

# "Africa, Industrial Policy and Export Processing Zones: Lessons from Asia"\*<sup>1</sup>

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## First Draft-Comments are Welcome

One of the more remarkable trends associated with the increasing international integration of the economies of developing countries has been the proliferation of free trade and export processing zones (EPZ). In 1959, the very first zone of any consequence was established as Irish Shannon Export Free Zone. The initial success of this experiment led to organizations like UNIDO encouraging it as a model to be reproduced by developing countries. In 1965 the first zone in a developing country was organized in India. By 1980 more than 30 countries had established export processing zones. Ten years later the number of countries with zones had doubled. While the exact numbers vary in accordance with definitions most estimates placed the total number of zones at well over 200 in 1990 with a total employment exceeding 2.5 million.<sup>2</sup> Over the 1990s employment and the number of zones rapidly proliferated to around 845 employing roughly 22.5 million people in 1997. The number of zones quadrupled again through 2006 to 3500 with world wide employment reaching nearly 66 million in 130 countries. The vast majority are in the developing world. Roughly 3126 are in developing or transitional countries with a total employment of around 64.9 million.<sup>3</sup>

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\*This paper draws on Stein, 2007

<sup>1</sup> The use of Export Processing Zones (EPZ) in the title refers to export processing zones which broadly refers to an array of zone types of which the EPZ is but one. See the discussion below

<sup>2</sup> This figure is based on UNCTAD (1993). The number seems to include only export processing zones which would appear to correspond to free ports or zone areas with the processing of goods. However, this is rather conservative. In China, for example, the UNCTAD figures include seven zones, of which five are the most open special economic zones. However, there are now various types of open zones in China which are similar to EPZs such as Economic and Technological Development zones, Hi-Tech Development Zones and Free Trade Areas. In 1993, depending on the ministry you talked with, the estimates ran from a total of 1700 to 9000 throughout China. See David Wall et al. (1996).

<sup>3</sup> The numbers are calculated by adding total regions and deleting out Australia and New Zealand from Pacific,

Most zones and employment are in China. There are roughly 900 plus zones and employment of roughly 40 million. In 1990, Africa accounted for a mere 9% of the total number of zones in developing countries. Only three African countries Egypt, Mauritius and Tunisia had zones with any significant employment or exports. In sub-Saharan Africa, including Mauritius, only eight countries had organized SEZs. By 1996 they have been joined by at least seven other sub-Saharan countries.<sup>4</sup> The most recent survey for 2006 lists 20 countries in sub-Saharan Africa with employment of 1,043,186 in more than 91 zones (roughly 2.6% of the total in developing countries including China or 3.5% without China). However, 51% of the total SSA employment is in one country, South Africa.<sup>5</sup> Only Mauritius, Lesotho, Kenya, Nigeria and Madagascar employ more than 35,000 people in total. Three of these five rely heavily on textile exports and are in danger of significant contraction in the wake of the end of the multi-fiber agreement. Many generate few jobs and have small labor forces (less than 10,000 workers) working in the zones (ILO, 2007).

The rather slow expansion of export processing zones in many African countries has been disappointing but provides an opportunity to influence the future direction at an earlier stage in their development in many African countries, if they choose this route. Ultimately the design and operation of zones that can maximize local and regional impact can also provide an environment conducive to the growth of foreign investment, generate employment opportunities, foreign exchange, backward, forward and demand linkages, self-generating capital accumulation, training and technological spillovers and significant local spin-offs and co-ownership opportunities. However, from the perspective of a number of indicators of success, zones in Africa have been broadly disappointing particularly in contrast to experiences in a number of Asian countries. The main problem is that many zones in SSA have been driven by aid agencies combined frequently with the promise of special access to foreign markets through donor programs like AGOA and the EBA. The benefits have proven to be somewhat ethereal particular after the expiration of the multifiber agreement in January 2005. Moreover, the vision has been driven by the rather faulty neo-classical notion, frequently embedded in World Bank policy papers, that EPZs are simply second best solutions to the total liberalization of economies. In contrast in many of the successful export zones in Asian countries, EPZs have been part of a broader industrial policy where zones are not an end in themselves but a component of the broader strategy to industrialize the country.

The paper begins with a taxonomy of the different types of zones before looking briefly at some of the literature concerned with export type zones. The next section of the paper presents the theory of

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Japan, Singapore, Taiwan and S. Korea from Asia, Europe (except Turkey) and the US (ILO, 2007).

<sup>4</sup> 1990 the sub-Saharan countries included Botswana, Ghana, Lesotho, Liberia, Mauritius, Senegal, Swaziland and Togo (UNCTAD 1993). By 1996 they were joined by Cameroon, Cote D'Ivoire, Kenya, Namibia, Nigeria, Mozambique and Zimbabwe (Weissman, 1996). By 2006 you also have Madagascar, Cape Verde, Mali, Malawi, and Gabon and Seychelles but Liberia disappears from the list (ILO, 2007),

<sup>5</sup> In South Africa these are mostly known as Industrial Development Zones (IDZs). For a critique of IDZs and other EPZs as part of a neo-liberal "race to the bottom strategy" see Jauch (2002). Given the strong South African expertise at the task force meeting, there is little I could add in this paper to their knowledge. I have therefore largely avoided discussing South Africa in this paper.

industrial policy and how EPZs can fit into manufacturing strategies. The latter part of the paper contrasts examples from Asia and Africa which buttress the main theoretical arguments. The final section examines the example of the Onne Free Trade and Gas Zone to discuss how that could be better designed in an industrial policy framework in Nigeria.

### **Toward a Taxonomy of Terminology**

There are a wide variety of terms to describe open trading and manufacturing areas that operated with custom rules and government policy measures that differ from those found in other sections of the country. Given the wide scale imprecision in the use of terminology in the literature it is important to carefully define and differentiate a topology of zones.<sup>6</sup>

#### Free Ports and Trade Zones

A free trade zone (FTZ) is a spatially defined area in a wider political unit, often next to a port where unrestricted trade is permitted with the rest of the world. Merchandise may be moved in and out of the FTZs free of customs, stored in warehouses for varying periods and repackaged as necessary. Goods imported into the host country pay the requisite duty. FTZs provide rapid delivery opportunities while removing the interest costs of custom payments (Hewitt et al., 1992). Free ports (FPs) generally coincide with a political unit where goods are imported without customs regulation and either consumed locally or re-exported. Examples are Hong Kong, Singapore and Gibraltar (DMS, 1996).

#### Export Processing Zones and Units and Special Economic Zones

The Export Processing Zones generally go beyond the conditions of FTZs to include a variety of measures aimed at encouraging investment in manufacturing capacity exclusively for export.<sup>7</sup> In addition to the exemption from duties on imported intermediate goods, raw materials and equipment when output is sold abroad, taxation and industrial regulations are typically more generous than elsewhere in the country. Tax holidays and the guarantee of the repatriation of profit are often provided. Infrastructure is typically well developed and often subsidized. Wages are sometimes lower than elsewhere with unionization discouraged. Red tape measures are minimized with approval often on a one-stop basis. A variety of other extension services are typically provided. EPZs are the most wide-spread examples of zones.

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<sup>6</sup> The etymology of the imprecision of language use in this area is probably linked to the comparative newness of these zones, the lack of any systematic use of terminology in the zones (zones with similar functions are called by many different names) and the dynamic character of some zones due to the shift of government policy. Even the library of congress subject index refers to all types of zones as "free ports and zones".

<sup>7</sup> This export exclusivity seems to be ubiquitous with one prominent exception the Manaus Free Zone in Brazil where production seems to be aimed largely for the domestic market. This could almost be deemed an "import processing zone". See UNCTAD, 1993 for more discussion of this zone. In 2001, Nigeria moved in this direction by abrogating the rule that the EPZs must export at least 75% of their production (see footnote below).

The most wide scale activity found in the EPZs is labor-intensive using non-complex manufacturing processes with a heavy emphasis on assembly operations (Johansson, 1994). Two activities are overwhelmingly dominant in the EPZs textiles and garment production and electronic assembly. For instance textile and garments in the early 90s account for almost 90% of employment in zones of Jamaica, Mauritius and Sri Lanka. In Malaysia employment in electronics accounted for 74% of the total (UNCTAD, 1993).

Closely related to the EPZs are the Economic Processing Units (EPUs). EPUs are single firm units operating as if they were EPZs. They are generally not restricted to any specific area in a country. Imported inputs are held in bond inside the factory. Imports may be subject to continuous verification by officials or by random spot checks (DMS, 1996). The EPUs have the advantage of firms fully factoring locational variables into their decision making. The major drawback is the loss of economies of scale and some externalities that can arise from the situational proximity of firms.

Special Economic Zones (SEZs) include many of the features of EPZs, EPUs and Free Ports. Companies receive many of the benefits of firms in EPZs. They are able to locate anywhere within the zone and the political and spatial unit are coterminous. They also have features which differ from other zones including a diversity of economic activities that have drawn foreign investment into agriculture, manufacturing, construction, communications, trade, catering, housing, public utilities and other services like finance and tourism. China, the main proponents of this approach, organized five SEZs between 1979 and 1988.

The SEZs provided a unique opportunity to experiment in market reform which has been slowly emulated by many townships and regions. They also demonstrated the viability of the Chinese two systems approach for Hong Kong and Macau prior to their annexation. The SEZs were selected for geographical and historical reasons (Shenzhen by Hong Kong, Zhuhai by Macau, Xiamen by Taiwan, Shantou because of its connections to overseas Chinese and Hainan which is easily accessible to Singapore, Japan and Taiwan). The zones have attracted a large amount of foreign investment. By 1994, the accumulated foreign funds attracted for capital construction reached \$6.4 billion. While overall Hong Kong has provided the most important source of investment funds, the origins of funds, in each zone have, relatively speaking, generally reflected the original design.<sup>8</sup>

It should be noted, however that over time the number of joint ventures and investment sources other than FDI grew appreciably. For example in Shenzhen, more than half the investment funds came from foreign sources in 1981. By 1993, the figure had fallen to only 13% with most funds from self-raised, domestic loans and other sources. In 1981 only 13% of FDI were joint ventures. By 1993, 64% of total FDI was in joint ventures (Ge, 1999). As discussed below, this is an important conduit for channeling foreign technology and managerial expertise to local companies

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<sup>8</sup> For instance in Xiamen, the same number of projects in 1991 were approved for Taiwanese investors compared to Hong Kong investors. In Shenzhen where you would expect a smaller Taiwanese presence, Taiwan only had 5% of Hong Kong's number of projects. Hong Kong's large presence in most of the zones is partly due to the number of Chinese that use Hong Kong as a base for investing in China and who are fully counted in the Hong Kong investment figures in the zones. (Wall et al., 1996).

and was a deliberate aim of China's industrial policy. There are other variations of zone types such as science and technology parks found in Taiwan, Korea and China which are aimed at increasing research and development spending.

In China, the High and New Technology Industrial Development Zones (HNTIDZs) have played an increasingly important role in fostering research and applying it to the development of new industrial products again a strategy arising out of the priorities set in China's industrial policy (more on this below). In 1988 after the State S&T Commission announced their Torch program to assist in organizing the zones, 14 HNTIDZs were launched by provincial and municipal governments. 13 more were launched two years later. These were formally approved in 1991 with a further 25 approved in 1993. By 1997 the 53<sup>rd</sup> zone was organized in Shaanxi (focusing on agriculture).

Through 2001, the numbers have continued to rise to a total of around 150 with 53 central level zones, 68 provincial and 30 at the university level. The HNTIDZs were provided with an array of incentives including no import licenses for inputs related to export processing, bonded warehouses and factories, zonal import/export agencies, right to run a foreign trade business, low income taxes (15% rate across the board) and complete income tax exemption for the first two years after the start of operation. Between 1992 and 1994, the central government invested about RMB50 billion to construct the zones. Closely associated with the zones are a series of government sponsored incubator programs aimed at providing training, consulting, information, exhibition centers, and a one-stop approval service for registration, insurance, commodity inspection, customs bonded warehousing etc.

The number of enterprises and employment rapidly proliferated. By 1997 there were 15,000 new technology firms, employing 1.4 million people with an annual income of 339 billion RMB-(40 billion dollars at the exchange rate 8.3RMB/dollar in 1997) and a profit of RMB10.8 billion. The most important areas of product development have been in electronics and information, optics-machinery-electronics integrations, new materials, and bioengineering/pharmaceuticals. In some zones a number of firms grew to large sizes. In the Beijing zone, three companies (Legend, Stone and Founder) accounted for RMB 20 billion of output in 1996 or roughly half of the total of the zone (Jici and Wang, 2002)

### **The Literature: A Brief Comment**

While the literature on export oriented zones on sub-Saharan Africa is slowly growing, a fairly extensive set of articles and books have been published based mostly on the experiences in Asia and Latin America and the Caribbean. Broadly speaking, the literature in economics can be divided into four types of evaluations formal modeling which is heavily influenced by neo-classical welfare analysis, descriptive case studies, cost-benefit approaches and policy modeling.

The pioneering neo-classical study was undertaken by Hamada (1974) and Hamilton and Svensson (1982). The argument is that EPZs will not attract domestic investment since it provides a lower return (given that all prices are assumed to be international) than the protected segment of the

economy. Similarly, foreign investors will also be discouraged since they will need to accept a lower return compared to other parts of the economy. Moreover, the neo-classicals argue that the zones will create distortions and be welfare reducing since the inflow of capital into the zones will attract labor from labor-intensive sectors of production (as countries follow their comparative advantage due to large labor endowments) to comparatively more capital-intensive sectors in the zones.

This counter intuitive argument arises from the assumptions embedded in the model. The models focus on tariff on outputs ignoring the importance of other factors that attract capital including tariff reductions on inputs, reduction in transactions costs due to simplifying customs regulation, the ability to repatriate profits, lower taxes etc. Moreover, the models also assume full employment which is of course completely contrary to the conditions of labor surplus which propel countries to organize zones in the first place. Other studies in this vein have provided somewhat more realistic assumptions, but like most neo-classicals, they focus on the impact of the measures on the increase or decrease of distortions in some hypothetical world (Johansson, 1994).

The case study approach has led to a wide variety of conclusions concerning the effectiveness of the zones. Disagreements often exist due to the focus on different zones which have included a variety of failures due to poor location, inadequate infrastructure and gross mismanagement. However, there has also been some fervent debate in the literature on the effectiveness of specific zones in countries like the Dominican Republic.<sup>9</sup>

Cost-benefit analysis is aimed at quantifying the more qualitative evaluations of zones by arriving at a bottom-line net present value or internal rate of return. Benefits include the foreign exchange earned due to the usage of local inputs like labor including adjustments for the difference between the official exchange rate and the shadow rates (where exchange rates are under or overvalued), the revenue gained by the government, the employment benefits as measured by the difference between the wage and the social opportunity cost of labor (what labor can earn elsewhere) and the net profits share to local joint partners (taking into account the opportunity costs of the inputs provided). Costs are associated with infrastructural expenditures, administrative costs and the subsidies and incentives provided by the government.

The results of studies have been generally positive. Chen (1993) has shown very strong social benefits for the Chinese SEZ of Shenzhen. Other studies have indicated positive values in the zones in Indonesia, Sri Lanka, China, S. Korea and Malaysia, but a negative return for the Philippines Bataan EPZ (UNCTAD, 1993; Jayanthakumaran, 2003). However, these results should be qualified due to the weaknesses of the methods used which include heroic assumptions about shadow prices and discount rates. It also misses important aspects of zones including demonstration effects, technical transfers, linkages, externalities inside the zone and important features of institution building (building relations between foreign and domestic capital, trust

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<sup>9</sup> See for example the exchange between Raphael Kaplinsky (1993, 1995) and Larry Willmore (1995) over the impact of EPZs in the Dominican Republic on wages, technology transfer and linkages.

between governments managing zones and foreign capital, organizational structures for industrial policy etc.).

A fourth approach in the literature is policy modeling which relies less on mathematical proofs using unrealistic assumptions and more on conceptually linking causal factors to explain the varied outcomes of zones. Yuan and Eden (1992) relate eleven measures of zone performance to 14 causal factors under three general headings, the international environment, domestic conditions and the role of the state. Amirahmadi and Wu (1995) pinpoint the source of the success of EPZs in the confluence of three well designed sectoral and spatial policies free trade zones, industrial policy and a growth centered strategy. While policy modeling can seem somewhat etherial compared to case studies and can lead to varying interpretations of actual events, it does provide one with a set of concepts and issues which can be useful when considering the design of EPZs. Moreover, the results point to the importance of industrial policy, although there is little analysis of its meaning, content or which policies are the best for the design of the zones for developmental purposes. What is meant by the term industrial policy?

### **Industrial Policy and EPZs**

The literature in support of industrial policy has frequently emphasized market over state failures. In this view real world markets are affected by imperfections due to a variety of conditions including public goods, externalities and monopoly. The problem of designing policies in this manner is that it is captured by a neo-classical vision of markets--if only market failures were not present industry would prosper. However, industrial transformation is a complex process which involves significant institutional transformation that transcends putative attempts to counter imperfections to produce a hypothetical world of self-seeking individuals operating in a perfectly competitive market. We should focus on developing the institutions that will lead to the formation, operation and evolution of new and existing industries in the context of domestic and international needs.

Industrial policy is the conscious state intervention to transform the structure of industry to enhance the “developmental competitiveness” of an economy. Developmental competitiveness refers to an institutional continuum which propels a dynamic process of accumulation focused on increasing the diversity, market share, linkages, and depth of an economy. Diversity refers the variety or heterogeneity of goods produced. By market share we mean the proportion of global and domestic goods produced locally. Linkages focus on various spillover effects forward, backward and demand linkages. Depth refers to the basic strength of a sector as measured by the number, type and conditions of production of firms.

The state is at the center of improving developmental competitiveness. In cooperation with private industry it should help conceptualize the potential of each industrial stage of entry into the global economy and to develop a strategy to generate a dynamic that leads to new stages. Purposive policy intervention should not only fine tune the institutional continuum but to alter it to create new directions which enhance the market share, diversity, depth and linkages of an economy. An

institutional continuum involves both the transformation of private sector and state institutions aimed at supporting industrial accumulation including the design of export processing zones. The state is the central agent needed to transform an institutional matrix that can set in motion a cumulative process of development. What do we mean by institutions and institutional constructs and how can industrial policy including export processing zone strategies be used to change them?

At the core of industry is a matrix of institutional constructs that indicate how people interact to generate goods for domestic and international markets. The five institutional constructs consist of capacities, norms, incentives, regulations and organization. They shape the socially prescribed correlative behavior at the heart of a manufacturing sector. Norms are behavioral guides generally built up from an established pattern of life and associated ways of thinking. In manufacturing, norms focus on elements such as trust and ethical standards that allows manufacturing business relationships to evolve and clusters and networks to develop.

Incentives are the rewards and penalties that arise from different forms of behavior. Material conditions are one of a broad array of social factors influencing behavior. Unlike the momentary marginally calculating homo-economicus of neo-classical economics, material rewards and penalties have a powerful effect in shaping habits of thought. An institutional approach also recognizes the range of options including non-material incentives. In addition, the response to incentives is formed gradually and is highly contextualized. Incentives should focus foremost on encouraging developmentally enhancing production and investment.

Regulations constitute the legal parameters that define the rules of economies which guide the operations of firms and other organizations. They help shape the boundaries of behavior and can encourage companies through the limiting and delimiting of activities to undertake developmentally enhancing production and investment. Organizations are units that draw on common rules to generate purposive activities. In the context of industrial policy organizations include both commercial enterprises and state agencies that can influence and shape the direction of economic activity. Capacities are abilities of organizations or sub-organizational units to operate in an effective manner to reach common goals and purposes. In an industrial setting, capacities would include both technical abilities and entrepreneurial skills.

To advance manufacturing, industrial policies should aim at generating new norms, capacities, incentives, organizations and regulations aimed at fostering private sector or joint private-state activities with the goal of improving developmental competitiveness.<sup>10</sup>

In Asia, Export Processing Zones have been part of the broader industrial policy and in some countries an instrument for the state to learn how to handle FDI for developmental purposes.

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<sup>10</sup> The World Bank continues to focus on building private sectors and their exporting capacity through state neutrality and retraction. See for example focus on “business climate” in recent World Development Reports which incorporates the number of days and procedures to begin a business (World Bank, 2006, particularly Table 5.2)

African customs and other government bodies have been bureaucratic and at times corrupt. The zone allows an experimental forum to learn to develop habits that will lead to efficiencies that can be emulated elsewhere in the country while at the same time building up trust with foreign investors. A successful drive to industrialization will require the development of capacities and policies to foster private sector investment. The operation of a zone is a good starting point to begin to learn to apply those capacities. African governments have had a tendency to be ambivalent about foreign capital with too many policy shifts. Continuity and stability in the policy of governments can build up the relationships that can lead to a greater commitment to foreign investment. The operation of the zones can have other important demonstration effects.

Foreign investors often have a well developed understanding of technology and an ability to synthesize the new forms of technology as they appear. These are two capacities which are woefully inadequate in Africa. In general, SSA's share of medium and high technology activities in its MVA is the lowest in the world and has been falling over time in contrast to most regions (Lall, 2005). In addition human capital tends to be poorly developed in Africa. Employment can lead to training which enhances human capital. Even where there is little formal training a modern industrial setting with quality control, punctuality, organizational discipline and a spirit of innovation and drive can leave a significant impression of lasting consequences to future industrialization (UNCTAD, 1993).

A number of examples can be used to illustrate how states have used industrial policy strategies to build up the institutions associated with successful EPZs.

### **Asian EPZs, Industrial Policy and Institutional Transformation**

By almost any measure, the most successful export zones in the world have been located in Korea, Taiwan and China. Taiwan, like many Africa countries, was searching for ways to enhance export promotion after focusing initially on import substitution. However, complex administrative procedures and a heavy handed bureaucracy impeded efforts in this area. In 1966 they established the first zone at Kaohsiung aimed at offering incentives and minimizing administrative procedures. Two more zones were quickly organized. The zones were wildly successful relative to the criteria used above. FDI grew annually at a rate which varied from 10 to 81% between 1967 and 1979. Average annual exports increased at an astounding 61.3%. Net exports were a very impressive 40% of total exports between 1966 and July 1980. The zones became increasingly important to the trade accounts of Taiwan. Net exports from the zones relative to the total increased from 3.3% in 1967 to 53.4% in 1976. Employment peaked at more than 80,000 workers in 1986 before declining to about 70,000 in 1990.

Unlike many other zones in other parts of the world the EPZs were not mere enclaves with both significant backward linkages and technology transfer. In 1967 only 2.3% of all inputs were of local origin. By 1973 the figures rose to 17% finally reaching about one-third of the total by 1980. More than 1000 factories were organized to provide inputs to the zone. There were 40 technical cooperation agreements between foreign investors and suppliers aimed at upgrading the quality of

inputs in turn leading to significant technology transfer. In addition, more than 4000 people were sent abroad for technical training between 1966 and 1979. Over time, local Chinese technicians and managers replaced expatriates (Yuan and Eden, 1992; Amirahmadi and Wu, 1995) Although slightly less significant, Korea's zones have also generated high levels of employment, foreign investment, net exports and significant backward linkages and technology transfers.

The key to the success in Taiwan, Korea and China has been the ability to attract foreign capital and to encourage them to undertake activities with greater developmental consequences. All three carefully used zones as part of a broader industrial policy strategy (Kuchiki, 2007). Each carefully tried to institutionalize linkages with the local economy utilizing an array of new norms, incentives, capacities, organizations and regulations. What was also important was a staged approach of transformation in line with shifting priorities set up in a broader strategic or industrial policy domain.<sup>11</sup> EPZs were never seen as a second best solution to free trade as conceptualized by the Bank (see discussion below), but as part of the overall strategic approach to transform the institutions and structure of the economies for developmental purposes.

At the core of the strategy has been the utilization of a set of carefully sequenced *incentives*. In China, for example tax policy differentiation has been an important instrument of industrial policy and carefully used to reflect the state priorities over time. From the beginning SEZs in China were seen as a mechanism to attract FDI not only for export purposes but for technology transfers and for spillover effects and backward linkages through joint ownership with local corporations. This was encouraged in a number of ways. Prior to 1994, the corporate tax rate was 55%. However, joint enterprises were taxed at a lower rate which provided a very strong incentive for local companies to hook up with foreign enterprises. *Regulations* were passed which allowed local companies to receive the full rights as foreign enterprises with only 25% foreign ownership thus generating a new type of industrial organization not present in China up to that point (Lai, 2006, p.46).

Moreover, from the other side, FDI access to local finance was much easier with links to local companies. We saw above the resulting large increase in percentage of joint ventures in places like Shenzhen. With this relationship, there was a much higher probability of using local inputs in joint ventures compared to wholly-owned foreign operations. Other incentives were used to encourage the purchase of local exports in other zones. Korea and Taiwan extended duty free status to local inputs going into the zones (eg they became indirect exporters) allowing them to compete with the foreign inputs imported duty free by companies in zones. Moreover both countries did not rely on market incentives alone to build up capacities. For example, in Korea Masan zone officials placed technical experts in local suppliers to upgrade the quality of the products sold to the zone companies. Over time the percentage of locally used inputs grew to 44% from 3% in 1971 when the zone was first formed. In Taiwan, common *norms* emphasizing things like the importance of quality were built up through the placement of officials from zone firms into local companies. (Radelet, 1999)

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<sup>11</sup>For a more detailed analysis of the industrial policies of Korea and Taiwan and its relevance to Africa see Stein (1995).

When industrial policy priorities changed over time so did the nature of the components of their institutional matrix to ensure consistencies between zones and country needs. Over time and in line with broader industrial policy priorities, they encouraged the development of certain sectors, emphasized value added production and provided incentives to increasingly purchase local inputs. In 1979 in Korea, for instance, a new *organization* the Machinery Purchase Fund was put in place to finance the purchase of machinery by EPZs in order to upgrade the capital intensity of production. (Yuan and Eden, 1992). To encourage the organization of the HTIDZs in 1994 when China set up a flat rate corporate tax of 33%, it also set the level in the High Tech Industry Development Zones to 15% with the first two years exempted after the start up of new operations in the zone.

As discussed above, the zones very much reflected the priorities of the high tech manufacturing good emphasis of the Eighth Five Year Plan (Ding, 2002). In Taiwan, as the government encouraged higher value added and technology in EPZs they also carefully upgraded the *capabilities* of potential workers. The policies of widespread education for literacy under the Japanese, was continued by the KMT government which by 1968 included free and compulsory education for the first nine years. In line with encouraging an increasing sophistication in industry and creating a dynamic comparative advantage emphasis was on vocational education in high school reaching 66% of total enrollment in 1980 (from 37% in 1950) and scientific and engineering skills in university (40% of total enrollment already by 1972) (Brautigam, 1995).<sup>12</sup>

Companies have clear aims in zones including ease of entry and exit; access to high quality, reliable and low cost infrastructure; propitiously located zones (proximity to export facilities, but also the closeness to input and output markets); low cost, reliable and well trained labor force (educational levels, work habits, wages and benefits, nature and extent of unionization and the supply of labor; ease of operations (nature and exercise of regulations effecting areas like production, labor and the environment will have a direct bearing on the ease of operations); political and economic stability<sup>13</sup>; economies and externalities (specialization in operations of a similar nature allowing joint strategies in bargaining, gain from labor force training of similar companies and capturing significant economies through specialized services and infrastructure: access to domestic markets; flexibility of zone administration; and numerous incentives provided by the government (tax reductions, holidays, subsidies on infrastructure, access to inexpensive credit, extension services). Many of these aims are not in harmony with country developmental interests (eg..companies would like to operate in a footloose manner and leave at the whim of the decision of corporate headquarters,etc). Based on some of the examples above, what we see is states ability to capture FDI through a sequence of contingent incentives that increase the long term integration into the local economy in

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<sup>12</sup> Of course the breakdown of the total is one indicator. Another is the number per capita. In engineering, for example, in 1985, Taiwan had 767 engineers per 100,000 population. A study of 13 African countries put the number at 9 per 100,000 (Brautigam, 1995). Initially, until Africa can increase the supply of human capital, the emphasis in most countries will need to be on export zones with labor-intensive processing.

<sup>13</sup> The political crisis of 2002 led to nearly 50% drip in exports from the zone in Madagascar and the departure of a number of key investors in the zone (Cling et al, 2005).

line with industrial policy priorities.

In contrast, to the experience in a number of Asian countries, African EPZ initiatives have been constrained by the anti-industrial policy sentiments embedded in World Bank imposed strategies and in the faulty conceptualization of EPZs by the IFIs.

### **Constraints on Linking EPZs to Industrial Policy in Africa: The World Bank and Neo-liberal Interpretations of EPZs**

After 1980, World Bank deconstructed African states and parastatal agencies dealing with the support of industry while at the same time opposing new industrial policy efforts by restricting the domain of state intervention to avoid distortions. The justification was laid out in the paradigm-shifting World Development Report of 1983, which was the first written under the supervision of Anne Krueger.<sup>14</sup> The focus of development should be on creating efficiency which is best generated through “the pricing of inputs and outputs to reflect relative scarcities.” Distortions in the view of the report do not arise from market imperfections but are “introduced by government directly or indirectly in pursuit of some social or economic objective”(World Bank, 1983, p.37). The report uses a rather problematic empirical exercise<sup>15</sup> to point to growth losses from government interventions at the heart of industrial policy strategies (tariffs, interest rates subsidies, less than full cost pricing of infrastructure, exchange rate interventions etc.)

Other reasons were used to reject state industrial support. State capacities are too weak because “governments have tried to control too much economic activity”. The state should focus on core responsibilities which should not include attempts to “alleviate market failures” since “all too often the attempted cure has been worse than the disease”(p.46, 52). All industrial policies must be discouraged as likely sources of corruption and rent seeking which can be best reduced by curtailing administrative interventions including “controls on international trade and payments” (p.117).

There was little change in World Bank reports over the 1980s and 1990s. The 1989 Africa study linked the poor performance of manufacturing on the continent to industrial policy type-interventions of the 1970s and early 1980s like “heavy protection, extensive regulation and directed investment” although mfg value added growth was much slower in the 80s following the implementation of adjustment compared to the 1970s.<sup>16</sup> The few manufacturing success cases like Mauritius were presented only as products of orthodox stabilization, exchange rate liberalization and trade policy which ignored the strong evidence that the country successfully used a number of industrial policy instruments to improve manufacturing<sup>17</sup> (World Bank, 1989, p.110-111).

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<sup>14</sup> A detailed and critical review of WDR 1983 including the role of Krueger and its importance in reconceptualizing the nature of the state in development can be found in chapter six of Stein, 2008.

<sup>15</sup> See Stein, 2008 for a critique.

<sup>16</sup> SSA MVA annual growth rates were 5.7% 1970-80 and only 2.0% in 1980-90 (Lawrence, 2005).

<sup>17</sup> See for example Milner, 2001 and Lall and Wignaraja, 1998 for the role of trade and industrial policy in Mauritius.

The anti industrial policy sentiment continued with the World Bank's East Asian Miracle Study which concluded that "the promotion of specific industries did not work" and therefore held "little promise for other developing countries" (World Bank, 1993, p.24).<sup>18</sup> Following the report the main World Bank Africa study was unambiguous "governments should not try to pick 'winners'...Governments can best help entrepreneurs discover and develop competitive exports by getting out of the way..."(World Bank, 1994, p.192)..

By 1997, the Bank recognized that countries may fail to industrialize due to market failures<sup>19</sup>, and that there might be justification for industrial policy intervention due to "information and coordination problems" (World Bank, 1997, p.72). However this is dismissed for the same reasons as the World Bank Report of 1983: "pursuing this style of investment coordination presupposes levels of public and private institutional capability that are beyond the reach of most developing countries" and would likely lead to rent-seeking and corruption(ibid, p. 73).

Along the same lines, the conception of EPZs by the Bank was completely collapsed into their neo-liberal framework and seen as a surrogate to neo-liberal trade reforms not as an extension of industrial policy. This is clearly stated in numerous Bank documents. For example a lengthy World Bank review of the role and impact of EPZs, emphatically states "an EPZ is not a first best policy choice. The best policy is one of overall liberalization of the economy... Nevertheless, zones can play a long term dynamic role in their country's development if they are appropriately set-up...as an integrated part of a national reform and liberalization program" (Madani, 1999, p.3). Other World Bank authors argue that EPZs have failed because "of government interference and in the increasing distortions introduced in the operation of 'free trade and capital regimes" including "labor market distortions" introduced through government interference(Watson, 2001, pp.4-5). Instead of viewing EPZs as a catalyst for development EPZs should be used "to integrate its economies into the global economies" and should be "aimed at a well-defined market" (Watson, 2001, pp1, 12).

This vision of zones has driven the EPZ agenda in many African countries with problematic consequences. Countries like Madagascar and Kenya have been able to expand jobs and increase exports by emphasizing unregulated low wage labor intensive industries like textiles, and AGOA eligibility largely aimed at the US markets. French and Mauritian capital were particularly attracted to Madasgar in the 1990s although Asian capital also become interested as countries came up against their multi-fiber ceilings. In Madagascar, by 2004 there were over 100,000 employees in the Zone Franche (more than 90% in textiles). Monthly wage for an unskilled textile industry machine operator was less than one-third the equivalent wage of Mauritius, half of China and 60% of the average wage of India. Although productivity was lower unit labor costs are among the lowest in the world. Generally wages are even lower with longer working hours compared to the comparable

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<sup>18</sup> The literature critical of the study is extensive. Wade (1996) sums it up nicely. "The trouble {with the anti-industrial argument}, as several of the analysts of shown, is that most of the evidence does not survive serious scrutiny"(p.24). He provides a good summary of the main critiques and an excellent presentation of the history of the study.

<sup>19</sup> See Chang, 1996 for a good summary of this literature.

industrial jobs outside the zone although the wages exceed informal sector levels. There is a very high labor turnover rate, although the high unemployment levels on the island ensure a ready supply of labor (Cling et al, 2005).. However, even these somewhat problematic jobs are being lost due to the end of the multifiber agreement and the a focus on a single market, the US. Textile exports to the US have fallen from \$324 million in 2004 to \$290.3 million in 2007 or nearly a 11% decline(USITC, 2008).

Kenya also rode the multifiber agreement and AGOA to focus on textiles in their EPZs. Between 2000 and 2004 the number of jobs in the garment sector of the EPZs went from 5,600 to 34,614. The zones were overwhelmingly in garment production and constituted roughly 92% of the total employment in 2004. However, like Madagascar, the end of the multifiber agreement was taking its toll with garment exports to the US from the zones falling from \$221 million in 2004 to \$195 million in 2005 or nearly a 12% decline. Overall textile exports to the US from Kenya fell from \$277.3 to 248. 4 million between 2004 and 2007 or also an 11% decline (USITC, 2008). The downward trends in Kenya and Madagascar are pretty typical for all of SSA in the garment field following the end of the multifiber agreement. SSA textile and apparel imports to the US fell from \$1.8 billion in 2004 to \$1.3 billion in 2007 a drop of nearly 30%. Over the period, SSA has become even more dependent on oil product export to the US. In 2004 73% of all imports to the US from SSA were in energy related products. By 2007, the figure was up to 80%. If you exclude South Africa the figure in 2007 was 93% up from 89% in 2004! These are the stats from a country that is supposedly helping to create opportunities for SSA to diversify its exports through AGOA(USITC, 2007).

Export processing zones in Africa have generally had poor forward and backward linkages because they have not been designed with an institutional focus relative to the industrial policy priorities of the country. In Madagascar roughly 75% of non-labor inputs in its EPZs are from foreign sources which is considerably higher than the non EPZ industrial sector (Cling et al, 2005). Since inputs can be brought in duty free it is difficult for developing countries to compete with the high quality goods available elsewhere. As we saw above the most successful zones from a developmental perspective have been those with significant partnerships between local and foreign capital not only for technology sharing benefits discussed above but also because it can lead to higher levels of backward linkages.<sup>20</sup> Much can be learned from foreign investors. Joint ownership arrangements with local capital are more conducive to the spread of technology which is one of the reasons for the success in China (Ge, 1999). In Madagascar only 11% of enterprises had local ownership (Cling et al., 2005). The Kenyan EPZs are also overwhelmingly foreign owned. Only 28.4% were joint ventures (KEPZA, 2005).

Not all zones in Africa have focused on textiles. The Onne Oil and Gas Free Zone in Nigeria which

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<sup>20</sup> As the Mauritian Minister of Industry and Commerce pointed out a workshop I chaired at a Corporate Council in Africa summit in Washington, D. C. in May, 1997, local capital (often from the sugar sector) used joint operations to learn about textile manufacturing. By 1997, over 60% of investment in the export processing units was from local capital. The Minister emphasized that one of the major reason for the success of the EPU in Mauritius, is their domination by local capital which has a vested interest in developing linkages to the local economy.

I first visited in 1997 provides a good example of a zone with great promise if it was part of a broader industrial strategy.

### **Onne Oil and Gas Free Zone**

Under the Oil and Gas Free Zone Decree No. 8 of the 31st of March, 1996, all approved enterprises operating within the zone was exempt from taxes. Any goods imported into the zone were free of customs duties as long as it is in connection with an approved activity. Under section 18 the other provisions to attract foreign investors included repatriation of capital with appreciation, remittance of profits and dividends earned by foreign investors in the zone, no import or export licenses, rent free land (only guaranteed at the construction phase), up to 100% ownership of business, employment of foreign personnel subject to visa approval by the Authority operating the zone and no strikes or lockouts for a period of 10 years.

The project was divided into three phases. The first stage, which commenced on March 8, 1997, provided a Free Port/Free Trade Zone at the Onne Port Complex covering an area of 220 acres. It included fencing off the territory, streamlining the port facilities to accommodate the traffic, expanding customs and pre-inspection capabilities and clarifying the procedures for moving cargo from the airports into the zone. The focus was primarily to act as a transshipping point to service the oil and gas industry. The second phase at some point was to expand the area to cover 730 hectares. The second phase could be aimed at more systematically developing an EPZ. A third phase would make available more territory by incorporating the undeveloped Ikpokiri island area into the zone.

There are a number of issues that can be raised. At its initial phase, the developmental potential of the zone was limited. There has been a significant increase in port activities. However with the exception of a cement factory, precast panel factory, pipe coating and machine shop, most of the activities are focused on warehousing for oil companies. Still roughly 7000 jobs have been generated with about 112 companies using the site (as of January 2007)<sup>21</sup>. To date the main beneficiaries are the oil companies which have a free and secure area with few hindrances for storage. They are able to obtain equipment and parts for expansion or servicing much more rapidly allowing economies to be gained in shipping and the reduction in delays in production. Nigeria and other regional countries gain largely from the potential increase in oil exports<sup>22</sup> There are, however, significant institution building opportunities. It can provide the training of organizations that will need to operate an EPZ. To upgrade and expand the zone into an EPZ, the FP/FTZ must be successful. This is an ideal chance to solidify relations and build up trust with companies that can participate in future assembly/manufacturing activities.

The key to a successful zone is the ability of the overseeing Authority to act efficiently and independently while encouraging more developmental activities. In a zone organized as a storage and shipping depot, goods must be moved rapidly to accommodate the oil industry. The

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<sup>21</sup> As of April, 2008 the number of companies had grown slowly to around 118 (Onne, 2008)

<sup>22</sup> Onne is perhaps the most propitiously located port in West Africa in terms of its centrality and proximity to oil and gas zones in and around Nigeria while being well sheltered but readily accessible to ocean vessels (up to 10 meters draft).

organization of the zone, as originally specified in the Decree, created some potential difficulties (as the discussion below indicates many of these have now been addressed). The Decree established various agents of the government in the zone (customs, police, immigration etc.) and if the experience of other countries is any indication, this created the danger of red tape or corruption. The ability of the Authority to intervene against representatives of other government agencies was also uncertain in the Act. Under Section 5-1-f, labor disputes could not be settled independently of the Federal Ministry of Labour Productivity.

Also as established in the Decree, the Governing Board was given wide representation from ministries, agencies and business organizations. The powers of intervention were not clearly specified. This created some opening for patronage or political interference in the running of the zone. The management of the zone, in the Decree, was initially specified as the government organization the Nigerian Export Processing Zone Authority. The zone like most successful operations must implement "one stop" procedures for approving operating licenses. Procedures were not clearly defined in the Decree.

In the early stages, the Nigerian government, began to address some of the concerns.<sup>23</sup> Based partially on the poor response to the Calabar zone<sup>24</sup> which was organized along similar lines and due to the comments by the oil companies planning to participate in the zone, the government moved forward to reconstitute the composition of the Governing Board to include broad representation of oil related companies operating in the zone.<sup>25</sup> The Ministry of Commerce and Tourism signed a 5 year technical management contract to run the zone with Intels, a private jointly Nigerian and foreign owned company that has been running three ports in Southern Nigeria (Warri, Calabar and Onne) since 1982. The contract was subsequently extended, Intels was given broad

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<sup>23</sup> The discussion below is based on interviews in April 1997 in Lagos, Port Harcourt and Abuja with officials of the Nigerian Port Authority, Customs Authority, oil supply companies, Ministry of Commerce and Tourism and Intels the private company contracted to run the port and zone.

<sup>24</sup> The Calabar export processing zone, which was constituted in 1992, has been a great disappointment. Although the infrastructure has been well developed there have been a number of operational problems. First, no provision has been made for a free port in Calabar due to disagreements between ministries. Second, the port is situated far from the ocean up a river which is in constant need of very expensive dredging. Third, before the zone was organized little effort was taken to locate potential users. Fourth, mixed signals have been sent. A 1994 Executive Council ruling permitted companies to receive the same benefits as those operating in the zone if they were exporting more than 60% of production thus providing little incentive to participate in the Calabar zone. By April 1997 only two companies were operating in the zone. Partly to address the failure Nigeria abrogated the rule that companies must export at least 75% of their production effectively making Calabar a free trade zone. By 2004, 22 firms were located in Calabar with employment of 2000 workers producing goods mostly for the domestic market. This is still a terrible disappointment by any standard given what has been invested in the zone (IMF, 2005)

<sup>25</sup> In 1997, the zone indicates a board structure chaired by the Minister of Commerce and Tourism with representation from the Nigerian Port Authority, the Nigerian Customs Service, The Ministry of Petroleum Resources and five representatives from the oil producing and service companies (Intels, 1997, p.15). In my interviews in Nigeria other structures have been discussed including representation from a larger number of ministries and oil companies as well as from regional countries permitting companies operating in their territorial confines to utilize the zone. The latter representation might encourage more regional participation and diminish the possibility of costly duplication and competition.

powers to act as the agent dealing with immigration, registration, marketing and police affairs while acting as the intermediary between customs, shipping and terminal handling (www.onnefreezone.com).

The infrastructure has been gradually upgraded. Measures included a dual carriageway into the port (which was a two lane congested mess when I was there in 1997), a fibre optic cable into the zone, extending the runway at Port Harcourt airport to accommodate larger aircraft, and completing the Federal Ocean Terminal to handle larger ocean going vessels. The quay length is currently 790 meters but is being expanded to 1,576 meters to accommodate up to a 70,000 ton vessel(NPA, 2005).

Intels has moved toward the simplification of procedures for granting a license which moves in the direction of a one stop approach. All applicant companies require a Free Zone License and operate in the zone under two categories "Special" and "General" Licenses, the former for companies incorporated outside of Nigeria and the latter for companies incorporated in Nigeria. The former is limited to doing business outside the zone within Nigeria through an agent or distributor. While the management contract gives Intels the right to issue Free Port, Special and General Licenses, all companies require registration by the Nigerian Department of Petroleum Resources (DPR) to operate in the zone and companies operating under the General License category also need a certificate of incorporation from the Nigerian Registrar of Companies.

Overall, the Nigerian government took early steps in response to participants which indicated that kind of flexibility associated with successful zones elsewhere. Moreover, they have recognized the need to move slowly and prudently in order to gain experience and credibility a prerequisite for administering a more developmentally oriented zone.<sup>26</sup>

Ultimately for the zone to have greater consequences for local or national development goals, a careful phasing process must be planned including the design of the proper incentives to encourage more value-added activities, more upgrading of infrastructure within and to the zone, incentives for oil company suppliers to locate manufacturing enterprises in the zones, the creation of facilities to train the labor force in line with new production, encouragement of more joint production agreements with local capital, extension of tariff free imports and other zone rights to domestic suppliers outside the zone, the setting up of new quality control agencies staffed by engineers to work with potential zone suppliers, the organization of new industrial policy units at the national or local level etc.. In essence, what is needed is a strategy aimed at creating an institutional matrix of new norms, capacities, incentives, organizations and capacities. To date, however, there seems to be little understanding of the kind of interventions and industrial policy that is required to transform this zone into a center of oil and gas related manufacturing.

## **Conclusions**

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<sup>26</sup> This was very explicit in my discussions with officials at various government levels.

The paper has pointed to the importance of industrial policy related interventions in the management of developmentally successful industrial zones. For Africa, there are some serious challenges ahead. First there are some potential fallacy of composition problems that could occur if too many countries produce the same types of labor intensive goods (Kaplinsky, 1993). Second, competition to attract a fixed amount of foreign capital might lead to high levels of expenditures on infrastructure and very costly provisions of incentives that might lead to a significant loss of net benefits for countries operating zones. Third, one of the big incentives of investment in zones in the past has been the Multi-Fiber agreement and AGOA. However as we saw, since the expiration of the agreement in 1994, there has been a precipitous decline in textile imports into the US from SSA.

These caveats point to the need to avoid a laissez faire/second best solutions to orthodox liberalization approaches to organizing export oriented zones. One way of addressing these issues is through spatial conceptions that might lead to the specialization of zones by product type that matches the design of zones with potential users. In this regard within the Nigerian context, the contrast between Calabar (which only employs 2000 people) and Onne which is organizing the zone in close cooperation with oil related companies, is striking. International or regional bodies can help coordinate efforts to ensure zones encourage economies and regional market access while avoiding costly duplication and competition. An industrial policy approach using better sequencing and incentives to use local inputs with the encouragement of joint ventures between FDI and local capital must be put in place-something that does not seem evident at this time.

Zones should not be seen as a panacea for solving the diverse and complex economic problems of all African countries. However, well designed zones can play can contribute to the developmental competitiveness of African countries and ultimately the standard of living for a population captive for too long by the false promises of entrenched orthodoxy.

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