirect" benefits are harder to achieve unless the zones are very successful.

Table 2: Potential benefits of successful SEZ programs

	Direct benefits	***Indirect benefits***
Employment Generation	■	
Foreign exchange earnings	■	
Foreign direct investment	■	
Government revenue	■	
Export growth	■	
Skills upgrading		■
Testing field for wider economic reform & Demonstration effect		■
Technology transfer & adoption of modern management practice		■
Export diversification		■
Enhancing trade efficiency of domestic firms		■
Cluster facilitation		■
Urban and regional development, & even green growth		■

Source: White (2011) and author's research.

IV. The Global Good Practices of SEZ Development: Keys of Success

Global economic and market conditions are rapidly changing, and, as a result, SEZs are also evolving over the time to suit with the new business and economic environment. While the early stage EPZs, which are now called "Industrial Zones 1.0", were successful in many countries (in the sense that they mostly met their initial objectives of attracting FDI, promoting exports and earning foreign exchange), they also have their limitations – they tend to become enclaves, without much linkage with the local economy and rely heavily on fiscal incentives. Given these limitations and the changing global macroeconomic and regulatory environment, many countries began to move towards the modern concept of SEZs which have wider size, more linkages with the local economy and are multifunctional and less reliant on incentives. Such SEZs are called

"Zones 2.0". Some countries, such as China, even declared a city or a province as an SEZ to test market-oriented economic reforms. Such an approach played an important catalytic role in the rapid economic growth and transformation in many East Asian and Latin American countries. With the increasing concern on the global climate change and environmental sustainability, a new trend of industrial zones is gaining traction, which is heading toward an even more comprehensive and integrated approach. The "Zones 3.0" approach synthesizes the experiences of Zones 1.0 and 2.0 and works to create an integrated solution that addresses global new trends in low-carbon or green growth as well as trade and investment policies with domestic institutional frameworks, industries and communities (Kechichian and Jeong, 2016).

In order to succeed in this new environment, a zone of any type must be adapted to the host country's specific situation, and must build on its comparative advantages. Having a long-term vision is particularly important because economic transformation can take decades. In this regard, it is important for policymakers to undertake joint actions in order to promote synergies and coordination among the different players.

Successful zones use a "holistic" or "systematic" approach.

This approach involves all the important aspects (both "soft" and "hard") for building a conducive industrial or business eco-system. More specifically, based on the experiences of successful SEZ programs globally, the following are important:

- strong government support as part of the long-term national development strategy;
- a robust legal and regulatory framework and strong institutions, including effective one-stop-shop services;
- a prototype design for broader national reforms;
- a strategic location with sound infrastructure; and
- strong commercial viability and significant economic and social returns.
- an awareness of potential environmental concerns, and a willingness to address them to create an environmentally sustainable operation.

Make the SEZs an integral part of a long-term development strategy.

Strategies should be fully integrated into national or regional industrial policies and economic development strategies. Without exception, SEZ programs should be part of the broad national or regional development agenda. The programs should be designed to best complement and support comparative advantages, which themselves should be validated through a detailed strategic planning, feasibility and master-planning process, and take into account the commercial sustainability, target markets and businesses, growth trajectory, infrastructure availability, technology innovation capability, and environment sustainability. (Zeng, 2015a; Farole, 2011). This is the key to ensure their viability and long-term sustainability based on real market demand (Fruman & Zeng, 2015). The experiences of China, Korea, Dubai and Singapore (the whole country could be treated as an SEZ) all highlight this point. These countries treat SEZ programs as an important instrument in their national or regional economic and industrial development agenda, and ensured political support or endorsement from the very top level of the government. For example, in South Korea, exports had always been the top priority during the country's industrialization process, and the government had put in place a great number of policy instruments to facilitate the export industries especially through SEZs. In China, the economic zones are mainly used as a way of implementing national and regional development strategies,

and building growth poles of economic development and urbanization[i]. Such a strategic vision plays a key role in the zones' success, which depends on the long-term commitment of government and a stable macro environment. These initiatives should also be featured in national plans for research and innovation, thus reflecting the importance of parks in innovation policy. Similarly, regions and localities, as important players in industrialization and the knowledge-based economy, should focus on the integration of R&D and innovation into their development strategies. In this regard, it is important for policymakers to undertake horizontal, joint actions in order to promote synergies among the different instruments, to intensify governance and coordination between the different programs.

Establish sound legal and institutional frameworks with strong and long-term, well-coordinated government commitment.

A predictable and transparent legal and regulatory framework is needed to ensure the clarity of roles and responsibilities of various parties, and to provide protection and certainty to the developers and investors. Such a framework also helps to ensure that the zones attract the right investments, and are established with high business, social and environmental standards. A solid legal framework will also buffer zones from unpredictable risks, such as political setbacks or interference and land speculation, among other factors. In addition, strong and long-term government commitment provides additional support for a zone's success by ensuring policy continuity and adequate provision of various public goods and services. At the same time, close coordination between the central and provincial/local governments and a clarity of the roles of each are very important for the smooth implementation of the different programs. In Singapore, the Republic of Korea, Malaysia, China, Mauritius, Jordan and other countries or economies with successful SEZ programs, relevant laws and regulations were already in place or were established when they first launched the programs; the various levels of government have implemented these laws and regulations with concerted, long-term support.

Create an attractive business environment, including efficient public services (such as a one-stop shop) and good infrastructures.

One of the key objective of zone programs is to overcome the constraints (both soft and hard) of doing business in an economy. Instead of focusing largely on fiscal incentives such as tax holidays, zones should strive to provide an environment conducive to business. Such programs must provide good infrastructure, such as power, water, roads and telecom. Meanwhile, zones can be used to "pilot" policy and regulatory reforms to support economic development, as evidenced in many East Asian countries. What's important is to make sure that benefits (e.g., the simplification of customs procedures) can then be made available economy-wide (Fruman and Zeng 2015). In almost all the successful zones in the world, basic infrastructure is of high quality, and one-stop-shop services and aftercare are efficient and effective. These features – characteristic of model zones in Singapore, China, Malaysia, Korea, and Dubai - make the zones very attractive to investors.

Carefully plan and design and manage operations.

Because developing a zone is a very expensive undertaking, the process requires very careful planning, design and management. The planning process should include a rigorous assessment of the demand situation, local market conditions, connectivity, the industrial base, the supply chain, the business environment, and land and labor supplies. Ensuring that the zone programs are

actually based on the business demand is of paramount importance in order to avoid creating the poorly performing "white elephant" zones. To ensure smooth and efficient operations of zones, private-sector participation can be encouraged through a public-private partnership (PPP) approach. In such cases, experienced private-sector partners can help with the planning, management, and even the provision of certain infrastructures and services.

Offer ongoing skills training and provide strong human power .

One of the highest priorities of any zone is to provide the customized and specialized education and training that generate, upgrade and deepen knowledge and skills. This issue has become an indispensable part of the overall business environment, and investors are increasingly recognizing its importance. The content and training modalities may vary based on the different needs of different zones and sectors. Without exception, training must be constant updated to keep pace with changing business and industrial development needs. Certain policy incentives can also be provided to encourage firms to provide skills training and retraining to their employees. When certain talents are not available locally, policies can be implemented to attract these skills from other parts of the county or overseas.

Undertake continuous technological and industrial learning, innovation, upgrading.

For zones to enhance productivity and sustain long-term competitiveness, they must keep pace with technological and industrial innovation. In order for zones to remain relevant and to be sustainable in the face of changing economic needs, it is important to catalyze and facilitate industrial upgrading by promoting technology innovation/transfer and high-valued sectors targeted toward different development stages. These efforts include expanding well-focused, applicable R&D expenditures; strengthening university-industry linkages; supporting targeted business incubators; and attracting talent (Zhang, 2008). Fostering both "hardware" (such as science and technology (S&T) bases and platforms, innovation labs, incubators and pioneering parks), and "software" (such as sound regulatory regimes, and targeted incentives and, most importantly, talent-recruiting strategies that attract businesses that employ workers with high-end skills).

Generally speaking, an SEZ or FTZ has its own life cycle. As production costs or the costs of doing business increase, zones need to be more innovative to move up the global value chains. Most economies start with relatively low-tech and labor-intensive sectors, and then gradually move towards high-end of the value chains and more knowledge-intensive service sectors. However, this is not an easy process. Making a successful transition requires skillful leveraging of both market forces and governmental support.

Provide strategic and strong connectivity.

Connectivity among individuals, firms, countries, and regions is increasingly understood as a key factor in achieving competitiveness and sustainable, inclusive economic growth. Connectivity has both physical and policy dimensions. Trade, migration, information, transport and transit, energy, and financial flows interact in complex ways. To be a catalyst for structural transformation, zones need the following: to have or to be linked to key elements of infrastructure (like ports, railways and highways) with good trade logistics and customs services; to be well-matched to local resources that leverage the nation or city's comparative advantages (e.g. agro-processing or electronics); to be part of the global value chain; to be focused not only on exports, but also on

the domestic market.

Create linkages with local economy.

Despite the past successes of some "enclave" model zones (especially, export-processing zones), the success of contemporary zones is increasingly entwined with the local economy. Zones need to build on local comparative advantages, and to have local suppliers as part of their value chains. In many countries, such as India and some SSA countries, zones are often criticized as being "enclaves" without much linkage to the local economy. While this criticism might not be fully justified for EPZs, which are deliberately devised to be "enclaves" to attract foreign investors, modern SEZs are meant to incorporate for both foreign and local businesses. Evidence from East Asia shows that, in the long run, zones with strong linkages to the local economy tend to be the very successful ones. To fully benefit from the zone programs, governments and zone management need to consider the local comparative advantages as they target priority sectors. Governments and zone management should also help local firms to link with zone investors through supply chains or sub-contracting relations (Zeng, 2015a). These backward and forward linkages hold the potential to maximize spillover effects on the economic benefits that accrue beyond the zone itself.

In China, most zones are well plugged into existing local clusters. As a result the zones and local clusters reinforce each other through business linkages. Chinese zones also encourage foreign investors to establish joint ventures with local counterparts. In Taiwan and South Korea, governments also encourage the backward linkages through technical assistance and other policy interventions. The Masan Free Zone in South Korea offers a good example in this regard. The zone administrators actively promoted inter-linkages between local firms and investors in the zone by allowing preferential access to intermediate goods and raw materials to local companies supplying FTZ firms. In addition, the zone administration provided technical assistance to subcontracting firms. According to Engman et al. (2007), granting "equal footing" to local suppliers of capital and intermediate goods, and the use of subcontracting mechanisms from zone investors to local producers are very effective measures. Combined with trade and investment reforms, these measures help to generate strong linkages between the foreign multi-national firms and local economy.

Strike a good balance between industrial development and social/urban development.

The impacts of zones on host societies go well beyond economic efficiency – an issue that merits attention. Zone programs are unlikely to succeed if they fail to offer opportunities for quality employment and upward mobility for trained staff, neglect environmental sustainability, and/or if they derive their competitive advantage from exploiting low-wage workers. Programs that use such tactics fail to achieve the possible dynamic benefits, and they are likely to be forced into a "race to the bottom." By contrast, zone programs that recognize the value of skilled workers, and seek to provide the social infrastructure and working and physical environment in which such workers thrive will be in a position to facilitate upgrading (Farole and Akinci 2011). The quality and cost of housing, health services, schooling, along with the incidence of crime are uppermost concerns for any group of workers, and not just the technically qualified. For knowledge workers, recreational amenities, the cleanliness of the environment, and the state of the physical infrastructure (transportation and telecommunications, for example) are also very important (Yusuf and Nabeshima, 2006). In this regard, the Sino-Singapore Suzhou Industrial Park serves a model example (Box 1).

Box 1.

Sino-Singapore Suzhou Industrial Park (SIP):
A Garden-like, Modern Industrial Town

The Sino-Singapore Suzhou Industrial Park (SIP) is well-known for its "'first-class living environment" and sound industrial-urban integration. It strives to be an "internationally competitive high-technology industrial park and a modern, garden-like township." Thanks to its sound design and planning, the zone is not just an industrial area but also a very livable city, which is essential for attracting high-end investments and talent. The park features well-conserved nature areas and scenic views, high-quality urban and social amenities, and highly regarded education options (such as the Suzhou Singapore International School). Distinct areas are designated to serve different functions as residential neighborhoods, centers of education and training, and sites for recreation and leisure (a culture and art center, museums, an opera house, stadium, exhibition center, etc.), and many green spaces and eco-gardens. It also has well-established, industrial and consumer service sectors, including banks, schools, hospitals, health clinics, postal services, retailers, and hotels.

Source: Zeng (2016).

Create and use a monitoring and evaluation system.

Despite the positive impact of successful SEZ programs in facilitating structural transformation, they are very expensive and highly risky endeavors. Creating an industrial zone is an undertaking that should never be taken lightly. Legislation must be put in place and implemented effectively to stipulate the performance criteria of zone programs, and to set conditions for handling the transitions necessary when zones reach the end of their productive lifecycles, and/or for dealing with underachieving programs. This requires a rigorous monitoring and evaluation system to regularly monitor and evaluate their performances. In the absence of such a system, SEZs may diverge from their initial purposes. To ensure policy efficacy, it's important to evaluate the economic feasibility of zones before their set-up and the outcomes after their set up, and incentives should be designed to match their performances. In addition, based on the experience of South Korea, where, following the initial success, many zones were created without proper business demand and ran into trouble and were then cancelled, it might be necessary to have rules for closing a zone program that is not performing to expectations.

In a change from the early days when most zones were developed by government, more zones today are developed through public-private partnerships (PPPs), with increasing participation from the private sector. In such cases, the functions of the public sector typically include implementation of a transparent and clear regulatory framework, provision of land and efficient public services, financing of basic infrastructure, and oversight of private developers or operators. The private-sector partner(s), on the other hand, takes responsibility for zone development and operation, provision of certain on-site infrastructure, and services, like asset management, global outreach and investor relations.

Address environmental and sustainability issues.

A main manifestation of the "Zones 3.0" approach is the Eco-Industrial Parks (EIPs). EIPs cover a wide spectrum of approaches but they all lead to more sustainable economic development. Depending on the different priorities of park programs, EIPs may be given different names. These could be influenced by the national industrial estate framework (e.g. industrial zones vs. parks) and development priorities of the country or zone developer (e.g.,

greenhouse gas emissions reductions vs. ecology or waste management) (Kechichian and Jeong, 2016). Box 2 lists different varieties of EIPs.

Box 2.

EIPs: Different Approaches and Names, but Similar Goals

Low-carbon zones or parks aim to lower carbon emissions within the industrial area through rigorous greenhouse gas emissions calculations and annual target setting. Measures are implemented at both zone and firm levels, and are focused on largest emissions reduction opportunities.

Eco-industrial zones or parks focus on reducing waste and improving the environmental performance of firms. Korea uses this term primarily for its work on industrial symbiosis (an association between two or more industrial facilities or companies in which the wastes or by-products of one become the raw materials for another) , the use of wastes or byproducts of one industry as raw materials for another.

Green zones aim to reduce resource use within the zone's infrastructure and among tenant firms, via an Efficiency in Production process (through adoption of energy-saving technologies, alternative energies and industrial symbiosis systems, etc.). These zones also focus on generating investments in green manufacturing and services.

Sustainable Industrial Areas focus on the management level of an industrial zone or park with the intent of leading the industrial area as a whole to become more sustainable. Although such zones do not directly determine policies for individual companies, the sustainability framework on park level is likely to lead companies in the zone to initiate and promote positive company-level changes as well.

Eco-towns refer to an urban planning and environmental management approach where industries located in the designated area pursue synergies in resource utilization, waste management, environmental preservation; resource efficiency within their manufacturing processes and between the industries; and promotion of industrial and economic development[ii].

Circular economy zones (or Circular Transformation of Industrial Parks) aim to promote resource efficiency, waste management and emissions control in firms, zones and regions through circular economy patterns.

Source: Kechichian and Jeong, 2016.

Eco-industrial Parks (EIPs) can help reduce the operational cost and greenhouse gas emissions, and as a spillover impact they can lead to cleaner production by avoiding air emissions that most conventional power plants cause. A recent World Bank project in Bangladesh aimed to develop a roadmap for low carbon growth, and to design an optimal policy framework to facilitate it for Chittagong Export Processing Zone (CEPZ). Through the project, 785 electric poles with solar panels have been installed to provide ecofriendly lighting at the CEPZ (World Bank Group, 2014; Kechichian and Jeong, 2016). A yearly 244 ton CO2-eGHG reduction and 331 megawatt-equivalent energy consumption avoidance is expected as a result of this intervention. The impact of green factories or buildings is far more holistic, leading to multiple benefits in terms of energy and water consumption saved, emissions avoided, and reduced waste. In 2011, an efficiency survey found that, compared with a typical factory, a Leadership in Energy and Environmental Design–certified shoe factory in southern Vietnam that produces exclusively for Nike uses 18 percent less electricity and fuel, and 53 percent less water (Ives, 2014).

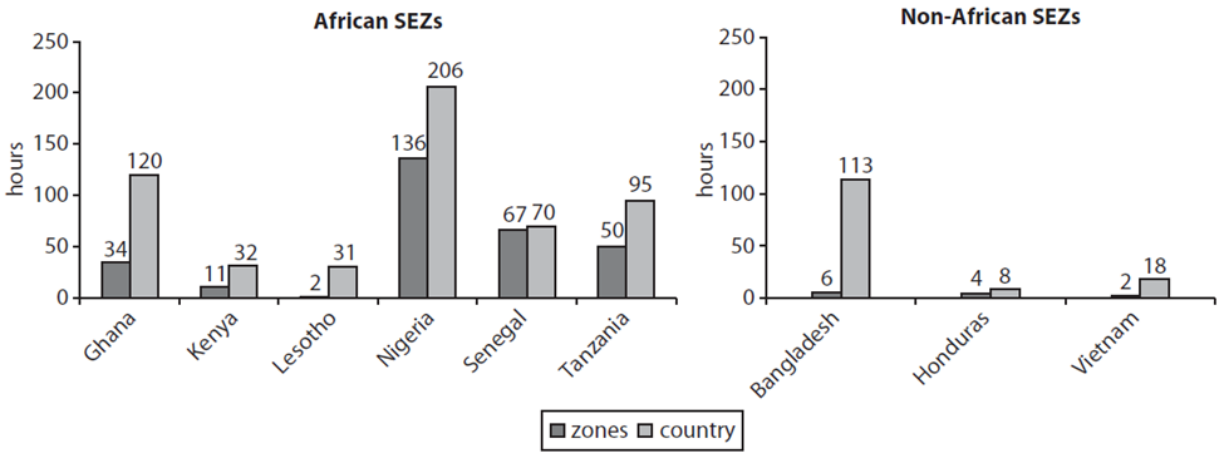
The roots of EIPs go back as far as the late 19th century in European industrial zones. However, the concept truly began to develop in the post-World War II period in Denmark, Germany and

Finland in an unplanned, organic way as a result of resource constraints and high energy costs. These early steps mainly arose in the form of industrial symbiosis and efficiency measures. In the 1990s, other European countries and non-European developed countries such as the United States, Japan and Canada started incorporating EIP concepts, partially or fully, in their design of industrial zones. In the 2000s, Japan, China and South Korea boosted their efforts to support EIPs with national policies as a means to strengthen their global competitiveness. Hence, over the past five years, EIPs have become a prominent global tool for industrial zones/parks, while retrofit activities continue in over 40 countries. An estimated one dozen EIPs are under construction, and over 30 new development retrofit projects are in the pipeline globally (Kechichian and Jeong, 2016).

V. The Relevance and Risks of SEZ Policies in Low-Income Countries

A conundrum presents itself in the SEZ policy picture. The main purpose of SEZs is to overcome many of the binding constraints for economic development that are particularly acute in low-income countries, such as those in Sub-Saharan Africa. As a result, the programs offer great hope for these troubled economies. At the same time, the problems in these same countries - poor governance, lack of resources and weak implementation capacity – make the risk of starting and running an SEZ program much higher in these economies than in middle-income countries.

Figure 1: Average monthly downtime due to power outages

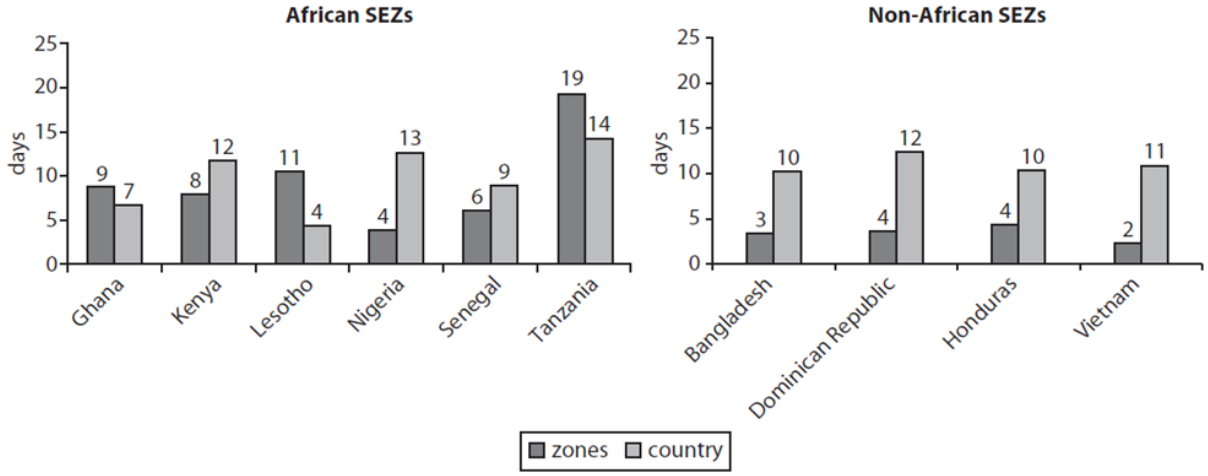


Source: Farole 2011.

A World Bank study (Farole, 2011) of six African zone programs (Ghana, Kenya, Lesotho, Nigeria, Senegal, and Tanzania) in comparison with four non-African countries (the Dominican Republic, Honduras, Vietnam, and Bangladesh) and other studies show that success in African zones is limited to a few countries with relatively better performance, such as Kenya and Ghana in the World Bank study and other well known cases such as Mauritius. In terms of investments, exports and employment generation, the African zones are in general falling behind their peers in other continents. One important reason could be the weak business environment (Farole, 2011). Figure 1 shows that the downtime (measured by hours) due to power shortages is still quite high in absolute terms in most African zones – even though the power loss is less severe within the zones themselves than elsewhere in the host African nations. On average, compared with outside zone situations, the power downtime is about 54 percent lower in African zones vs. 92 percent lower in non-African zones. Figure 2 shows that the average time needed for customs clearance

is not significantly reduced in most African zones, and in some cases, it actully takes longer within the zones than outside of them. This stands in sharp contrast to the situation in non-African host countries, where the business environment is much better within the zones than outside.

Figure 2: Average time needed for imports through major seaport to customs clearance (days)



Source: Farole 2011.

When assessing the African zone programs, it is important to consider that most African countries are relatively newcomers in implementing modern zone programs, and many of these zones are still in the early stages (Farole, 2011). Changes in and the rebalancing of the global value chain and industrial structures may provide these zones with new opportunities to improve and grow.

Overall, various evidence shows that so far very few African zones (with the exception of Mauritius) appear to have made significant progress toward taking advantage of the dynamic potential of economic zones as an instrument of sustainable structural transformation. Some of the key challenges, among others, include (Zeng, 2015a):

- **Problematic legal, regulatory and institutional frameworks.** In many African countries, the current legal, regulatory and institutional frameworks for SEZs are either outdated or do not exist - even after the SEZ initiative's launch, or, in some cases, after the parks have become operational. This "putting the cart in front of horse," approach has created a lot of confusion, and has deterred potential investors. A review of six zones in Nigeria (Zeng, 2012a; 2012b) underlines the prevalence of these issues.
- **Poor business environment.** In most Sub-Saharan African countries, the costs of doing business are high. The overall environment is constraining in terms of registration, licensing, taxation, trade logistics, customs clearance, foreign exchange, and service delivery. Many one-stop-shops for investors do not live up to their names.
- **A lack of strategic planning and a failure to adopt a demand-driven approach.** International experience shows that effective zone programs are an integral part of the overall national, regional or municipal development strategy. Successful zones, such as those in Malaysia, China, the Republic of Korea, and Mauritius build on strong demand from business sectors. In contrast, many zone initiatives in Africa are driven by political agendas, and they lack a strong business case.
- **Inadequate infrastructure.** This is an overall constraint for all the zones but at different

degrees. In general, power, gas, roads, ports, and telecom are the key constraints. Many governments and developers try to use the PPP approach to address these constraints. Given the large investments required for the zones, a strong commitment from government and active participation of the private sector are crucial.

- **A lack of operational know-how for zone management.** Most of the zone developers, including the relevant government agencies, do not have experience in zone management and operations. Many zone developers are companies specialized solely in construction. Therefore, it is a challenge for them to identify partners that can provide the critical knowledge and expertise on zone management and operations. This lack of expertise seriously undermines implementation capacity.
- **A lack of policy consistency, and a failure of host governments to maintain commitments to zones.** Zones face uncertainty and difficulty when they must deal with a new government that either does not fully recognize the potential of the economic zone, or does not fully acknowledge commitments made by previous governments. Strong and long-term government commitment is crucial for the success of the zones.
- **A failure to address land acquisition and resettlement issues.** In some zones, governments' promises to provide compensation in the case of land acquisition and resettlement were not met or only partially fulfilled. These situations hinder the further development of the zones.

Given the various challenges that the SEZ programs in Africa and other low-income countries face, Africa needs a new SEZ strategy. Such a strategy can draw on the useful lessons and experiences of successful countries, and can build on the following (Zeng, 2015a; 2015b):

- **Using SEZs to address the market failures or binding constraints that cannot be addressed through other options.** Such constraints may include issues related to land, infrastructure, trade logistics, etc. If the constraints can be addressed through country-wide reforms, sector-wide incentives, or universal approaches, then an SEZ might not be necessary. The experiences of China of using SEZ as a pilot for reform is worth noting. China leveraged the SEZ as a breakthrough towards a market-oriented growth model in an overall very constraining environment and achieved transformative impact. In an extreme environment in the late 1970s and early 1980s (when the planned economy and Cultural Revolution brought China on the verge of collapse), China opened up its economy and offered generous fiscal incentives to lure foreign investors besides good infrastructure and efficient public services. However, today's macro-environment is different, and many African and other low-income countries in East Asia (such as Vietnam and Cambodia) and South Asia (such as Bangladesh) are the destinations of industrial transfer wave from East Asia. Instead of focusing on tax incentives, governments that want to establish themselves as attractive destinations for investments, should put more effort into enhancing the business environment. Efforts should focus on improving infrastructure, and offering "smart incentives" that encourage skills training, technology transfer/upgrading and local economic linkages.
- **Creating a sound legal and regulatory framework and effective institutions with strong and long-term government commitment.** In most low-income countries, SEZ laws or regulations are absent or out-of-date, and many investment arrangements are done on an MOU basis. Such practices lack transparency, blur the needed clarity of roles and responsibilities of various parties, and often put investments at great risk. In the Republic of Korea, Malaysia, Jamaica, Jordan and other countries with successful SEZ programs,

relevant laws and regulations were put in place when they launched the programs. China formulated the first legislation to govern SEZs at the local level; the SEZ Act for Guangdong Province, passed by the National Congress at the same time as the 1980 launch of the Shenzhen SEZ, includes general and specific provisions on a wide variety of issues (registration and operations, incentives, labor management, etc.). Although the act was drafted by the provincial government, it was enacted by the National Congress to ensure the central government's full support.

- **Fostering a better business environment inside the zone, including efficient services, such as a one-stop shop and good infrastructure.** One of the key objectives of the zones is to overcome the constraints (both soft and hard) of doing business in an economy hampered by poor infrastructure, problematic trade logistics, and inefficient, bureaucratic public services. However, in most African zones, these issues remain – even though conditions in most zones are superior to those elsewhere in the African host nations. Power shortages, slow customs, inadequate roads, and unreliable water supplies often make production costs very high. In the successful countries, all basic infrastructure is provided with high quality in most zones and the one-stop-shop services and aftercare are very efficient and effective. Singapore offers a prime example (Box 3). China, Korea, Dubai, and Jordan also make their zones very attractive to investors. Of course, one thing Africa and other low-income countries facing limited resources can do differently from East Asia is that they can attract more private investors through a PPP framework, instead of solely relying on the public funding. Many East Asian countries are also increasingly moving towards this direction.
- **Implementing a realistic scheme that starts small.** It is crucial to make one or two zones work first before scaling-up. For example, China started with only four zones at very strategic locations, and only rolled out programs in the broader economy after these initial zones (especially the Shenzhen zone) were successful. African and latecomer countries should learn this lesson, start with one or two, and make them truly successful first before taking the program to a larger scale. Many low-income countries start with 10 or even 20 zones all at once; this is a recipe for failure.
- **Providing a level of autonomy at the local/zone level coupled with clear objectives, sound benchmarking and monitoring/evaluation.** Using SEZs to pilot new reforms, as the East Asian experience shows, would require a certain level of autonomy at the local/ zone level. While it is important for the central government to define the overall SEZ strategy/planning and to put in place the right frameworks, the local/zone level should have certain autonomy to test new reforms/approaches to make zones work; in many cases, the specific solutions are on the ground. In Shenzhen, for example, the initial zone had legislative power to pilot reforms to improve the business environment. In Africa and many low-income countries with limited government capacity, the private sector can be effectively leveraged to fill in the gaps in areas of zone management, financing, etc. While zones may enjoy a certain level of flexibility, they also need to be held accountable for the intended results, measured rigorously against the pre-set targets, and benchmarked across different zones.
- **Aiding technology transfer, diffusion and skills training.** This is crucial for the zones to acquire sufficient manpower, and to make their products competitive. In most African zones, investors struggle to find needed technological support and relevant skilled or semi-skilled workers. Many firms must bring their own technicians/engineers and must conduct

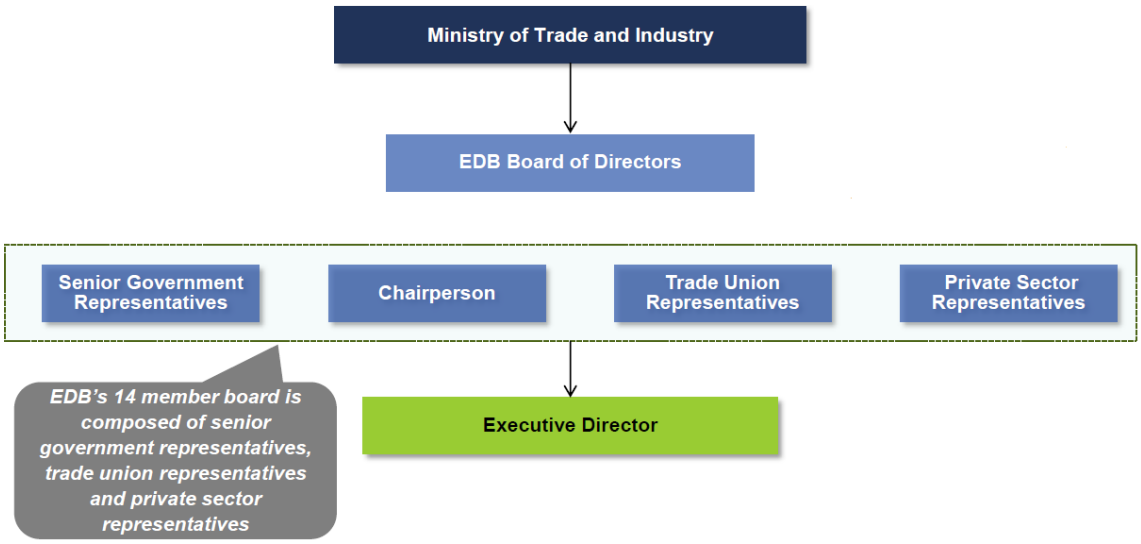
Box 3.

The Economic Development Board of Singapore: A Super-Efficient One-Stop-Shop

The Economic Development Board (EDB) in Singapore is famous for its efficient "one-stop-shop" service, which has become an exemplar for other countries to emulate. The EDB was established in 1961 to drive Singapore's industrialization and FDI initiatives. It now

- Operates as a one-stop shop that facilitates local and foreign investments.
- Provides one-stop services for facilitating and supporting both local and foreign investment.
- Advocates for efficient and cost-competitive infrastructure and public services.
- Provides national economic strategic direction.

EDB reports to the Ministry of Trade and Industry, and is led by a seven-member board of directors comprised of influential public- and private-sector figures.



Some Key Success Factors of EDB:

1) Clearly Defined Strategic Focus
   - EDB focuses on developing export-oriented priority sectors
   - Part of this strategy includes a "Host to Home" objective to transform Singapore from a host to a home where business, innovation and talent are nurtured
2) World- Class Website
   - EDB's website provides detailed up-to date information about its services and step-by-step guides on how to establish a business in Singapore
   - The website also has micro-sites for each of EDB's 20 priority sectors
     - A typical micro-site has a promotional video, a sector profile, industry news, fact sheets, and testimonials from satisfied investors
3) Diverse Board of Directors
   - EDB's board of directors consists of senior government representatives, trade union representatives, and private-sector representatives
   - Having such diverse representation on the board ensures that all stakeholders' interest as well as sector-specific issues are considered in charting EDB's strategic direction

Source: EDB Website: https://www.edb.gov.sg/content/edb/en.html; and author's research.

training for the local workers – costly undertakings that present a big burden for investors. Most successful zones have well-equipped centers, which work closely with technical and vocational schools, colleges and universities to provide relevant skills training and technological support for the firms in the zones. Some zones also have incubators to nurture new start-ups with seed money. Local governments also have a talent strategy to attract highly skilled people from destinations throughout the world to work in the zones.

- **Forging better linkages with local economy.** Zones need to build on local comparative advantages and to make local suppliers part of their value chains. In many countries, especially in Africa, zones are often criticized for being "enclaves" without much linkage with the local economy. To fully benefit from the zone programs, governments and zone management need to identify priority sectors, consider local comparative advantages, and help local firms make connections to investors in the zones through supply chains or subcontracting. As mentioned above, in Taiwan (China), and the Republic of Korea, governments encourage the backward linkages through technical assistance and other policy interventions such as duty exemption or tax rebates for local firms that provide inputs or services for the investors within the zones. The Masan Free Zone in the Republic of Korea offers a good example in this regard.
- **Practicing sound environmental management.** As mentioned before, many successful countries – China, most prominently among them - have paid a high environmental price in the rapid industrialization process. At the early stage, most zones paid less attention to environmental protection in the pursuit of high GDP growth, and today the government is spending billions of dollars to clean up the environmental damage created in its wake. Countries that are only now establishing industrial zones should take this lesson seriously, and adopt strict measures to protect the environment.
- **Establishing a good balance between industrial development and social/urban development.** Today, zone programs are part of a broad, urban-development agenda. From the zones' inception, urban master plans should ensure good integration between the zones and cities in terms of infrastructure and social services. Many early-stage zones, especially the EPZs, have not done this very well. Countries launching SEZs should heed this lesson and strike a good balance from the beginning.

VI. Conclusion

Special Economic Zones are growing globally, and the concept is gaining more acceptance. However, mixed results in different economies, countries, and regions show that the zones are not a panacea for development. To be successful, zones have to be implemented properly and carefully tailored into a country's specific situation. They are not a suitable development instrument in every situation. Given the complex and heterogeneous environments in which zone programs operate, a clear framework is needed to guide the operations of SEZs in countries where they are deemed relevant. Such a framework should include the clear roles and responsibilities for the government and private sector. Key issues are establishing the necessary legal and regulatory frameworks, undertaking needed strategic planning and assessment of business feasibility, finding ways to ensure the provision of adequate infrastructure, and establishing responsible social and environmental standards.

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[i] Shanghai offers a good example. The Shanghai Economic and Technological Development Zone was set up to achieve the strategic goal of revitalizing the coastal cities in China; the Pudong New Area (a comprehensive SEZ) was developed to build Shanghai into a global economic, financial and trade center; and the most recent Shanghai Pilot Free-Trade Zone was created to promote high-end service industries, and to explore ways of industrial upgrading and structural transformation for China.

[ii] http://www.unep.org/ietc/OurWork/WasteManagement/Eco-Towns/tabid/79266/Default.aspx .