

**A Review of the Role and Impact of
Export Processing Zones**

August 1999

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Acknowledgment

The author wishes to extend special thanks to A. L. Winters for his suggestions and assistance throughout the development and completion of this document. The author also thanks W. Martin, J. Emery, J. Alvarez, R. Smith, M. Schiff, D. Keesing, P. Blay, J. Hanna, T. Kusago, C. Barham, T. Akiyama, F. Bakoup, N. van Gelder, A. Grudzinska, C. Azi, S. Gray, M. Dorfman, G. Byam, R. Blake, E. Scanteie and G. Pursell, for their contributions during the research and writing of this paper. The author also acknowledges and appreciates comments and suggestions made during the presentation of this paper at the World Bank DEC/RG in February 1998. All remaining errors are those of the author.

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Acronyms and Abbreviations:

EPZ: Export Processing Zone

EPF: Export Processing Firm

WTO: World Trade Organization

RIA: Regional Integration Agreement

RTA: Regional Trade Agreement

EU: European Union

NAFTA: North-American Free Trade Area

OECD: Organization for Economic Cooperation and Development

CBI: Caribbean Basin Initiative

Executive Summary

I. Introduction, Definition, characteristics and goals:

Export processing zones (EPZs) have become rather popular trade policy instruments since their modern revival in the late 1950s. While in 1970 only a handful of countries permitted a zone, a recent OECD publication (1996), places the total number of zones at 500 located in 73 countries

- We define export processing zones as fenced-in industrial estates specializing in manufacturing for exports that offer firms free trade conditions and a liberal regulatory environment (World Bank, 1992:7). We allow for some domestic sales and include export processing firms (EPFs)- which benefit from the same EPZ incentives without being fenced in - in our analysis.

- The primary goals of an export processing zone are:

1. To provide foreign exchange earnings by promoting non-traditional exports.
2. To provide jobs to alleviate unemployment or under-employment problems in the country and assist in income creation.
3. To attract foreign direct investment (FDI) and engender technological transfer, knowledge spill-over and demonstration effects that would act as catalysts for domestic entrepreneurs to engage in production of non-traditional products.

- Zones share a few common features:

1. Unlimited, duty-free imports of raw, intermediate input and capital goods necessary for the production of exports.
2. Less governmental red-tape. More flexibility with labor laws for the firms in the zone than in the domestic market.
3. Generous and long-term tax holidays and concessions to the firms.
4. Above average (compared to the rest of the host country) communications services and infrastructure. It is also common for countries to subsidize utilities and rental rates.
5. Zone firms can be domestic, international or joint venture. The role of FDI is prominent in EPZ activities.

Zones can be categorized into public or private zones (owned or managed), and high-end or low-end. The latter distinction refers to the range of quality of management, facilities and services provided by the zone and therefore, the type of firms populating it.

II. A broad brush picture of EPZ experiences:

- Under propitious circumstances and good management, EPZs generally achieve the two basic goals of creating employment (especially non-traditional employment and income opportunities for women) and increasing foreign earnings. For instance, Mauritius EPZs boasted 71 percent of the nation's gross exports in 1994 and employed 16.6 percent of the work force. However, some argue that the net foreign earnings may not constitute a large enough sum to warrant the investments undertaken by the country to accommodate a zone. The opportunity

costs of such public investments should be considered more closely. Furthermore, there are potential revenue losses from concessions on income taxes and tariffs.

- EPZs are sensitive to the national economic environment. They will perform better when the country pursues sound macroeconomic and realistic exchange rate policies (Romer, 1993; Alter, 1991).

- Zones may contribute to the building of national human capital in two ways.

Previously unskilled workers have benefited from EPZ presence. Their productivity has increased via job training and learning by doing. The benefits of this skill acquisition is limited however, as most production processes are low-skill and low-tech. The most valuable aspect of this type of employment, aside from the income earned, may be the workers' learning of industrial work discipline and routine.

- Training has also occurred at the supervisory and managerial level, with local employees becoming privy to new organizational and managerial methods, negotiation and marketing skills, general business know-how, foreign contacts and entrepreneurship.

- In addition, a successful zone, per se, is an efficient and competitive industrial infrastructure. As such it provide the country in which it operates an industrial set-up which it may lacks. Most African nations would fit this profile.

- There are many cases of catalyst and demonstration effects (Rhee, 1990, Rhee and Belot, 1992) on the host economy. These effects, together with the labor training, may be the zone's lasting contributions to the country in which it operates.

- Creation of backward linkages seems largely conditional on the industrial base of the nation. In countries which did not already enjoy a solid industrial base and which adopted EPZs to encourage these linkages and foster a domestic industrial base, some linkage occurred, though it was spotty and inconsistent, with firm zones complaining of the poor quality or the incompatibility of local inputs.

- In countries where a solid industrial base existed prior to the establishment of the EPZs -e.g. Taiwan and S. Korea- linkages have occurred. The transfer of know-how and technology was facilitated by the existing technological sophistication and highly educated labor force. In these cases, EPZs were only one tool in a panoply of governmental policies to foster economic growth through export promotion. Even at the height of their influence, EPZs never acquired a prominent role either in terms of exports value or employment creation in S. Korea or Taiwan.

- Wages in most EPZs are equal or higher than average wages outside the zones. However, there a noted variance around this average. Lax labor, work safety and health laws in many zones have raised concerns with regards to workers' welfare. The size, nationality and corporate policy of the firm, the type of industrial production, labor market conditions and the country's institutions and regulations play a determining role in establishing the wage rate, workers' rights and work environment in EPZs.

- The environmental impact of zone production and lax government regulation and monitoring has also raised some concern. There is some information confirming environmental pollution, however, we lack systematic qualitative and quantitative analysis on the topic that would lead to well targeted, sensible regulation and monitoring.

- Some consider a successful zone a good model for country policy makers to mimic in formulating liberalizing domestic policies. In this case EPZs facilitate liberalization efforts. Others argue that a successful zone may be used as a safety valve, providing jobs and foreign exchange earnings, and thus easing the pressure on policy makers to undertake economy wide reforms. Zones would then be a stumbling block to liberalization. A third and more recent development is that of post -macro and trade- reform economies (such as Uganda) considering or establishing zones (among other export promotion tools) to bolster low FDI inflows.

- Overall, the EPZs did not universally fulfill the role of “engines of industrialization and growth” as some proponents had anticipated. They have been an engine --among others -- in the economy, when they have been given their proper place as a policy tool, and where proper perspective is taken as to the their ultimate achievements and costs. EPZs’ greatest contribution seems to be job creation and income generation. Their lasting legacy can be three fold. They can contribute to building human capital, and through their demonstration and catalyst effects on the country entrepreneur pool. Also, an efficient, competitive zone is an industrial infrastructure that many countries lack.

- EPZs face new challenges in the increasingly global economy. Rapid changes in consumption preferences and the resulting competitive pressures to meet this demand can affect the locational choices of investors. Furthermore, increased product sharing is changing the reducing the need for country specific technical expertise. This phenomenon has a differential impact on industries as a function of their technical sophistication.

- Exclusion of a country from a preferential trade/integration arrangement seems to impact EPZ firms and EPFs which operate there negatively (e.g. Impact of NAFTA on firms and EPZs in the Dominican Republic). These firms may or may not flourish from the membership of their host country in preferential trade arrangements. The EPZ firms’ (and EPFs) initial product mix, market orientation, technological sophistication, strategic business planning and adaptability to the new competitive conditions will have a material influence on their continued success and contributions to the country in which they operate.

- The compatibility of EPZ incentives with WTO rules is country specific. Many of the incentives offered to firms are considered export subsidies and developing countries may or may not qualify for a timed or extended exemption from them. Least developed countries and developing countries with less than \$1000 per capita GNP are exempted from disciplines on prohibited export subsidies.

III. Policy recommendations.

A. General economic policy:

- An EPZ is not a first best policy choice. The best policy is one of overall liberalization of the economy. Furthermore, EPZs and EPFs are only two of many trade instruments used by firms and countries to promote export development and growth, and have limited applicability. Other policy tools may therefore be more appropriate for a specific country than an EPZ

- Nonetheless, zones can play a long term dynamic role in their country's development process if they are appropriately set-up, well managed, WTO compatible in its incentives, and used as an integrated part of a national reform and liberalization program. At the very least they should not constitute stumbling blocks to the reform process by being used as "safety valves". In this manner, the host economy will benefit more fully from the zones potential contributions in terms of human capital and their demonstration and catalyst effects.

- Establishing an EPZ in a country that has undertaken trade and macroeconomic reform is not recommended on three grounds. First, the low FDI inflow may be due to inadequate legal or regulatory framework, or distorted economic incentives in other areas of the economy (e.g. private property laws). Second, EPZs are distortionary trade instruments and introduce an element of discretion into the policy environment. Finally, even if export promotion is in order (i.e. WTO compatible and deemed a solution to the country's low FDI inflow), an EPZ may not be the best instrument to achieve such a goal.

If these economies are intent on establishing new zones, suggest minimal differential fiscal incentives compared to the national standards, minimizing their distortionary impact on the host economy.

- **Bank Involvement:** based on the discussion above, it is suggested that the Bank be very selective and cautious in its support of EPZ projects. The decision and extend of the involvement should be made on a case to case basis. In such cases, the Bank should seek external expertise and advice in all aspects of the project it is involved in, including but not limited to project design, development, implementation and management.

B. Detailed policy guidelines:

If a country intends on keeping its existing EPZs as distinguishable entities or in establishing EPZs, the section below provides specific policy guidelines to enhance the probability of success of such an undertaking.

- **General economic environment:**

Sound and stable monetary and fiscal policies (low inflation, budget management, independent monetary policy), clear private property and investment laws provide a general environment propitious for EPZ success. Most EPZs provide free flow of firms' earnings at market exchange rates.

- **Taxation and tariff structure:**

Moderate income and corporate tax rates are recommended. There is no need for "overly friendly tax incentives (such as permanent tax holidays or waiving all taxes). Provide for accelerated depreciation, rationalize and minimize indirect taxation and licensing practices. Improved collection rates can partially compensate for potential revenue due to reduced tax rates.

Ensure that EPZs can import and export free of trade taxation and tariffs.

- **Provision of infrastructure and subsidized utilities:**

Private development and management of EPZs, including on-site infrastructure (pavements, building shells, etc...). Provision of infrastructure external to the zone proper can

have positive spillovers for the local and national economy by facilitating transportation and communications (telephones, roads, ports and airports). In this case, if private development is not available for the infrastructure external to the zone, the public role has an economic rationale.

Subsidizing utilities encourages over-consumption and discourages economically rational use of resources and factors of production, detracting from the zones benefits for host countries.

- **Labor rights, wages and workers safety:**

Labor market constraints increase labor costs and slow market adjustment. In this sense, more business friendly labor laws are beneficial. However, this need not be accompanied by disregard or abuse of workers' safety and labor rights as is the case in some zones. Strengthening regulatory and monitoring activities will reduce labor turn-over and absenteeism and improving workers' productivity.

- **Environmental issues:**

Most developing countries have lax laws and implementation. Concern exists regarding the EPZs large production volume -and its potential pollution level- compared to the host economy production levels. In this area, a first necessary step is to form a better qualitative and quantitative understanding of these industrial wastes and their impact on air, soil, water and human health. Follow-up regulation, provision of incentives and monitoring should be tailored accordingly.

C. Administrative and regulatory guidelines:

1. Perform a careful analysis of incentives offered, their costs to the country, and the type of industries and investment packages (e.g. short or long term) they attract.
2. Incentives need to concur with the WTO rules and time-lines on export promotion instruments.
3. Permit locationally diverse zones and export processing firms.
4. Ensure adequate infrastructure (roads, ports, electricity, water, sewage disposal or treatment).
5. Provide efficient, streamlined and prompt government for the establishment and running of an EPZ (approval of firm applications; customs and other supervisory institutions).
6. Encourage establishment of privately owned and managed zones.
7. If interested in establishing and running public zones, ensure minimal bureaucratic red tape by providing the zones with a large degree of autonomy from the central government.
8. Geographical location of the country (e.g. land locked) together with distance and access to firms' targeted markets and communications and transportation sophistication and cost have a material influence on the attractiveness of the zone.
9. Preferential trade arrangements (regional trade hub or RIA, bilateral or multilateral trade agreements such as CBI, Lome, ...) influence a country's attractiveness because of the potential enlarged size of the market and/or lower barriers to entry to desired markets.

A Review of the Role and Impact of Export Processing Zones

I. Introduction and Definition

Export processing zones (EPZs) have become rather popular trade policy instruments since their modern revival in the late 1950s¹. While in 1970 only a handful of countries permitted a zone², a recent OECD publication (1996), places the total number of zones at 500 located in 73 countries³. Most recently, Papua New Guinea and Namibia, among others, have either planned or established one.

But what are EPZs? A first section of the paper provides a definition and a few variants. It also discusses some of a zone's characteristics and the major goals of countries who establish them.

The second section presents an overview of the theoretical pros and cons as well as the actual experiences of EPZs in the last three decades, evaluating the merits and failings of this increasingly popular policy tool. As such, it provides more recent qualitative and quantitative information, updating the assessments of the literature with regards to the zones. This section reiterates and emphasizes the potential long term gains to the host nations in terms of human capital build-up, demonstration and catalyst impacts discussed in the literature (for instance: World Bank (1992)). It also notes that in many developing economies lacking a modern and efficient industrial infrastructure, a well managed EPZ provides such a structure, albeit in a small

¹ The appendix in the World Bank publication Export Processing Zones, 1992, provides an excellent historical background on the zones.

² World Bank (1992) places this number in 1970 at seven countries.

and locationally limited context. The labor work health and safety and environmental issues related to EPZs are discussed in more depth. Finally the pros and cons of establishing an EPZ in an economy that already has a liberal trade and macro policy framework (as in the case of Uganda) is discussed.

A third section discusses the recent issues related to EPZs compatibility with Uruguay round agreements and how they would fare if the country in which they operate participated in a preferential arrangement (regional, bilateral or multilateral). Here, we highlight the fact that while exclusion from a preferential arrangements may hurt the firms active in the excluded country, membership in such an arrangement does not insure gains and success for firms.

Section four outlines the practical aspects of setting up an EPZ as means of ensuring its success. Section five presents reviews the overall EPZ experience from the perspective of two countries in Africa. Section six concludes, providing policy suggestions with regards to the appropriateness of, and general administrative and regulatory guidelines for establishing an EPZ (including pre and post trade liberalization scenarios).

A. Definition

A.1 What are EPZs?

An export processing zone is one of many trade policy instrument used to promote non-traditional exports. Other such instruments include but are not limited to import tariff drawback arrangements, temporary admissions and export subsidies. Often, when countries or firms use

³ OECD cites Lloyd's 1995 unpublished paper on this topic.

these alternative trade tools to promote non-traditional exports successfully, EPZs do not play a large role in exports or in the economy⁴.

An export processing zone has adopted features from the much older industrial park and free trade area concepts⁵ and appeared in the late 1950s to early 1960s⁶ in widely separated locations. It has since propagated across developed and developing countries, mutating to match the economic environment and the policy agenda of each host country.

When discussing EPZs, a variety of terminologies, such as industrial free zones, free trade zones, special economic zones and maquiladoras are used interchangeably through most of the literature. Johansson (1994) supports such a clustering, arguing that the general concept of all these terminologies is basically the same. On the other hand, Rhee, et. al. (1990:4) argue that free trade zones (FTZs) include export processing zones, but that many export processing zones are not free trade zones⁷.

The World Bank (1992) has based its analysis on the premise that “ an export processing zone is an industrial estate, usually a fenced-in area of 10 to 300 hectares, that specializes in manufacturing for export. It offers firms free trade conditions and a liberal regulatory environment (pg. 7).”

⁴ Taiwan and S. Korea are examples of such a case.

⁵ The appendix in the World Bank publication Export Processing Zones, 1992, provides an excellent historical background on the zones.

⁶ The World Bank (1992) considers the Shannon Free Zone in Ireland, set up in 1959, as one of the first EPZs.

⁷ He defines FTZs as EPZs with free trade and other equal footing export policies, which include: realistic exchange rates; free access to raw materials, inputs and capital goods at world prices, easy access to short term trade financing at market interest rates; and easy access to investment licensing and financing for the creation of export production capacities.

The ILO/UNCTC study (1988) provides a similar definition⁸.

Both the World Bank and ILO/UNCTC definitions are restrictive and exclude a large number of EPZs in developing countries that espouse a more accommodating set up. For instance, some firms are not geographically constrained in industrial estates (Mauritius, China). In others, firms are allowed to sell a percent of their output within the domestic market (Dominican Republic, 20 percent ; Mexico today, 20-40%). Some, like the existing Manaus (Brazil) EPZ and the prospective EPZ in Papua New Guinea, are permitted unlimited sales to the domestic market.

The ILO/UNCTC report acknowledges that such “off-shore manufacturing facilities” ...“represent, in terms of employment or output, approximately half of the weight of EPZs proper: in 1986, for instance, there were some 620,000 workers employed throughout the developing world in offshore manufacturing facilities other than EPZs, against 1.3 million in the narrowly defined EPZs” (1988:6).

There are however both theoretical and practical reasons for adopting a narrow definition of export processing zones. The ILO/UNCTC report opts for it on two grounds. The first is a practical one: the qualitative and quantitative data are better in the enclaves. The second is an analytical choice: enclave manufacturing for export is essentially segregated from the rest of the society. Its existence and performance raises interesting questions regarding its contribution to the growth and development of the host country.

⁸ The ILO/UNCTC study suggests the following definition: “...an EPZ could be defined here as a clearly delineated industrial estate which constitutes a free trade enclave in the customs and trade regime of a country, and where foreign manufacturing firms producing mainly for export benefit from a certain number of fiscal and financial incentives” (1988:4).

We have opted to base our work on a more inclusive definition than the ones used by the World Bank (1992) and ILO/UNCTC (1988). We will include the EPFs as well as those EPZs allowed to sell some share of their output in the domestic market. We made this choice for two basic reasons. First, adhering to a narrow definition of EPZ would be empirically somewhat outdated. It would strip the policy analysis of much of its breadth and depth since many of the zones are based or have evolved into the more inclusive definition of the EPZ. Our definition of EPZs will include Mauritius, Mexico and Dominican Republic but still exclude the China SEZs and the Manaus (Brazil) zone⁹. We will also exclude all socialist, ex-socialist and newly independent states as well as developed countries from this study due to space constraints or lack of data.

Overall, throughout the analysis we will draw on examples from East Asia, Central and Latin America, Africa and Bangladesh. Two African examples will be presented in more detail in section V. Appendix B provides limited information on another five African countries' EPZs.

A.2. Primary goals and characteristics of EPZs and EPFs

There is an overall consensus on the primary goals of an export processing zone:

1. Provide foreign exchange earnings by promoting non-traditional exports.
2. Provide jobs to alleviate unemployment or under-employment problems in the host country; assist in income creation.
3. Attract foreign direct investment (FDI) to the host country.

⁹ For more details on the Chinese Special Economic Zones, refer to China: Foreign Trade Reform, World Bank, 1994, Annexes 6.2 and 6.3.

4. In the case of a successful EPZ foreign direct investment would be accompanied by technological transfer, knowledge spill-over and demonstration effects that would act as catalysts for domestic entrepreneurs to engage in production of non-traditional products.

While there is agreement about the objectives of an EPZ, there is no general consensus about their definitive characteristics. There are none the less, a few common features to these zones. They were originally conceived as fenced-in production areas (a la industrial parks). A long existing – and in the 1990s increasingly popular - alternative been the export processing firm (EPF), which benefit from some of the EPZ incentives without being fenced in an identifiable area.

They also usually benefit from the following:

1. Unlimited, duty-free imports of raw, intermediate input and capital goods necessary for the production of exports.
2. Less governmental red-tape, including more flexibility with labor laws for the firms in the zone than in the domestic market.
3. Generous and long-term tax holidays and concessions to the firms.
4. Above average (compared to the rest of the host country) communications services and infrastructure. It is also common for countries to subsidize utilities and rental rates.
5. Zone firms can be domestic, international or joint venture. In many cases there is no limitation on foreign ownership of the firms or on the repatriation of the profits. The role of FDI is prominent in EPZ activities.

EPZs can be differentiated by their ability to sell their output (in part or whole) in the market of the host country. Those which are not permitted such a transaction fit the more traditional definition of EPZ. Some countries have adopted a more flexible stance with regards to such sales and allow some percent of the EPZ production to be sold on the domestic market after appropriate import tariffs on the final goods are paid. For instance, Dominican Republic allows up to 20 percent of the EPZ products into its domestic market while Mexico lets 20-40 percent in. A final category of EPZs permits the free sale of its products on the domestic market. Manaus (Brazil) is one such zone¹⁰.

Zones can also be divided into public and private zones. The older zones were typically setup and run by the host government. In the past 10 to 15 years however, an increasing number of zones have been developed and are being managed by private entities. We discuss the superiority of private versus public zones later in this report (section IV.C).

Finally, zones can be categorized as high-end or low-end. This distinction refers to the wide range of services provided by the zone (quality of management and facilities) and therefore, the type of firms populating a zone.

A.3. Why do countries use EPZ and EPF schemes?

EPZs and EPFs are two of the many trade policy tools at the disposal of a developing country government. Typically, they are created as open market oases within an economy that

¹⁰ See Manuel-Rodriguez (1996) "The Manaus Free Zone of Brazil" in R. L. Bolin (ed.) Impact of 57 New EPZs in Mercosur, the Flagstaff Institute. In fact the Manaus zone firms processed imports for the sole purpose of selling their final product on the domestic market.

is dominated by distortionary trade, macro and exchange rate regulations, and other regulatory governmental controls.

Traditionally, there are four competing, but not exclusive, views on the role of EPZs in an economy. One considers it as an integral part to further economy wide reforms. In this light EPZs are to have a specific life span, losing their significance as countries implement systemic trade, macroeconomic and exchange rate reforms. As the economy opens up and a country develops its capacity for competitive industrial exports, EPZ's exports and employment share in total export and employment falls. Both Taiwan and S. Korean EPZs fit into this category.

A second view sees EPZs and EPFs in terms of a safety valve. They provide much needed foreign currency to accommodate import needs for the host nation and create jobs to alleviate some of the national unemployment or under-employment. However, with the country not liberalizing the rest of the economy, the EPZs remain enclave production areas with limited economic contributions. Tunisia is an example of such a case.

A third view is that EPZs be used as laboratories to experiment with market economy, outward oriented policies. China's early special economic zones have been seen as embodying this third view (World Bank, 1994, appendix 6.2). Here, new production, labor and financial relationships and dynamics were introduced and evaluated, before introduction into the larger Chinese economy.

A final, less orthodox, and much more recent, take on the role of EPZs comes from some developing countries in which the level of FDI following trade and macro-policy reforms has been disappointing. Some are considering establishing (or have established) EPZs to

enhance the incentives to attract FDI, matching or surpassing the incentives provided by their neighboring (and potentially competitor) countries for these investments.

All four views still consider the EPZs as source of technological transfers and human capital development. There is, no doubt, a certain level of catalytic and demonstration effect (Rhee, 1990; Rhee and Belot, 1990) on the domestic private industries. The zone may also be providing a well-managed and efficient industrial structure in a nation that may not possess one. The labor force also benefits from technical training and learning-by-doing in the zones, although according to the literature, most of the zone firms use low-tech, labor intensive production processes. It appears the most valuable training for the labor force may be the work discipline they acquire for industrial production.

It is also interesting to note that in the past 30 years EPZs have been implemented at two different development stages. One set of countries have reverted to them in the early stages of their industrial development, with the expectation that they provide the “engine of growth” to propel their economies into industrialization. They also sought production and export diversification. Mauritius certainly fits this bill, but so do the more recent African hosts of EPZs such as Namibia and Togo. A second set of countries (South Korea, Taiwan and some developed countries such as the US) implemented EPZs when they already had a strong industrial production and exports sectors¹¹.

¹¹ On this point Rhee (1990:43) notes that “by 1962, four years before the first FTZ existed, Taiwan’s share of manufactured products in total exports has reached 50%, from less than 10 percent in the early 1950s.”

Potential gains and caveats to EPZs

Potential Gains from an EPZ	Caveats to these Gains
<ul style="list-style-type: none"> • Increased foreign exchange earning 	<ul style="list-style-type: none"> • These gains may be overstated
<ul style="list-style-type: none"> • Increased gross exports 	<ul style="list-style-type: none"> • Net exports not as impressive because of high import content of exports
<ul style="list-style-type: none"> • Job creation / income creation 	<ul style="list-style-type: none"> • Lack of job security, prone to demand shocks
<ul style="list-style-type: none"> • Average wage in EPZ higher than average wage outside the zone 	<ul style="list-style-type: none"> • There is a large variance around this mean
<ul style="list-style-type: none"> • Good source of labor training and learning by doing. Assists countries in developing an industrial labor force. 	<ul style="list-style-type: none"> • True but skills are generally low-tech.
<ul style="list-style-type: none"> • Management and supervisory training 	<ul style="list-style-type: none"> • No caveats.
<ul style="list-style-type: none"> • Catalyst effect/demonstration effect 	<ul style="list-style-type: none"> • No caveats
<ul style="list-style-type: none"> • Provides efficient industrial structure in countries that may not possess one. 	<ul style="list-style-type: none"> • Forgone taxes, tariff revenues and opportunity cost of public investments related to the zone may be high.
	<ul style="list-style-type: none"> • Environmental damage and labor and work safety issues due to lax laws and/or governmental supervision.

Three Current Issues Affecting EPZs and EPFs:

- Rapid changes in tastes and consumption patterns and the globalization of production processes may have lasting impact on EPZs and EPFs.

In the case of many consumer goods typically produced in EPZs, changes in consumer preferences and the increased pressure to meet these changes as quickly as possible have impacted the geographical investment choices of producers.

The globalization of production, the easier movements of capital and lower transportation time and costs, have facilitated segmentation of production processes, reducing the need for country specific technical expertise. This phenomenon has a differential impact on industries as a function of their technical sophistication. For instance, the need for generic low-tech skills can be satisfied by a number of countries, providing producers a larger selection of sites.

- Exclusion of a country from a preferential arrangement seems to impact EPZ firms and EPFs which operate there negatively (eg. Impact of NAFTA on firms and EPZs in the Dominican Republic). These firms may or may not flourish from the membership of their host country in preferential trade arrangements. The EPZ firms' (and EPFs) initial product mix, market orientation, technological sophistication and strategic business planning will have a material influence on their continued success and contributions to the country in which they operate. These contributions will also be conditional on the firms' ability to adapt to the new rules of the trade arrangement, the more competitive market conditions and demands, and new technology.

- The compatibility of EPZ incentives with WTO rules is country specific. Many of the incentives offered to firms are considered export subsidies and developing countries may or may not qualify for a timed or extended exemption from them. Least developed countries and developing countries with less than \$1000 per capita GNP are exempted from disciplines on prohibited export subsidies. They have exemption from other prohibited subsidies until 2003¹². The export subsidy prohibitions will not apply for the remaining developing countries before 2003¹³. These countries have a time-bound (5 years) exemption for the other prohibited subsidies.

¹² These other subsidies are those addressing domestic content rules and preferential treatment of domestic vs. imported inputs. In this case, the rule does not apply to least developed countries for a period of 8 years.

¹³ For eight years from the date of the entry into force of the agreement.

II. The Economic Arguments For and Against EPZs

This section lays out the theoretical and empirical arguments regarding the use of EPZs in developing countries. Three economic schools present differing assessments of the impact of these zones (see also Appendix A).

The neo-classical analysis suggests that EPZs have a negative welfare effect on the country: the creation of zones will increase inefficiency by distorting production away from its comparative advantage (Hamada, 1974). However, Devereux and Chen (1995) argue that EPZs are likely to be welfare-improving under a much wider variety of circumstances than previously believed¹⁴.

Two schools of thought question the neo-classical assumptions and conclusion. Warr dismisses the neo-classical analysis, arguing that:

“This literature has drawn upon the classical Hecksher-Ohlin model of production. Insofar as the model treats capital as being internationally immobile, it fails to capture the international mobility of capital goods - which is central to the functioning of EPZs. The main conclusion of most of this literature - that EPZs necessarily reduce the welfare of the countries - is thus largely irrelevant for EPZs as they actually operate” (1989:66).

He promotes the cost-benefit approach to assess the impact of the zones. The third school, the new growth theory, argues that the neo-classical approach does not take into account the zone’s spillovers on to the host nations. In light of the human capital enhancement and demonstration and catalyst effects of the zones, it advocates amending the originally negative neo-classical assessment of the EPZs (e.g.: Johansson,1994).

¹⁴ They also argue that an EPZ will increase (reduce) the likelihood of liberalization in a tariff (quota) regime.

In this section, we opt for a more practical approach, discussing that outlines zone benefits and drawbacks. We allude to the three theoretical approaches above when appropriate.

This exercise is necessarily a comparative one. We discuss the expected “gains” and “shortcomings” of setting up and operating an EPZ, but compared to what economic scenario? We assume the comparative base -or theoretical anti-monde - to be one where the host economies have restrictive and distortionary trade and macro policies (possibly practicing import substitution). They have not (or are only just starting to) undertaken liberalization.

The accompanying outline provides a quick review of these benefits and drawbacks. They are not ranked in order of importance¹⁵.

A. Foreign Exchange Earnings Potential

Foreign exchange earnings are one of the main benefits expected from an export processing zone. Such a criterion is an incomplete measure of the success or failure of a zone or a firm active within it. Nonetheless, It is argued that EPZs provide foreign exchange earnings that allow low income economies to slacken the foreign exchange constraints regarding their import needs for the rest of the economy and provides the government with development funds¹⁶.

¹⁵ This is because zones have been established with one or more of these goals in mind.

¹⁶ This inflow of foreign exchange could be used in a host of ways. For instance, it could be earmarked for public investment, policies supporting the development of the domestic industries, or allow for a more graduated adjustment for countries undergoing structural adjustment programs.

Note, however, that foreign exchange earning gains may have been overstated. First, in the case of foreign owned EPZ firms, foreign exchange benefits accrue to the country under specific circumstances. According to Warr (1989) this process only occurs when the foreign owned firms exchange their foreign earnings into domestic currency at the official rate (through the central bank) to pay labor wages and other expenses incurred in the host country. Unless the country adheres to a floating exchange rate system the government's rates do not usually represent the true shadow price of the foreign exchange. The shadow price of the foreign exchange is higher than the official exchange rate¹⁷. As such, the government of the country taxes the EPZ firms.

Early work on EPZ impacts showed substantial growth in gross exports, leading experts to support the zones enthusiastically. In some countries increases in gross export and earning of EPZs have been phenomenal. For instance, in Mauritius, EPZ exports earnings grew from 3 percent of total export earnings in 1971 to 52.6 percent in 1986 and 68.7 percent in 1994¹⁸.

However, the statistics on net exports have not been as promising. For instance, Amirahmadi and Wu (1995) argue that among the Asian hosts of EPZs net export growth performance has neither been consistent nor impressive. Many of these countries have generated large amounts of gross exports. However, while Indonesia, South Korea and Taiwan managed a high ratio of net to gross exports - 49 to 63 percent in the mid-1980s - Malaysia, the Philippines and Sri Lanka did not. Philippines' net to gross exports ratio in the 1980s is

¹⁷ That is, the value placed on one unit of foreign exchange is higher than the official exchange rate.

¹⁸ See Rhee (1990:39) for first two data sources. 1994 value calculated from Bank of Mauritius Quarterly Review, July-December 1994.

erratic, ranging from 1.6 percent (1987) to 49 percent (1980). In the late eighties and into the mid-nineties, this ratio has shown less variance and a relatively steadier trend, reaching 42.4 percent in 1994¹⁹.

The dichotomy between the performances of gross and net exports is due to the fact that zone firms import a large portion of their raw and intermediate input, leading to weak or non-existent backward linkages with the domestic markets. The Jamaican zones are a case in point. In 1996, total gross exports for the three Jamaican zones were US \$235.4 M while their total net exports only summed to US \$28.90 M (see Table 4)^{20,21}. For Bangladesh's CEPZ zone the ratio of net to gross exports has improved since the mid-1980s (from an average of 11 percent in the second half of 1980s to an average of 20 percent in the first half of the 1990s). However, 94 to 97 percent of total imports into Bangladeshi zones are foreign²², signaling weak backward linkages (see table 4). Jenkins et. al. (1998) report the same phenomenon in the case of Central American zones. For instance, the share of domestic raw

¹⁹ Data from ILO's 1996 Working paper (no. 77) entitled Export Processing Zones in the Philippines: A Review of Employment, Working Conditions and Labour Relations.

²⁰ Information obtained from the WEPZA 1996 International Directory of Export Processing Zones and Free Trade Zones, published by the Flagstaff Institute.

²¹ Some argue that even though net exports are not as high as expected, the high gross export volume is a good sign because it translates into high firm profits. This argument will only be true under specific conditions: (1) if the high export volume translates into high revenue earnings for the firm and (2) if there is a large enough margin between revenues and costs. However, in the case of textile and garment producers (which compose a large number of EPZ firms) profit margins are rather low. (3) Even if profits are high, their positive impact on the host economy is determined by what the firms do with these earnings. That is, only if firms reinvest part or all of their profits into expansion of their activities or other productive activities in the host country, will this later benefit.

²² Data from ILO's 1998 Working paper (no. 80) entitled Export Processing Zones in Bangladesh: Economic Impact and Social Issues.

materials and supplies in total production averaged 6.0 percent in Costa Rica and Guatemala during 1994-96.

While creation and development of backward linkages with the domestic industry is an important long term goal for many countries in which EPZs are active, a low net export ratio is not per se a negative outcome. The goals set by policy makers for the zone may determine the importance of the net export ratio. For instance, the volume of trade and level of activity of the firms may be large enough to provide other benefits – such a large employment and technological spillover effects –partially making up for weak backward linkages.

Warr (1989) points out that the global strategy of international corporations investing in the zone may be to seek the cheapest reliable international supplier instead of a comparable domestic source. This is because they may want to “preserve the international mobility of their processing operations” and forging a long term economic relationship with country suppliers would defy this strategy. Also, according to Weiping Wu, foreign firms tend to have a higher propensity to import than domestic firms²³. This tendency would increase if the foreign firm has expatriate management. Unfamiliarity with the country market and input quality would make it more likely to purchase inputs from known sources abroad. This, together with the fact that most zone productions involve low value added, does not leave room for a large net export balance.

Even if the foreign exchange earning potentials of the zones were not overstated, they could be reached through a less isolationist approach than an economic enclave. Implementing

²³ Weiping Wu’s work is on China’s Special Economic Zones and is referenced in Amirahmadi and Weiping Wu’s 1995 paper.

a set of credible, consistent and coordinated monetary, fiscal, trade and exchange rate policies would bring about such an outcome while providing a propitious reform and growth environment for the economy as a whole.

This first goal of EPZs, generating foreign exchange for the countries in which they are active, has not been an across the board and unequivocal success. While some countries have achieved a high level of net exports (S.Korea), others have not been able to close the gap between gross and net exports (Jamaica).

B. Tax Revenue/Tax Loss Effect

The establishment of EPZs seems to be synonymous with the country providing a multitude of tax breaks and tax holidays to attract foreign direct investment to their zones. Table 1 compares the incentives offered in EPZs in the Caribbean and Central America (from Weersma-Haworth, 1996). All countries offer similar tariff-free imports and export, free repatriation of profit and market access. The length and extent of tax provisions varies across nations. While Honduras offers federal, state, local and corporate tax exemption in perpetuity, Costa Rica only provides a full income tax exemption for six years.

These incentives match those offered by other zones around the world. Table 2 reports the concessions some African countries offer their zone firms. As can be seen, these zones are every bit as competitive with regards to financial and tariff concessions as their Caribbean and Central American counterparts.

Some argue that potential tax revenue losses are outweighed by gains accrued in terms of employment creation and provision of foreign exchange earnings. For instance, they point to

the fact that as it pertains to profit taxes, most firms in EPZs pay little tax under any regime. They will typically use transfer pricing or another mechanism usually available to export firms to transfer profits out of the higher tax jurisdictions.

Several counter-points weaken this argument. First, the EPZ costs are not limited to those of forgone tax revenues. Many countries sink in a sizable investment to provide production (in case of public EPZs) and transportation infrastructure, utilities and communications facilities, and administrative support to the zones²⁴. We need to also consider the opportunity costs of the EPZ related investment funds. Second, the practical impact of tax breaks depends on tax laws in the investors' home country. If the firms are subject to tax-sparing agreements, in which any tax exempted in the country is considered by the home country as having been paid in the host country, then the benefits of a tax holiday accrue to the firm. On the other hand, if home countries provide tax credit for the taxes firms pay in host countries, reducing country tax rates below those of the firms' home country levels may just lead to a net transfer from the host country treasury to the home country treasury (World Bank, 1992).

Tariff and other indirect taxes are rather important tax sources for governments in many developing country, where the actual direct tax (income tax) collection is well below the

²⁴ Some argue that such public investments are not necessary and should (at least partially) be left to the care of the zone promoters and firms. They note that in many cases these subsidies (e.g. utilities) existed for most other economic agents as well. They point out that EPZs should not be held accountable for the government's "misguided" investment choices. None the less, the reality of it is that many countries undertake these investment to defray initial costs and provide added incentives to attract foreign investment to the zone.

potential/legal tax ceiling²⁵. Foregoing such an important source of income may not be a trivial policy choice. For instance, R. Hood and D. Radack (1997) report that in 1995, in Belize “the largest of these (tariff exemptions) is for the imports of the development concessions (free zones) and accounts for B\$17 million out of a total B\$46 revenue loss” (1997:6) or 37 percent. Easterly (1993) reports that reliance on trade taxation is heavy in developing countries, especially in Africa where it composes 35 percent of revenues. Matusz (1997) report that explicit trade taxes accounted for 38 percent (19%) of total tax revenues in low (middle) income countries.

Finally, unless domestic firms benefit from such tax (income, trade,...) privileges, bestowing them on EPZ firms discriminate against the domestic firms excluded from the zone (World Bank, 1992). The special treatment acts as a barrier to connect with the host economy (Johansson, 1994: 399). More specifically, if domestic firms do not benefit from functional drawback policies, the tariff free inputs for the firms in the zone acts as import subsidies competing against domestic input production and discouraging creation of backward linkages.

If countries do not allow domestic sales of EPZ products, the potential for forward linkages vanishes as well.

C. FDI Effect: Catalysts

²⁵ This could occur for a host of reasons, including tax evasion, poor tax collection infrastructure, and undeveloped tax framework. A potentially large share of economic activities in developing countries takes place in the informal sector, thus evading taxation. Easterly notes that “over half of urban employment in Africa is said to be in the informal sector” (1993:189) and therefore out of the realm of government taxation.

The foreign direct investment effect goes beyond that of receiving needed infusion of capital (financial as well as machinery) from developed countries. Johansson (1994) frames these contributions in terms of positive spillovers²⁶ (see Appendix A). Successful FDIs in a zone represent a showcase for domestic firms and potential entrepreneurs to learn from and copy²⁷. Rhee, et. al. (1990) refer to them as the “catalysts” for they initiate and nurse non-traditional export-oriented production into maturity by combining their technical, marketing and managerial know-how and their access to world markets with the domestic endowments.

Both the literature and eyewitness accounts confirm the foreign catalyst impact on the domestic entrepreneurial pool. Two prime cases are Mauritius and Dominican Republic. However, it is difficult to capture the catalyst effect. In a detailed study of eleven export catalysts in low-income countries, Rhee and Belot (1990) suggest that this “catalytic” and demonstrative aspect of EPZs renders them quite valuable to developing countries. They (1990) trace out the dynamic learning and application of foreign knowledge that took place, creating successful business ventures. 6 out of the 11 success stories were sparked by the cooperation of foreign and domestic catalysts. The foreign involvement was not limited to partaking of knowledge however. There was also an investment of capital and technology.

The advent of the age of information technology (internet, etc...) and the revival of the regional integration agreements (RIA) may lead to the demonstration effect losing some of its relevance. If these developments provide alternative sources for the “knowledge package” the

²⁶ Johansson (1994) uses the new growth theory framework for her analysis. She argues that the negative neo-classical conclusions should be amended to take into account these positive spillovers.

²⁷ In the literature, this is also known as the demonstration effect.

EPZs are said to bring to the host countries, the gains from the latter would be correspondingly less essential.

D. FDI Effects: Technology Transfer, Knowledge Spill-Over and Backward Linkages

The countries implicitly hoped that the positive spill-overs of FDI would extend beyond the demonstration effect discussed above to include technology and further knowledge transfer. Such a transfer, together with the “catalyst” factor, would foster industrial development in non-traditional goods and efficiency gains in production processes of the traditional ones²⁸. Such a transfer would also foster a backward linkage to the country firms, which would allow them to step in as suppliers to the EPZ firms in the medium to long run. This process would integrate the zone into the regional and national economy and promote regional development beyond the immediate and limited servicing of the enclave structure. Eventually, it was hoped, these domestic supplier firms would mature to compete in the international market.

Economic linkage between zone firms and domestic suppliers has taken place, but it is not a universal phenomenon: its level and extent is vastly variable and zone and country specific. Establishing such a backward linkage seems to match the predictions of the absorption capacity hypothesis. In other words, if technologies between the EPZs and domestic firms are vastly different, little backward linkage occurs because of domestic firms’ lack of absorption

²⁸ This would move the economy to a new and higher production possibility frontier.

capacity. If however, there is some degree of technological compatibility, linkage may be established. So:

- In developing countries in the early stages of development, linkage has occurred when the firms in the zones used basic production processes, where domestic raw materials and intermediate inputs could be used. A great success story in this regard is the experience of the Indonesian zones, where the dominant garment industry uses domestic cloth and other raw intermediate inputs for its production. Amirahmadi and Wei (1995) put the domestic share of total raw materials used in the zones at 15 percent. The Philippines has a comparable ratio to that of Indonesia. A 1986 study of Malaysian zone firms shows they earned 25 percent of the net national foreign exchange, with the cost of labor accounting for a large share of it. Wijewardane (1993) considers the Malaysian case as one where there has definitely been a successful linkage between zone firms and domestic suppliers.

- Linkages also occur in advanced developing countries like S. Korea and Taiwan, where a large industrial base already existed and could provide electronics firms in their zones with high quality, internationally competitive components. For instance, Wang (1990) reports that in 1988, 1000 Taiwanese firms were subcontracted by EPZ firms to the tune of US \$392 million. 250 of these domestic firms carried out partial processing. On average the domestic suppliers provided some 25 percent of all EPZ inputs.

Cho Kwang-Ku (1990) describes a similar phenomenon he calls “out-processing” at the Korean Masan EPZ. Out-processing “is when a zone’s resident firm entrusts a part of the whole manufacturing process outside the zone to permit carrying out manufacturing processes which create pollution, ... or are very simple, or to provide the ability to process rush orders

which could not be achieved in existing facilities; or to reduce costs (pg. 30).” This phenomenon has increased in magnitude over the years. While in 1976, there were 94 out-processing firms employing some 4518 workers outside the zone (or 15 percent of zone employment), by 1988 56 out of the 73 zone firms had engaged 525 domestic firms for outsourcing processes. These 525 employed 16,686 workers , equivalent to half of the entire Masan zone work force. This very successful backward linkage permitted increased employment and exports as well as transfer of technology²⁹. The author also notes that salaries are in general lower than in zone firms and that there is less employment security because of the sub-contracting nature of the job.

However, linkages have not been across the board and wide-spread for several reasons. First, in many countries backward linkages are not very strong because of weak or non-existent physical and business infrastructure. Second, in many cases, the poor quality, issues of supply reliability and non-competitive pricing of domestic raw or intermediate goods hampers the creation of such linkages. In this aspect, the host government may be an impediment. If trade and macro policies (e.g. protectionist trade measures) encourage non-competitive behavior in domestic firms then the government should share in the responsibility for the absence of (or weak) backward linkages.

The changing industrial composition of the EPZ, the industrial sophistication of the domestic production and the labor force also affect the creation of backward linkages. For instance, if the EPZ specializes in producing garments or shoes, it is likely that some domestic

²⁹ The author states that there is spread of technology from EPZ firms to outprocessing firms, acknowledging that quantifying such a transfer is difficult. He does note that some of the later firms

raw material may be used in its products. If, however, the EPZ switches to production of electronics or optical goods, and if the domestic industry is not sophisticated enough to provide the EPZ firms' necessary inputs, the backward linkage does not necessarily materialize. (Warr, 1987: 224).

The corporate policies of international firms may discourage them from creating a long term relationship with a domestic supplier. These firms may find more flexibility in securing a competitive international supplier. Also, the ownership composition of the zone firms may impact creation of local economic ties. According to Wei, foreign companies and foreign managers have a propensity to purchase their input materials from abroad, while domestic firms in the zone and native managers tend to purchase some inputs on the home market³⁰.

Finally, the regulations and laws of the firms' home countries may also constrain the creation of backward linkages in the host country. For instance the U.S. law on the Mexican Maquilas does not make any provisions for the use of Mexican inputs.

Overall, the literature agrees that the goal of fostering backward linkages and technological transfers has not lived up to its promise. Some countries have succeeded in establishing backward linkages with the zones firms. Indonesia is such a case. The 1982 Jakarta EPZ ratio of net exports to gross exports of 63 percent is rather telling of this success³¹. Others, however, have not achieved this goal. According to Bermudez (1997), the national content in the gross value of production in Mexican maquilas has declined from a high

have become major exporting firms using techniques and quality control provided by zone firms.

³⁰ See footnote 8.

³¹ See Amirahmadi and Wei (1995), table 2.

of 31 percent in 1975 to 23.9 percent in 1993. Over the 1975-93 period, domestic raw material have only captured some 1-2 percent of the gross value of production³².

With regards to technological transfers and spillovers, zones are, for the most part, labor intensive, low-tech assembly firms, with no access to advanced technology. They tend to be dominated by a specific industry, with the first/early major firm influencing the nature of that industry (see tables 5a and 5b)³³. Some zones, such as the ones in Sri Lanka and Indonesia, are dominated by the garment industry. Others specialize mostly in electronics. For instance, in 1979 in Malaysia, 74.5 percent of the firms were engaged in production of electronic goods (Weersma-Haworth, 1996). With regards to the latter, Warr (1989) points to the fact that foreign firms keep research activities and high-end production processes at home and protect their high-tech secrets well. Furthermore, in industries such as garments, technology has not changed in many years, so there is really no new transfer occurring.

The enclave economy that results from lack of linkages and technological spillovers leads many in the host economy to question the value of a policy such as an export processing zone³⁴.

E. Employment Effect on Local/National Economy

³² Salaries and benefits represent the largest chunk of the national content in maquila production. This share has also been declining from a high of 19.1 percent in mid-1970s to 13.3 percent in 1993.

³³ That is, once an early/first major firm identifies the comparative advantage in locating in a specific zone, other firms specializing in the same industry tend to locate there as well. We could view it as the late arriving firms “free riding” on earlier established firms who have shouldered the cost of researching and identifying a zone with comparative advantage in their shared area of production.

³⁴ See, for instance, Broad and Cavanaugh, 1993

Job creation is considered one of the primary goals and one of the most important contributions of any EPZ to the economy. This goal is based on two assumptions. The first one is that the country has high unemployment or underemployment. This is a reasonable assumption and the argument would work only until the excess labor is absorbed. Then the host nation faces a tight labor market and rising labor costs. Of course, rising labor costs translate into higher labor income, and improving workers' living standards. However, they may also make EPZs and domestic exports less competitive in the world market. It may even deter future firms to choose this nation due to its higher variable costs or even encourage footloose EPZs to relocate to cheaper shores. This is occurring in Mauritius. According to Alter (1991), the unemployment rate in Mauritius fell from 14 percent in 1985 to less than 3 percent in 1989. The island nation has since experienced very tight labor markets and increasing wages .

The second assumption equates creating jobs with alleviating unemployment.

EPZs have created jobs, and where successfully managed and developed, a remarkably high number of them. For instance, the zones in the Dominican Republic employed 504 workers in 1970. By the end of 1988, this number had reached some 85,468 or 4 percent of the total employment in the economy (Dauhajre, et. al., 1989). ILO(1998) estimated the 1996 employment numbers to be 164,634..

With an unemployment rate of approximately 20%, it is uncertain whether the Dominican economy would have been able to create this number of jobs and its resulting income in the absence of EPZs. For the workers, the alternative to EPZ employment is often unemployment, underemployment or return to village subsistence life. If the workers are

unemployed, their opportunity cost is zero and any new activity – including that of EPZ firms – which expands employment will have a high economic rate of return.

This situation is not specific to the Dominican Republic economy alone. It seems to hold for a majority of developing countries in which EPZs are active.

Note, however, that there are also a multitude of countries where the development of a zone and the resulting employment creation did not live up to expectations. Senegal is such a case (see table 3 and section V.B.). The poor choice of location and unsatisfactory infrastructure led to only partial occupancy of the zone in the case of the Philippine's Bataan zone. Employment reached a high of 20,788 in 1980 before falling back down to 13,639 in 1988. By April 1995, paralleling an overall expansionary period for EPZ activities in Philippines and around the world, the Bataan zone employment had bounced back substantially to reach 18,255³⁵.

However, the socially explosive unemployment issue has not necessarily been resolved for a majority of the countries for two reasons.

1. EPZs have created jobs and absorbed labor from the host countries. However, as can be seen in table 6, the annual increase in the size of the labor force in some of these nations dwarfs such an unemployment alleviation. For instance, in the Philippines in 1997 EPZs employed almost 183,709 workers. Although this number is remarkable, it only constitutes 0.59 percent of the 30.88 million in the labor force that year. The increase in the labor force from 1995 to 1996 alone was some 1.4 million workers. In

³⁵ ILO, 1998.

others, such as the Dominican Republic, EPZ job creation is important, employing some 5 percent of the labor force.

2. EPZs were established in the hopes that they would absorb some of the male unemployment rampant in many of these countries. However, it seems that across the board, a large portion, if not a significant majority of the jobs in the EPZ zones are held by women. For instance, in the Caribbean EPZs approximately 80 percent of the labor force is female (Dunn, 1994). In Mexico, in the late 1980s, 54 percent of the work force in the maquiladoras were female (Summerfield, 1995)³⁶. In 1995, women constituted 74 percent of the work force in the Philippines 4 public zones. This is especially true in EPZs specializing in garment production.

F. Women and EPZ Employment

Women, many young (16 to 25) and single, are attractive as prospective employees for the following reasons:

1. They don't stay on the job for a long time (most marry and leave after a few year), and therefore, do not tend to get involved with an organized labor union.
2. Plant managers prefer to hire women because they are diligent and dexterous (Summerfield, 1995:35).
3. Women are paid a lower average wage than their male co-workers.

³⁶Tzannatos and Kusago (1997) claim that there is a downward trend to women employment.

This can be argued from two different perspectives. The neo-classical economist would argue that the shadow price of the women's work is lower since most did not have "formal" sector jobs previous to the establishment of the zone and might have stayed at home in its absence. Furthermore, they are unskilled with no or little work experience. The lower wages represents their lower skills and productivity.

A more matter of fact analysis is that firms erroneously (or opportunistically) believe that women's salaries is supplementary to the main family income (husband's income), and therefore need not be as high as their male counterparts. Romero (1995) argues that some of the wage differential is due to the gender bias in recruitment and promotion.

A majority of the women working in these firms are young and single. According to Dunn (1994) a good number of them may be single heads of household as well. For instance, in the Dominican Republic, "a 1981 survey found that for 38 percent of women working in FTZs, wages were the main source of household income and that almost one half of the women were divorced, single or widowed"³⁷ . ILO (1998) reports that in Guatemala 45 percent of female zone workers were single mothers while in Honduras 22 percent of women reported that they were the sole source of income in the household. Another 73.5 percent stated that they contributed fifty percent or more of their wages to the household.

Women have become the unintended beneficiaries of the formation of EPZs, since many might not have sought formal market employment (with its higher salary and other potential benefits) were it not for them. They may have remained fully or partially employed in

³⁷ Dominican Republic, CEM document, The World Bank.

the informal market or stayed at home. For example, women constitute 70 percent of the workforce in Bangladesh's Chittagong EPZ, a much higher ratio than the national average (ILO 1998).

As such, EPZ employment affords women an independent source of income and more status within the household and society as a wage earner. For instance, in the Dominican Republic, many consider the EPZs as an important factor in decreasing the share of female poor from 22.6 percent to 15.8 percent over the 1986-1993 period³⁸.

Such an employment and income opportunity, however, does not necessarily alleviate women household responsibilities (such as cleaning, cooking, and child rearing). So that they will shoulder what is commonly known as a double-shift workload: a full shift at work and another one tending to household needs.

This status gain comes with a few other caveats. In many cases the division of labor within firms leaves men in supervisory and managerial positions while women's jobs tend to be clustered on the production floor, where there is less opportunity for advancement and promotions. For example, in Bangladesh's Chittagong EPZ, the proportion of female workers categorized as "production worker" is much higher than the male proportion (98.4 percent to 79 percent). Concurrently, women are largely under-represented in the "technical" and "salaried employees" categories, signaling that women are disproportionately assigned to low skill/low pay jobs (ILO, 1998). Of course, this does not mean that women are locked out of

³⁸ Information provided by James C. Hanna, World Bank 1998.

supervisory and managerial positions in all EPZs. For instance, in the Dominican Republic, many (not to say most) supervisory positions on production floors were held by women³⁹.

Dunn (1994:25) also notes that women's jobs are "labor-intensive, segmented, monotonous, repetitive and require few industrial skills". Their male counterparts fare better in both salary and learning of industrial skills.

But most importantly, because of taste or economic changes in countries importing the EPZ products, and lack of employment protection, women's jobs tend to be less secure than their male co-workers⁴⁰. These latter tend to be unionized and working in industries that are not as readily affected by demand shifts in developed markets. Dijkstra and Aleman (1996) remark on this job insecurity in the El Salvadoran case. They describe zones jobs as more like seasonal work than a permanent ones, with contracts lasting 3 to 6 months. They also note the low skill intensity of production and assembly activities.

This insecurity and cyclicity of employment is also connected to the footloose nature of EPZ firms. Warr (1989) discusses this characteristic at length. Broad and Cavanaugh (1993) and Dijkstra & Aleman (1996) verify it in the case of Philippines' Bataan zone and El Salvador respectively. However, a minority in the literature disclaims this categorization. According to UNCTAD (1993), these firms are far less "footloose" than is commonly believed.

³⁹ Interview and post-interview notes with J. Alvarez, World Bank, 1997.

⁴⁰ This "cyclical or insecure aspect of the EPZ employment was confirmed by J. Alvarez in an interview regarding Dominican Republican zones. However, Mr. Alvarez and other experts also point out that workers seem to consider the EPZ jobs as a type of short term contract work. They also emphasized the fact that these workers do not have promising domestic employment alternatives, and would probably be unemployed if it were not for the zone work.

Broad and Cavanaugh (1993) also relay another interesting economic observations occurring in the Bataan Zone in the late 1980s. They describe a process of sub-contracting former EPZ garment jobs (which garnered higher pay and benefits for the workers) as homework to non-regular, nonunion workers. These later are paid less and have no benefits. Earlier, we noted the same phenomenon occurring in South Korea.

There are two competing views on this development. Broad and Cavanaugh (1993) believe that this “out-sourcing” renders the job creation/labor income benefits of the EPZs more questionable when compared with the social cost of creating them. This is because these jobs are less secure and pay less (and have no benefits) than the ones in EPZs. An opposing view argues that if there are no other comparable income earning alternatives in the host economies, then such employment opportunities are positive ones. There are also gains in spreading training, knowledge spillovers, backward linkages and catalyst behavior (see sections II.C and II.D above).

G. Education/Training Benefits (Human Capital Development).

There has no doubt been a great deal of knowledge spill-over effect from the creation of EPZs in developing countries. Anecdotal support abounds about how a previously unskilled labor force has become semi-skilled and skilled production workers through training and learning by doing on the job. Rhee’s 1990 survey of Dominican Republic zones provides more concrete evidence. He reports a very steep labor productivity learning curve for the first three years of a firm’s operation, followed by a noticeable flattening out of the curve. By extension, these improved skills and productivity increase the workers’ income earning capacity. Given

the high labor turn-over rate in the EPZs, domestic firms get the opportunity to benefits from this training and skills by hiring workers previously employed in the zone firms.

Some employees also receive training at the managerial or supervisory level, thus enriching the entrepreneurial capital of the country. Also, the presence of EPZs allows domestic entrepreneurs and workers to benefit from observing and copying the traits that make the zone firms successful exporters. These traits may include managerial and production organizational skills, negotiations and marketing skills in dealing with foreign contractors, general business know-how and foreign contacts.

In fact, many view the positive human capital gains and catalyst effect such valuable EPZ spillovers as to argue for a reassessment of the pessimistic neo-classical view of EPZ impacts (Johansson,1994).

This enthusiastic support of EPZs needs to be amended with two caveats. To start with, the skills that production workers acquire through training and learning by doing are not very sophisticated and may not advance their career opportunities once they move to the domestic economy⁴¹. After all, the literature is unanimous in acknowledging that EPZ production processes are low-tech and require few industrial skills. Workers become semi-skilled but the learning process is not necessarily continued beyond the basic learning and training. Rhee (1990) work supports this statement. He finds a steep increase in the labor productivity learning suggesting that workers acquire the necessary expertise in the first three years. Since

⁴¹ Tzannatos and Kusago (1997) argue that the type of short training workers receive does not help them develop skills that would improve their career prospects after they stop working in EPZs. Tzannatos and Sayed (1996) claim that workers often do not need or acquire skills other than any other worker would acquire during the ordinary course of their employment.

the production process is low-tech, and no new higher technology is brought in (especially in the garment industry), workers' productivity stagnates after this initial period⁴².

What may be even more important and valuable in the long run than the actual skills is the acquisition of the discipline required to work in an industrial environment.

Also, successful human resources development in this case depends on two critical parameters: the sophistication level of the production work; and the starting level of education and training of the workers being hired. These two parameters define a more or less steep learning curve with concordant impact (positive spill-over a la Mankiw) on the economy. In other words, the build up of human capital is optimized when the absorption capacity of the workers matches (or is slightly surpassed) by the technology they need to acquire, so that short term training, as it is provided by firms, ensures a steep learning curve and productivity increase.

H. Wages, Labor and Safety Laws

Most of the literature emphasizes the importance of facilitating "doing business" to attract FDI to the zone. One aspect of this is often thought to be low transaction cost and ease of hiring and firing workers in allowing firms to reduce their costs rapidly in a business framework highly prone to demand shocks. The burden of the cyclical nature of demand is placed on workers.

⁴² We assume no endogenous technological progress here. Also note that the two dominant EPZ industries have not provided an opportunity for elongated or repeated steep labor productivity learning curve. The technology has not really changed in production of garments in many years. And, electronics firms in the zones are mostly engaged in basic assembly of goods. So one does not expect a large knowledge or technical spill-over effect in these areas beyond the medium term. There is a possibility for a labor force to experience repeated occurrences of steep productivity learning curve. This is when a country successfully manages to upgrade /upscale the mix of the firms active in its zones from garment to basic electronics assembly and then to high-tech production activities and informatics. This, however, is not a very common phenomenon. Anecdotal information suggests that most countries have had difficulty effecting such a transformation, even Mauritius.

In the process of achieving a “business friendly” environment, wage, labor and safety laws are often relaxed.

1. Minimum wage laws and wage levels.

a. Minimum wage laws

In many countries the existence of minimum wage laws do not seem to affect zones’ wage setting patterns. The reason for this is two fold. First, in many countries the minimum wage laws are not extended to the zone firms. In some cases, they are explicitly left out to attract FDI. For instance, prior to 1993, the Dominican Republican labor law did not impose the minimum wage on its EPZs. Where zones are not excluded from the laws, they are not necessarily enforced. This leads to some employers paying below domestic minimum wage level⁴³. Second, other employers pay wages higher than minimum wage anyway. Some zones are even said to pay above market clearing salaries, following, it seems, the efficiency wage argument⁴⁴. Table 7 conveys this dichotomy in setting minimum wages. In Central America, minimum monthly wage in EPZs is higher than the national minimum monthly wage for Guatemala, Honduras and El Salvador. The opposite is true for Costa Rica and Panama.

b. Wage levels

⁴³ They use tactics such as keeping trainees - who are paid less than regular employees - in that position for unjustifiably long period, or by not adjusting the salary of workers who are no longer trainees (Jayasena, 1994).

⁴⁴ That is, above equilibrium salaries increase worker productivity (reduces her slacking time at work) because she does not want to risk to be fired. She does not want to be fired because her next best option is either to join the pool of unemployed seeking an EPZ job or to accept a job at a domestic firm at much lower salaries (Mankiw, 1987). Efficiency wages also increase company loyalty among workers and reduce turn-over, which is reported to be large in many EPZs.

A majority of sources, including OECD (1996)⁴⁵ and Romero (1995), agree that overall, wages in EPZs are higher on average than wages outside the zones⁴⁶. According to Karp (1989), the Caribbean and Central America zones typically paid 5-20 percent higher salaries than domestic firms. In the early 1990s the Malaysian electronics and textile zone firms paid 30 percent higher average wages than similar domestic firms.

Despite this general positive wage trend, wage rates vary according to the size of the firms, their nationality and policy, type of industrial production, country regulations and institutions, and labor market conditions. Tzannatos and Kusago (1997) show this wage variance across several countries and even among different industries within Malaysian EPZs. Zhu (1992) also documents this phenomenon for the Lat Krabang Zone (Thailand), the Masan Zone (South Korea)⁴⁷ and Kaosiung Zone (Taiwan). The Lat Krabang Zone paid wages similar to those in the metropolitan Bangkok area, or an average monthly rate of US \$140 in 1990. For the Masan Zone, the real national manufacturing wage was often more than 10 percent higher than zone wages over 1971-1987, except for 1975 and 1985. In 1988 and 1989, this trend reversed due to large wage increases accorded to the zone workers. The average monthly wage in the Masan Zone was some US \$820.

In Taiwan, zone workers earned an average US \$677 in 1990. Yet, the real wages in the Kaosiung Zone (Taiwan) trailed national manufacturing wages consistently over 1967-1988, except for 1985. Zhu (1992) puts this difference at 14%.

⁴⁵ OECD (1996) references a 1993 ILO publication.

⁴⁶ For a list of reasons why averages wages are believed to be higher in EPZs than outside the zone, refer to Romero (1995:253) or Maskus (1996:14).

2. Labor laws

There seems to be a definite relaxation of domestic labor laws to accommodate zone firms. This relaxation has several facets: zone exemption from compliance with national labor laws; lax governmental supervision where the zones are not exempted; and frequent overt or covert opposition to labor unionization and union activities.

There are countries where domestic labor laws apply to the zones, but are hardly or ever abided by. The lax governmental supervisory attitude gives firms much leeway in their hiring and firing practices as well as the management and payment of overtime work. OECD (1996) recognizes that while only 6 countries have deliberately reduced zone core labor standards compared with the rest of the economy, there are a few other governments who do “not sanction adequately cases on non-observance of the labor laws in EPZ (pg. 100)”. Other countries have either drawn up specific favorable labor laws for EPZs or exempted or relaxed domestic laws to accommodate them. Zimbabwe, and Malaysia are such examples (Maskus, 1996).

Unionization (freedom of assembly and association), while not illegal in many EPZs, is discouraged by many government and firm tactics⁴⁸. One such tactic would be to fire or not hire known union leader or labor activists. In Sri Lanka and Jamaica labor organizers are even prevented from entering EPZs (OECD, 1996). Work conditions can also make it difficult to organize. In El Salvador EPZs there are no active unions due to the short work contracts(3-6

⁴⁷ See also Romero, 1995.

⁴⁸ A list of such steps is provided in Annex IV of A. T. Romero's 1995 paper. It includes both laws and employer tactics to discourage unionization in 16 different developing countries.

months) (Dijkstra and Aleman ,1996). Other countries declare unions and unionization illegal in the EPZs. For instance South Korea restricted collective bargaining and unionization until 1987 and re-imposed restrictions in 1989 by declaring EPZ firms “public interest companies” (World Bank, 1994). Bangladesh has a ban on unions in its zones. Pakistan, and India also have some restrictions on unions in their zones. Only a few countries allow active unions. They include Mexico, Mauritius and Philippines. Even then, the Bataan zone unionization (Philippines) was not an automatic extension of the domestic law. It occurred only after workers’ strikes.

Although unionization is declared by ILO to be one of the core workers’ rights under the international labor law, it does not have to be a necessary avenue to settle labor’s grievances against their zone employers. Governments could firm up their labor and safety regulations and insist on firms’ compliance with them. The governments’ increased supervisory and mediatory activities would resolve most potential labor issues before they become problems. In fact, while many experts highlight the importance of low transaction cost and ease of hiring and firing workers in attracting FDI to the zone, they also point to labor protection and good working conditions as key to higher labor productivity and less turn-over⁴⁹.

3. Work environment safety and health issues

The government of the developing countries in which EPZs are active often has a weak or non-existent regulatory and/or supervisory presence with regard to the work environment

⁴⁹ Most EPZs are known for having high labor turn-over rates. Some is due to the natural attrition of young female workers getting married and leaving their jobs. The cyclical nature of EPZ employment is another explanation. A third reason for labor turn-over is prolonged periods of 50-60 hours work weeks . The Starnberg Institute (1988) reports on this fact in certain factories in Costa Rica, the Philippines, South Korea and Sri Lanka. Romero (1995), also reports a problem which she qualifies as “excessive, and sometimes compulsory, overtime... in many zones”.

safety and health issues. Occupational hazards are a subject of concern in some EPZs (Dunn, 1994), especially as they pertain to the electronics and garment industries. These range from allergies and stress from monotonous, repetitive movements to health risks associated with inadequate canteens and washroom capacities, refuse disposal, blocked emergency exit passages, etc... Several deadly incidents have raised awareness with regards to the issue. One example is the 1993 Kader Industrial factory fire in Thailand where 240 workers died because of blocked exits and the practice of storing flammable material on the factory site (Dunn, 1994:25).

Provision of amenities such as on-site canteens, day cares and health services enhances the employees' work and living standard and improves their productivity while reducing absenteeism and labor turn-over. The literature agrees that privately run, high-end zones tend to fulfill these services better than private low-end or public EPZs. For instance, the Dominican Republic private EPZs were equipped with day care and health facilities early on. The 1993 labor law made them mandatory for all EPZs.

From the scant information available, overall, the safety and the health of the workers still seem to be determined by the firm, the zone management, the type of activity undertaken, and the country. The government tends to have a weak or non-existent regulatory or supervisory presence .

Maskus (1996) argues that there is a strong positive correlation between occupational and health conditions and the presence of foreign firms, who tend to follow higher standards (especially those coming from developed countries). Finally, overall, high-end zones across nations have a better record in this area.

The government should apply uniform regulations to all zones. Whether these regulations should be less or more stringent than the ones governing the domestic industries is still under debate. Proponents of a more stringent regulations argue that governments can use them for demonstration effect, showing the domestic firms that cleaner, safer work environments will not necessarily be more costly or reduce their competitiveness. Also, some would argue that it may discourage polluting industries from migrating from highly regulated settings (especially foreign firms from developed countries) to zones with much laxer laws⁵⁰. The flip side of this analysis is that if countries opt for standards that are too stringent - and therefore potentially too costly to comply with - they may bid their zones out of the competition to attract foreign firms.

In any event, more consistent implementation of regulations and supervision are recommended to assuage overall work health and safety concerns. Addressing these issues improves workers' living standards and productivity while reducing absenteeism and labor turn-over.

I. Environmental Issues

Determining the toxicity boundaries of acceptable industrial pollution is difficult. So is consistent and thorough monitoring of industrial discharges. Two factors compound this difficulty. Some in developing countries' governments and business communities believe that industrialization and growth take precedence over environmental protection at an earlier stage of

⁵⁰ Of course, the hypothesis of migrating polluting industries is a very contentious and as yet unsettled issue and we do not claim here that such an event has occurred in the zones.

development. From these quarters the country often inherits diluted concerns about environmental issues and weak or non-binding laws. In cases where awareness regarding environmental degradation has increased, such as Dominican Republic, weak monitoring by the government and lack of environmental education at the firm level, make progress slow.

Several authors (Kennett, 1990; Dunn,1994; Broad and Cavanaugh, 1993) have expressed concern with regards to the environmental damage caused by zone activities. Others dismiss such concerns arguing that EPZ firms are not outliers compared to the domestic industries (World Bank, 1992), which in light of many developing countries' lax attitude toward environmental issues, is not reassuring.

We are not aware of a thorough and reliable documentation on the extent and gravity of the problem. One of the few articles on this area (Kennett, 1990) reports on the EPZ firms contaminating water supplies in the Dominican Republic. Kennett also notes that while the government recognizes the importance of sustainable development, environmental laws are fragmented and monitoring institutions lack coordination and have no control over EPZs. J. Alvarez provided a more complete view. He stated that the increase in environmental awareness started a long time ago and many private park operators have been working on environmental protection measures for a long time⁵¹.

The maquiladora activities on the Mexican-US border have also raised concern because of the severe border pollution. In a 1995 report, Mungaray describes the severe water pollution the city of Tijuana faces. She refers to several studies by the state's offices

showing that the discharges of the more than two hundred industries located in the Industrial City (maquiladoras), northeast of Tijuana, contain lead, aluminum, corrosive substances and a high concentration of vegetable oils. Also the Alamar Creek, which is Tijuana's only water source, is contaminated upstream by Tecate sewage and the maquiladoras' discharges. Furthermore, the reports point to the strong contamination of well waters that supply residents downstream from the industrial city. The author faults the maquiladora owners as well as the government for the severe pollution problems and lack of recycling and refuse disposal facilities in Tijuana.

Overall, awareness with regards to sustainable development and environmental protection is growing. However, lack of binding laws, lack of active monitoring by the government and lack of education slow the progress. To better address the potential environmental problems related to industrial activities (both EPZ and domestic), we need a better qualitative and quantitative understanding of their impact. The following steps would be productive in this light:

1. Undertake site and industry specific analysis of refuse composition. Industrial refuse affects water, soil, air, and thus human and wild life health. For new EPZs and firms wishing to join established EPZs this process can just be incorporated into the business application forms. Zone authorities can just request a disclosure by firms listing the expected content and volume of their refuse. For existing firms in established zones, a brief survey by the management should provide the basic information.

⁵¹ For instance, some have voluntarily given up "acid-wash" processes for jeans because of the consequent water and soil pollution. Others fly in their own consultants from the US to monitor

- The same procedure could be adapted for domestic firms, with both new and established firms reporting to a domestic overseeing organization^{52,53}.
2. The national governments need to identify how and how much EPZ and domestic industries impact their environment - for instance in terms of absolute versus incremental damage, toxic versus non-toxic levels of pollution, long term versus short term impacts. They can then draw up regulations, educate, provide incentives and monitoring to optimize environmental protection.

J. EPZs and the Economic and Policy Environment

Overall stable and business/FDI friendly economic and political atmosphere is a necessary first step and long term component for the success of EPZs. Aside from including the basic incentives described above, this stability includes political continuity and sound macro-economic and exchange rate policies. Where there has been divergence from this basic principle, the performance record of EPZs has suffered. This correlation is even discernible in the case of successful zones such as the ones in Mauritius. Alter notes that “throughout the EPZ’s history, its development closely paralleled movements in the Mauritian economy (1991:8).” The South Korean and Taiwanese zones were designed as part of an overall economic reform program and performed well in this framework. The Zairian EPZ plans were

emissions.

⁵² International organizations and developed countries could cooperate with national entities to identify, mitigate and even neutralize the negative environmental externalities. One aspect of this cooperation would involve transfer of technological and scientific know-how in identifying hazardous compounds. A second aspect involves training nationals in identification, monitoring techniques and safe clean-up and disposal of hazardous and non-hazardous refuse.

however dashed once the political unrest gripped the country in the early 1990s. Actually all private investment (domestic and international) virtually disappeared after 1990 and for a period of several years. The promising start of the Togolais EPZ was stifled in the early 1990s, when political unrest destabilized the country, but has made a come back since 1994.

There is however, disagreement about the actual policy paths governments take in response to EPZs and their performances⁵⁴. There are two schools of thought on this issue. The optimists argue that a successful zone⁵⁵ has a great deal of demonstration effect in an economy that is not liberalized. It highlights the impacts and benefits of pursuing outward oriented and export promotion policies as a “growth and development” path. As such, EPZs may play a decisive role in encouraging trade policy reforms in the whole economy. As examples, they use the Mauritian and Dominican Republic success stories

The pessimists argue that successful EPZs may act as escape valve (in terms of creating employment and providing foreign exchange) for non-liberalizing host nations. Then policy makers and politicians may not feel pressured into enacting economy wide reforms, but rather may continue with protectionist or import substitution policies. The Tunisian EPFs may be a case in point. According to Felah (1994), they have been successful exporters: in 1994 their exports constituted 40 percent of national exports. They were also employing some 117,700 workers in 1993. However, the author suggests that one of the major reasons for the lack of integration (backward linkage/technology transfer) between EPZs and the Tunisian economy is

⁵³ The discussion in footnote 43 applies directly to the issues of environmental protection as well.

⁵⁴ On this general topic see also World Bank (1992).

that domestic firms have been subject to national protectionist policies. He suggests domestic economic liberalization as a step towards enabling backward linkage.

Recently, some post -macro and trade- reform countries, disappointed in the tepid response of foreign direct investments to their ‘liberalized economic environment’ are considering establishing / or have established EPZs (among other export promotion tools) to bolster these flows. Uganda is one such case. However, other constraints may be the reasons for lackluster FDI inflows. They include inadequate private property or labor laws, the domestic endowment mix (labor education and productivity relative to real wages, industrialization level of the country, natural resources), specific transportation disadvantages (e.g. being landlocked), or absence of bilateral or multilateral preferential trade arrangements advantageous to investors. Addressing the constraints directly would be more efficient to the economy in the long run.

Resorting to new distortionary trade policy tools such as an EPZ would, indeed, raise three potential problems. First, it would introduce a discretionary, potentially protectionist, factor into policy making. Second, these measures may not comply with the WTO mandates and time-lines regarding export promotion measures. Finally, even if the interventions are deemed WTO acceptable, establishing an EPZ may not be the right interventionist tool to use and may not resolve the unattractiveness of the country as an FDI destination.

⁵⁵ A successful zone is one that reaches its expected (planned) target in all three areas: earn foreign direct investment, provide jobs and act as a catalyst (demonstration effect).

III. EPZs, Globalization, Regional Integration Agreements and WTO

A. EPZs in the context of regional integration/trade arrangements

The recent renewed interest in the creation or revival of regional trade/integration arrangements (RTA/RIA) has raised questions regarding the potential status and role of EPZs in such economic entities. This relationship is multifaceted and complex. Whether EPZ firms and countries in which they operate would be hurt by the creation or revival of an RTA/RIA is not only determined by the membership in or exclusion from of their countries such an arrangement. A host of dynamic global, regional, domestic and firm level forces may affect their performance. These forces are briefly noted and discussed below.

1. Changes in global production and consumption patterns.

In the case of many consumer goods typically produced in EPZs, changes in consumer preferences and the increased pressure to meet these changes as quickly as possible have impacted the geographical investment choices of producers. For instance in the highly competitive garment industry, where speed in production and delivery is a determinant of success, some argue that a production platform close to the final markets provides more production flexibility, lower transportation costs and shorter delivery time. These qualities may well compensate the potential higher taxes or labor costs. An American garment producer based his decision to move his production sites from Sri Lanka to Mexico on these reasons and lower duties (ILO,1998) resulting from the enforcement of NAFTA.

The impact of rapid consumer preference changes may be compounded by the globalization of the production process. This globalization of production, the easier movements

of capital and lower transportation time and costs, have facilitated segmentation of production processes, reducing the need for country specific technical expertise. This phenomenon has a differential impact on industries as a function of their technical sophistication. The need for generic low-tech skills can be satisfied by a number of countries, providing producers a larger selection of sites. This is the case for garment, which is a highly competitive, low profit margins industry where technical expertise requirements and production processes are not sophisticated and therefore do not entail country specific talents, but rather cheap and abundant labor. It may apply to a lesser degree to most low tech electronics and electrical assembly lines, which together with garment, dominate production in most EPZs. It would not match the more highly technical requirements of the chemical or high-end electronics industries in some EPZs such as S. Korea and Taiwan.

2. Relative competitiveness of incentives in the context of RTAs/RIAs.

Given the globalization of production and the segmentation of production processes, countries may tend to rely on relative competitiveness of incentives to attract FDI. These incentives include but are not limited to concessions on tariffs and duties, generous tax advantages, waivers on domestic content requirements, and being signatories to trade agreements (bilateral or regional) that provide preferential tariff treatments or market access to prospective producers.

The role of EPZs in - and their contribution to - a regional integration process is not clear-cut. Three alternative scenarios emerge, with potentially divergent final outcome. Firms may be attracted to EPZs in a regional arrangement that has preferential market access to non-

RIA/RTA members. They would then use the RIA as an export platform to these export markets (such as the US or EU). But then, preferential market access may also be granted to individual countries as well and was one of the reasons for Mauritius' success in attracting firms. So a regional arrangement may not be a key factor in the attractiveness of a zone in this case.

A second scenario is that firms intent to use the zone as a hub for production and sales within the regional arrangement. The argument is that such an enlarged market will render zones more attractive for foreign and domestic private investment. While this is a possibility, one should be cautious about the complex rules of origin regulations embedded in many regional agreements. The administrative capacity necessary to draft and implement such regulations is not a trivial, neither is the potential reaction of regional partners to such rules. It have affected the existence of several developing countries regional arrangements, including, most recently SADC. Negotiations among the SADC members came to an abrupt halt over the disagreement on rules of origin regulations in June 1999.

Finally, zone firms may suffer because the country they are active in is excluded from an RIA/RTA. An ILO document reports that the preferential duty granted to Mexico since the entry into force of NAFTA, together with the 1994 peso devaluation has placed the Caribbean states at a disadvantage relative to Mexico. According to the Caribbean Textile and Apparel Institute, since the introduction of NAFTA, over 150 companies and 123,000 jobs have been lost in the Caribbean apparel industry⁵⁶. The impact of NAFTA is not limited to the Caribbean region however. The ILO report suggests that the Asian apparel exports has also been

⁵⁶ ILO, Labour Law and labour Relations Branch (LEG/REL). 1999. Export Processing Zones. <http://www.ilo.org/public/english/80relpro/legrel/tc/epz/index.htm#global>.

affected, with some international firms re-directing their investment to Mexico because to save in time, transport costs and duties and despite the country's much higher wage rates.

3. Firm level factors in determining their success in an RIA/RTAs environment.

Being inside an RIA/RTA doesn't necessarily mean that all zone firms in all industries will benefit. Several factors will affect the firms' successful transition from pre to post –RIA environment. The firm productivity level and product mix, its ability to adapt to changing market conditions and compete in a newly enlarged and more competitive internal market will be important determinants in its success. So is its ability to adapt to RIA/RTA regulations and incentives (content requirements, etc...) . The firms' original market orientation – whether it was mainly an exporter or had a domestic market inlet – and whether they intend on keeping their orientation or will try to redirect their products will also impact their success.

Galhardi (1997) studies these factors and other issues related to the Mexican Maquiladoras. She argues that in the case at hand, labor intensive, low tech maquiladoras (traditional) will lose out because they are not well positioned to enter the domestic market and Nafta's effect on the wages will drive them to cheaper labor locations. On the other hand, the newer maquilas, those not centered on a corporate strategy based on cheap labor, and who have already established a presence in the domestic markets will gain. Basically, the survival of the maquiladoras will be contingent on:

- whether they already sell domestically or are gearing to do so.
- whether they are not just low labor cost, assembly firms
- whether they invest in their workers in the form of training and upgrading of skills

- whether they are newer (higher tech) maquilas and therefore benefit from more updated technologies or are more amenable to upgrading.

B. The Uruguay Round, Export subsidies and EPZs.

This section first outline the Uruguay round Agreement on Subsidies and Countervailing Measures. A brief discussion on its potential relevance and impact on EPZs and countries in which they operate follows.

1. The Uruguay Round Agreement on Subsidies and Countervailing Measures⁵⁷.

This WTO agreement was reached in the mid 1990s as part of the larger multilateral trade negotiations⁵⁸. It provides specific definitions, restrictions, time-lines and terms of action and retaliation on the use of export subsidies. These terms could affect incentives granted to EPZ firms in developing countries.

The agreement considers an export subsidy "the full or partial exemption, remission, or deferral specifically related to exports, of direct taxes or social welfare charges paid or payable by industrial or commercial enterprises" (ibid.) Here direct taxes are defined as "taxes on

⁵⁷ Information from WTO, Agreement on Subsidies and Countervailing Measures, Full text and summary, from WTO.com internet site.

⁵⁸ The Uruguay round agreement went into effect in January 1995.

wages, profits, interests, rents, royalties, and all other forms of income, and taxes on ownership of real property." Annex 1 of the agreement provides an illustrative list of export subsidies⁵⁹.

The agreement on subsidies and countervailing measures establishes that only a specific subsidy - one targeted to one industry or a group of enterprises or industries within the jurisdiction of the authority applying the subsidy⁶⁰ - would be subject to disciplines or actions. It further refines this definition by specifying three categories of subsidies: prohibited, actionable and non-actionable. Only the first two are subject to discipline. Prohibited subsidies are "those contingent, in law or fact, whether solely or as one of several conditions, upon export performance; and those contingent, whether solely or as one of other conditions, upon the use of domestic over imported goods" (WTO)⁶¹.

The agreement also defines actionable subsidies: "no member should cause, through the use of subsidies, adverse effect to the interests of other signatories, injury to the domestic industry of other signatory, nullification or impairment of benefits accruing to other members directly or indirectly to the other signatories of the GATT, and serious prejudice to the interests of another member⁶²". Affected members can take action against this type of injury⁶³.

⁵⁹ These include but are not limited to: transport or freight charge subsidies on export shipment provided or mandated by the government; the provision by governments of export credit guarantees or insurance programs at premiums that are inadequate to cover the long-term operating costs and losses of the programs⁵⁹.

⁶⁰ Geographical as well as judicial or administrative delineation is made in the article 2 of the agreement.

⁶¹ Complaining members are to follow procedures or actions mirroring - with some slight divergences - those described in footnote 7

⁶² Serious prejudice is deemed to occur in the case of some subsidies including the total ad valorem subsidization of a product exceeding 5 per cent and subsidies to cover operating losses sustained by an industry. If case is proven, the injury causing member has to withdraw the subsidy or remove the effect caused by subsidy.

The agreement provides special and differential treatment for developing country members. Least developed countries and developing countries with less than \$1000 per capita GNP are exempted from disciplines on prohibited export subsidies. They have exemption from other prohibited subsidies until 2003⁶⁴. The export subsidy prohibitions will not apply for the remaining developing countries before 2003⁶⁵. These countries have a time-bound (5 years) exemption for the other prohibited subsidies. Countries in transition are to phase out prohibited subsidies within a period of seven years from the entry into force of the agreement.

2. Potential significance for EPZs and countries in which they operate.

Several of the typically preferential incentives provided to export processing zones can be construed as export subsidies. For instance, the exemption or partial remission of direct taxes such as profit taxes. It is important to note that the WTO text is not addressing duty-free imports and exports. Rather, the agreement targets the set of fiscal incentives such as tax breaks and utility subsidies. If these measures were applied nation wide, they would not be considered discriminatory and therefore would not be subject to WTO regulations. However, these fiscal incentives are often provided to EPZ firms on preferential basis, are prohibited

⁶³ In the case of actionable subsidies, the complaining member may request a consultation with the member it believes is causing injury. If no solution is found within 60 days, then the complaining party may request a panel judgement. This judgement can then be appealed by either party. If adopted judgement is against the defending member, it has to take action to remove the subsidy (or compensate for the injury), otherwise the complaining member is allowed to impose appropriate counter-measures.

⁶⁴ These other subsidies are those addressing domestic content rules and preferential treatment of domestic vs. imported inputs. In this case, the rule does not apply to least developed countries for a period of 8 years.

⁶⁵ For eight years from the date of the entry into force of the agreement.

specific subsidies (as described above) and lead to cost subsidization for the EPZ firms' exported goods. Consequently, countries with active EPZs and a per capita GNP of \$1000 or more have, theoretically⁶⁶, until the year 2003 to realign their incentive schemes to match nationally prevalent policies or face potential disciplinary actions or countervailing measures from trade partners. As discussed above, the least developed countries and countries with less than \$1000 per capita GNP are exempt from this ruling on prohibited subsidies.

The developing countries are not exempt from the actionable subsidies rules, except for some *de minimis* cases⁶⁷. This may be a potential window for importing countries to file for investigations of products originating from least developed nations or those with less than \$1000 per capita.

Given the discussion above, the presence of EPZ type fiscal incentives in some developing countries may become ground for countervailing measures in the short 4-5 years horizon. This scenario may be avoided if the upcoming "Millennium Round" extends the export subsidy exemptions of developing and least developed countries. However, this extension may not be as inclusive, automatic or certain. In this light, establishing zones with the present preferential incentive systems may not be the best use of private and public resources. Such an economic policy would be acceptable if there is guarantee that the whole economy will benefit from the same incentives by the time WTO restrictions/regulations on export subsidies are activated for member countries.

⁶⁶ For all developing countries there is room in the agreement for one year extension of the deadline, with yearly consultation with the appropriate committee with regards to further yearly extensions.

⁶⁷ Where the share of imports from "offending" country is very small and can not impact the market of the importing country. See appendix of the agreement for specific rules on the *de minimis* rule.

IV. The Administrative and Regulatory Environment

A. Open or Closed Production Area?

Academically, the closed-off zone provides a more attractive, cleaner-cut study subject. It is an enclave, a self-contained economic entity, and measuring its impact on the regional and national economy is easier.

Practically, the major attraction of a closed (or fenced off) production area is the relative ease for countries to provide the zone with utilities, infrastructure, and bureaucratic services. If EPZ firms (EPFs) were active around the country, providing utility, transportation and communication facilities would be much more costly to the government of a low-income developing country. Not to mention the administrative cost of multi-locational customs servicing and monitoring of the firms' imports and exports. Also, governments can better control the impact of the fenced off zones on the regional and national economy. In other words, they can determine the degree of osmosis allowed between the EPZs and the host nation. For instance, some of the early Chinese SEZs were designed as "laboratories" where capitalist ideas, working relationships and dynamics are evaluated before potential propagation into the rest of the economy⁶⁸. As such, they were devised and kept as enclaves.

Fenced-off zones have one major drawback: Their impact will be limited to the immediate region where they are located. Also, their locational limitation reduces the opportunities for knowledge and technological spill-overs, thus diminishing the chances of continued contribution to economic growth.

The success of Mauritian, Dominican Republican and Jamaican EPZs highlights the importance of allowing geographical diversity and EPFs. Zones and firms are active around all three island nations and both the literature and eyewitness accounts confirm the foreign catalyst impact on the domestic economies. This approach has been so rewarding that both Mauritian and Dominican Republican economies have been described as highly dynamic, and as “one big EPZ”. Many African countries have incorporated the concept of geographically diverse zones and EPFs into their national EPZ laws. For instance, Tunisia has long allowed this practice, Togo and Namibia’s law specify that EPZs can be established anywhere in the country. All three countries allow the existence of EPFs.

B. Location and Infrastructure.

Early proponents of EPZs considered them as potential hubs for non-urban, decentralized industrial development. They favored placing EPZs away from urban and populated centers to encourage job creation and economic development in rural areas and to reduce the rural-urban migration.

It soon became clear that EPZs would not flourish in such an environment unless they were fitted with easy access to sea ports or airports, energy and water sources, good roads, above average (by country standards) communication facilities and available and adequately skilled workers. The Bataan Zone in the Philippines, located in a mountainous area some 160 km from Manila, is a prime example of a poor locational choice. Despite the government

⁶⁸ This has long since changed. See Appendices 6. 2 and 6.3 in China, Foreign Trade Reform (1994) published by the World Bank for a taxonomy and analysis of the variety of zones now existing in

spending nearly \$200 million in 1973 on building the zone (Warr, 1985), it failed to reach its goals due to its isolation from the country's industrial center and poor infrastructure. The same occurred to the Puerto Limon zone on Costa Rica's Atlantic/Caribbean coast (Ryan, et. al., 1993). The Zone Franche d'Inga in Zaire is a third example of this miscalculation. It was located in a remote area of the country, with poor infrastructure to service it and few workers with adequate skills to satisfy its labor demands.

The new philosophy highlights the importance of locating EPZs near or in industrial/urban areas. This satisfies the labor needs of the zone firms and allows for more spill-over effects. Such a locational choice also ensures more accessible and uninterrupted utilities, better infrastructure and services, and proximity to airports and sea ports.

C. Government involvement and institutional needs

Country government can opt a hands-on or hands-off attitude. At one extreme, the hands-on approach would translate into total control of the inception, set-up and management of EPZs. Taiwanese, South Korean are publicly owned and run. A majority of Malaysian zones are also public. So are 25 percent of the Mexican maquiladoras (approximately 90 zones). Proponents of public zones emphasize the leadership role the government provides in terms of the social and economic policy goals of an EPZ: job creation, attracting foreign direct investment, technology transfer, promoting industrial growth and diversification.

The opponents of public-run zones emphasize the inefficiency and lack of interest of officers, the red tape, indecision and corruption hindering their success. They point to the

China.

necessity for competitiveness and efficiency in a global economy, which can only come from for-profit economic entities. These latter are more flexible and innovative, and thus better equipped to adapt to changing market conditions, new technologies, etc.... They claim a private zone is also less prone to corruption and political changes. While this latter claim is yet to be proven, there is value in the argument that in a system based on private zones, the government would not be in direct competition with the private sector, but rather, would complement and promote it (Bermudez, 1993).

More recently, in light of the general privatization trend around the globe privately run zones have become more popular. This move has been encouraged and supported by organizations such as the World Bank (Philippines' Subic Bay Project, Kenya EPZ project and The Industrial Free Zone Development Project in the Dominican Republic⁶⁹ among others) and USAID (Togo zone). Governments have been encouraged to take on a hands-off approach. A number of highly successful private zones are testimony to the fact that hand-offs governmental approach works. La Romana zone in the Dominican Republic is one of the many such private zones.

The governments' role can be outlined as follows. They provide the necessary legal framework and, potentially, the initial bureaucratic effort such as launching a feasibility study, encouraging domestic private sector involvement and marketing the zone abroad .

In drawing up the legal and administrative framework for a zone, the government should be fully appraised of the nature of incentives offered and the type of industries they might attract

⁶⁹ See World Bank Report No. 16604 for a completion report on this project in the Dominican Republic.

(light or heavy industry, long or short-term investments, etc...) to ensure that they match the government's general policy framework and expectations. Also, government officials need to ensure that these incentives conformed with the WTO rules on export promotion instruments.

In a majority of cases the governments invest in the creation or upgrading of the infrastructure necessary for the zone. These include improvement of roads, ports, and airports near the designated zone location. Generally, governments have to secure a steady supply of electricity and water (building of new power plant/dam), and expanding the country's international communication capacity. In many locations these services are provided at subsidized rates⁷⁰ as an additional economic incentive to attract firms. The on-site investment may involve provision of factory shells. In some cases, such as in Namibia, the government has also taken on the partial cost of labor training. In others, rent subsidies have been included in the incentive package.

Once the initial legal, bureaucratic and physical framework has taken shape, the government provides (and shoulders the cost of) the ongoing services such as customs, regulatory and supervisory duties, leaving the running of the business to a private corporation or managerial group.

The literature on EPZs is insistent that a streamlined, prompt and efficient bureaucracy and customs control in all stages of the creation and running of an EPZ is crucial to its success. It greatly influences the attractiveness of the zone to foreign and domestic investors and the eventual performance and success of the firms established in it.

⁷⁰ The rate subsidies reduce utility costs for firms.

All said, the discussion above points to the fact that, regardless of whether the zones are private or public, governance is key to the success of EPZs. The provision of efficient bureaucratic and economic services, a clear and transparent legal and regulatory structure, an unfettered and stable policy framework, and non-preferential treatment of economic actors allow an arena prone to success.

D. Geographical position of the country and access to regional and international markets.

The geographical attributes of the country (e.g. land locked), the distance and access to firms' targeted markets, and the infrastructure (transportation and communication sophistication and costs) have a material influence on the attractiveness of a zone. For instance, if a country is a regional economic hub or a signatory to a regional integration (RIA), the enlarged size of the potential market may be an added incentive for firms targeting this market to invest in the zone.

Country membership in preferential trade arrangements such as the Lome or Caribbean Basin Initiative (CBI) provides added attraction to their zones. These arrangements, as well as bilateral agreements such as the one recently signed between the EC and Tunisia, allow an easier access to the developed countries' markets. In doing so, the zones attract firms from countries facing quota restrictions and trade barriers in the same markets. They relocate their production facilities to the zones and export to the EC or U.S., thus circumventing their previous

quota restrictions⁷¹. The sudden boom and consequent success of EPZs in the Caribbean and Latin America is partly attributed to the enactment of the CBI.

E. Summary of practical lessons for a successful zone

1. Perform a careful analysis of incentives offered, their costs to the country, and the type of industries and investment packages (e.g. short or long term) they attract.
2. Incentives need to concur with the WTO rules and time-lines on export promotion instruments.
3. Permit locationally diverse zones and export processing firms.
4. Ensure adequate infrastructure (roads, ports, electricity, water, sewage disposal or treatment).
5. Provide efficient, streamlined and prompt government for the establishment and running of an EPZ (approval of firm applications; customs and other supervisory institutions).
- 6a. Encourage establishment of privately owned and run zones.
- 6b. If interested in establishing and running public zones, ensure minimal bureaucratic red tape by providing the zones with a large degree of autonomy from the central government.
7. Geographical location of the country (e.g. land locked) together with distance and access to firms' targeted markets and communications and transportation sophistication and cost have a material influence on the attractiveness of the zone.

⁷¹ provided that the EPZ countries are not subject to quota restrictions

8. Preferential trade arrangements (regional trade hub or RIA, bilateral or multilateral trade agreements such as CBI, Lome, ...) influence a country's attractiveness because of the potential enlarged size of the market and lower barriers to entry.

V. The Actual Experience : Two African Examples

Many African countries have established or are considering forming export processing zones^{72,73}. Here we briefly review two opposite African experiences: Mauritius and Senegal. This comparison highlights the material importance of the institutional and policy environment as well as the actual incentive structure facing potential investors⁷⁴.

A. Mauritius

The Mauritian EPZ law was passed in 1971. It was in response to the failure of import substitution policies and the concern about a rapidly growing population and mono-commodity export (sugar). The law provided a set of incentives to attract foreign direct investment. These included: exemptions from excise and duties on productive machinery and parts, raw materials and components; free repatriation of capital, profits and dividends from EPZ firms. Companies also received preferential interest rates. Initially, they were not subject to corporate tax for 10 years and income tax on dividends for 5 years. The law was later amended. Now they must pay 15 percent corporate tax over the lifetime of the company but there is a compensating increase of income tax exemptions on dividends from 5 to 10 years. It also provides firms with favorable labor laws for dismissal and overtime work. All production must be exported and

⁷² Among them: Ghana, Mozambique, Madagascar, Sao Tome/Principe, Uganda, Tanzania, Benin, Cape Verde, Sierra Leone (before the recent military coup), Liberia (historical, before the civil war), Botswana and Mauritania. All of these countries have some type of EPZ initiative at some stage of implementation.

⁷³ Mr. James Emory of FIAS (Financial Investment Advisory Service) at the IFC, Washington, D.C. greatly contributed to this section.

⁷⁴ Appendix B provides basic information on EPZs in five Sub-Saharan African countries: Togo, Namibia, Kenya, Zimbabwe and Cameroon.

export processing firms (EPFs) are allowed. Table 2 provides a brief outline of the incentives provided to investors.

The Mauritius EPZ experience is considered a success because the island has managed to achieve the primary goals of employment creation, export diversification, gross and net export increase, attracting FDI and being on the receiving end of some demonstration effect and human capital build-up.

Although in the early years (1970-80) foreign direct investment (FDI) did not play a major role (Alter, 1991), it has become a major influence in the development of EPZs. In 1988, FDI accounted for 25 percent of total EPZ investment. By one estimate foreign firms now control 45 percent of the EPZ sector, largely concentrating in garment production⁷⁵.

Taking advantage of the abundant, educated labor, foreign firms established production facilities on the island. By 1976, 84 firms had started production. In 1983, 129 firms employed 23,424 workers. This number peaked in 1991 at 586 firms employing 90,861 workers. By 1995 the number of firms had dropped back to 481 and employment stood at 80,466 workers or 17.10 percent of the national labor force. Some 50 percent of these firms are engaged garment making, employing 82 percent of the zone workers. The Mauritian labor market has been tight since the late 1980s and in 1994 unemployment rate was estimated to be at 1.6 percent⁷⁶, causing wage increases. These wage increases, some claim, are putting the Mauritian EPZs at a competitive disadvantage and may encourage foreign firms to relocate to countries

⁷⁵ From World Bank report No. 12518-MAU.

⁷⁶ Data on Mauritius is obtained from Mauritius Economic Review, 1992-95 and various issues of Economic Indicators - an occasional paper published by the Ministry of Economic Planning and Development of Mauritius.

with lower labor cost. For instance, in 1991 the wage levels of garment workers were estimated at \$1.28 per hour while that of China stood at \$0.25⁷⁷. Although there are instances of this occurring both in Mauritius and in other countries, firms by-and-large do not decide setting up in or leaving a zone just based on wage competitiveness. Rather, firms also consider factors such as political stability, the incentive “package” they are promised, the infrastructure of the zone and labor productivity(education).

The zone firms have also been successful in increasing the gross and net exports of the country. The share of the EPZ in gross exports has grown steadily. In 1986, EPZ gross exports constituted 54 percent of total exports. In 1992 it reached 63 percent and in 1995, 67 percent. The ratio of net exports to exports has also increased from around 22 percent in 1985 to hover around 40 percent in 1995. This last statistic points to the fact that a certain degree of backward linkage has occurred, increasing the domestic content of EPZ exports. However, experts warn about reading too much into this number for they consider the Mauritian domestic industrial sector shallow. Nonetheless, eyewitness accounts suggest that this backward linkage has occurred in tandem with demonstration effects and catalyst influence (Rhee, 1990; Curimjee, 1990). In fact, Curimjee (1990) argues that there is extreme inter-linkage between the zone firms and the domestic economy.

Alder (1991) suggests that the EPZ’s strong performance was not independent of the rest of its host economy. He argues that during 1978-82 when the economy was experiencing

⁷⁷ From Findings - Africa Region - Number 37, April 1995.

external and internal difficulties, EPZ growth slowed. It recovered along with the rest of the economy in the mid 1980s.

The Mauritian success is due to the coming together of all the necessary elements and policies required (and described above) for the flourishing of EPZs. The incentive “package” was attractive. There was an abundant and educated pool of labor available. The government was stable, provided stream-lined services and interfered minimally.

The country has benefited from a preferential trade arrangement with the European Union (Lome) and the Multi-Fiber Arrangement. Last but not least, the Mauritians hit upon idea of setting up EPZs “at the right time”: Mauritius was one of the first countries to implement the EPZ concept in modern time; it provided an economically attractive environment; and didn’t have many other developing country zones to compete with in order to attract foreign firms(as many newly established EPZs do now).

B. Senegal⁷⁸

The Dakar EPZ established in 1974 has been considered by many experts as an example of an unsuccessful zone.

Dakar zone became operational in 1976 but did not achieve its goals in creating employment, foreign exchange or attracting FDI. Employment reached a high of 1200 in 1986 to drop back down to 600 in 1990. some 10 firms exported a meager 4 millions of FCFA

⁷⁸ Information on Senegal EPZ was gathered from three sources: Background paper on the 1992 World Bank paper : [Export Processing Zones](#); [A Note on Export Processing Zones](#) by the Services Group, Inc., 1991; and “Mirage ou Miracle?” by C. Coste and M.L.Ewane in *Jeune Afrique Economie*, July 1990.

(approx. US \$14.7 M) out of the zone despite a relatively stable political environment and advantageous financial promotions. As shown in table 2, the Senegalese taxes and customs incentives match those of its neighbors and competitors. They included: exemption from taxes on corporate income and dividends; exemptions from customs duties and taxes on machinery, inputs and semi-finished and finished goods; and unrestricted repatriation of capital and profits.

There are several reasons for the zone's failure. First of all, bureaucratic red tape delayed the potential investors' application process. Moreover, minimum employment (150 workers) and investment floors (approximately \$100,000) discouraged many national and foreign entrepreneurs⁷⁹. Third, government mandated labor market rigidities made hiring and firing of workers difficult. While the Senegalese hourly wages and salaries were competitive with other countries such as Tunisia and Egypt, the workers' productivity was much lower, disadvantaging the Dakar zone⁸⁰. Furthermore, the government did not provide standard rental factory space. It required investors to lease and build their own factories, thus discouraging FDI through imposition of increased business risks. Finally, Keesing (1992) claims that utilities and transportation costs are rather high in Senegal (to 25 percent of the cost of the final export goods).

⁷⁹ This rule was later abolished.

⁸⁰ This lower productivity was due to both labor market rigidities and low educational level of the workers.

VI. Policy Suggestions

A. General policy suggestions

- Establishing an EPZ is not a first best policy choice. The best policy is one of overall liberalization of the economy.

- Zones are only one of many trade instrument used for export development, and have limited applicability. Other policy tools may therefore be more appropriate for a specific country than an EPZ. Nonetheless, EPZs can play a long term dynamic role in their countries' development process if they meet specific conditions. Appropriate set-up and good management of these zones are paramount to their success (see specific policy suggestions outlined below and section IV of the paper on administrative and regulatory outlines).

- Internationally, developing countries need to consider the WTO compatibility of the incentives and subsidies that are provided exclusively to the zone firms.

- Domestically, they also need to view and use EPZs as an integrated part of a national reform and liberalization program. If instead policy makers exploit them as “safety valves” to attract FDI, provide jobs and foreign exchange earnings, avoiding or postponing economy wide policy reforms, the zones could become stumbling blocks to liberalization and long term economic growth.

- Successfully incorporating EPZs into the national economy will require periodic revisions of the EPZ laws to accommodate changing national economic conditions. On the other hand, domestic reforms should be formulated so that eventually the same incentives and benefits apply to all firms (except for tax exemptions).

- Establishing an export processing zone in an economy that has already reformed its trade and macroeconomic policies is not recommended on three grounds:

1. Low FDI flows may be due to inadequate legal or regulatory framework or economic incentives in other areas of the economy (for instance: private property or labor laws...).

2. EPZs are distortionary trade instruments and will re-introduce an element of discretion into the policy environment.

3. Even if export promotion is in order (i.e. WTO compatible and deemed a solution to the country's low FDI inflow), an EPZ may not be the best export promotion tool to achieve such a goal.

B. Policy suggestions for World Bank practices guidelines

1. General guidelines

- Based on the discussion above, and lack of Bank specific know-how on developing and managing EPZs, the Bank should be very selective and cautious in supporting EPZ projects. Should the Bank become involved, the decision and extent of the involvement should be based on a case to case basis. In these cases, the bank should seek external expertise and advice on all aspects of the project, including project design development, implementation and management.

- In non-reformed and reforming economies we suggest economy wide policy reforms and discourage formation of isolationist EPZ.

- Suggest that existing EPZs be an integrated part of the reform package, or at least ensure that they do not constitute stumbling blocks to the reform process.
- Discourage establishment of new EPZs in post-reform economies due to their distortionary impact and the fact that they provide a discretionary window for backsliding on trade policy.
- In post-reform economies intent on establishing new zones, suggest minimal differential incentives (in taxes, financial and fiscal incentives, subsidies...) compared to the ones prevalent in economy, minimizing their distortionary impact on the economy.
- If a country insists on keeping its existing EPZs as distinguishable entities or in establishing EPZs, the section below provides specific guidelines to enhance the probability success of such an undertaking.

2. Specific policy guidelines

The literature insists on the necessity of business friendly policies in facilitating the success of a zone. It is possible, however, for incentives to be ‘overly friendly’, such as excessive fiscal or financial credit or subsidization of zone firms. To strike a balance, we highlight a general framework that spells out the extent to which a policy should be “business friendly”. In defining this framework, we rely on two principles: (a) we view the existence of the EPZ and the incentives related to it as a transitory step towards the eventual liberalization of the economy where all economic entities would benefit from the same policy terms; (b) therefore, we frame the EPZ policies in terms of the following useful “rule of thumb”: if a policy is good for the economy as a whole, it is likely to be good in an EPZ (or at worst not cause

harm in the EPZ)⁸¹. We acknowledge that this rule of thumb view ignores the fact that applying these policies to EPZ but not the economy in which it operates will lead to distortions within the latter. We offer five policy guidelines:

- General economic environment: foreign exchange policy and general economic environment:

Sound and stable monetary and fiscal policies (low inflation, budget management, independent monetary policy), clear private property and investment laws provide a general environment propitious to economic growth. Both EPZ and non-EPZ firms are susceptible to the absence of such an environment.

Foreign exchange restrictions or multiple exchange rates cause distortionary incentives and mis-allocation of resources in an economy. EPZ incentives provide for unrestricted flow of firms' earnings at market exchange rates.

- Taxation and tariff structure.

Taxation: enacting moderate and simplified corporate taxation schedule (Chile's is mid-teens) encourages economic activities. So do simplified tax bands with progressive marginal taxation. Furthermore, policy makers should consider provisions for accelerated depreciation, rationalize and minimize indirect taxation and licensing practices. Improved collection rates can partially compensate for revenue losses associated with reduced tax rates. In this sense, the

⁸¹ This idea was suggested by J. Nash, The World Bank.

'overly' friendly tax breaks provided to some zones (such as permanent tax holidays, waiving all taxes...) may not be an optimal policy.

Tariffs and other trade taxes: A unilateral liberal trade policy is the first best option for small economies, and as such, the provisions granted to the EPZs with regards to imports and exports free of taxation and tariffs should be pursued as an economy wide policy.

- EPZ infrastructure, its provision and subsidized utilities.

We encourage private development and management of EPZs, including the on-site infrastructure (pavements, building shells, etc...)

The provision of infrastructure external to the zone proper can have positive spillovers for the local and national economy by facilitating transportation and communications (telephones, roads, ports and airports). In this regard, if private development is not available for the infrastructure external to the zone, the public role has an economic rationale.

Subsidizing utilities encourages over-consumption and discourages economically rational use of resources and factors of production. Such a subsidy to the zones detracts from their benefits.

- Labor rights, wages and workers safety.

Labor market constraints (e.g. cumbersome firing procedures, wage categorizations...) increase labor costs and slow market adjustment. In this sense, more business friendly labor laws as applied to EPZs are beneficial. However, they should not translate into disregard or abuse of workers' safety and labor rights (for instance unionization, mediation of labor disputes,

scheduling and payment of overtime..), as has been the case in some zones. In fact, strengthening several legal and regulatory areas related to EPZ activities will allay health and labor concerns, reduce labor turn-over and absenteeism and improve workers' productivity.

- . Environmental issues

Most developing countries either do not have very strong environmental laws or the administrative capacity and knowledge to implement them. The consequence is that the negative externalities are not internalized by responsible parties (via taxation or shouldering the clean-up cost). The EPZs are governed by the same lax laws and implementation as domestic producers. However, some claim that their large production volume compared to the host economy production levels is a concern: the EPZs may have a more serious environmental impact than the national producers. In this area, a first necessary step is to form a better qualitative and quantitative understanding of industrial refuse and its impact on air, soil, water and human health. Follow-up regulation, provision of incentives and monitoring should be tailored accordingly.

Appendix A

A comparison of the neo-classical, cost-benefit and endogenous growth model analyses of EPZs and their impact

The literature on EPZs has debated the merits and failings of this trade policy tool for some 30 years, alternatively using the neo-classical, cost-benefit and new growth theory methodologies. This appendix briefly reviews each approach, points to their shortcomings and compares their overall results.

The neo-classical school is based on a Heckscher-Ohlin two goods - two factors - two countries framework. The results Hamada (1974) finds depend critically on the factor intensity of the two sectors. Assuming the small country has a comparative advantage in labor intensive industries and protects its capital intensive sector, the EPZs reduce the country's welfare.

This literature bases its assessment on the Rybczynski effect. The FDI flowing into the EPZ means that capital is imported while labor is withdrawn from the domestic sector to work on it. Production of the capital intensive good will increase, while that of the labor intensive domestic good will decrease. This will distort the production away from its factor-based comparative efficiency⁸².

Devereux and Chen (1995) expand on Hamada's analysis by adding volume of trade and factor terms of trade effects. They conclude that the EPZ are likely to be welfare improving under a much wider variety of circumstances than previously realized. Also, they argue an EPZ will increase (decrease) the likelihood of liberalization in a tariff (quota) regime.

The neo-classical analysis is criticized on several grounds however. To start with, it is based on the assumption of full employment while most developing countries have to deal with sometimes severe unemployment and underemployment. Secondly, the approach does not take into account the spill-overs from FDI in the economy (Johansson, 1994:394). Third, the Heckscher-Ohlin based analysis is based on final goods while most of the EPZ issues are related to intermediate inputs. Finally, Warr (1989) also emphasizes the footloose nature of EPZ firms and argues that :

“This literature has drawn upon the classical Heckscher-Ohlin model of production. Insofar as the model treats capital as being internationally mobile, it fails to capture the international mobility of *capital goods* - which is central to the functioning of EPZs. The main conclusion of most of this literature - that EPZs necessarily reduce the welfare of the countries - is thus largely irrelevant for EPZs as they actually operate”(1989:66).

The cost-benefit approach is a second commonly used tool to evaluate the performance of export processing zones (Warr, 1987, 1989). The methodology calls for calculations of all costs and benefits associated with the zones. It involves discounting and calculation of net present values of streams of revenues and costs for the government, the workers and the

⁸² See Hamada (1974), Devereux and Chien (1995), Beladi and Marjit (1992).

society at large. Though a painstaking process, this methodology provides an opportunity to think rigorously about costs and benefits.

Early papers using this methodology supported EPZs. Warr's early work is an example of this literature. Later papers (in the late 1980s and early 1990s) describe them as good but limited tools to use in export promotion policies. Again, Warr's later work is an example of this attenuated view.

The main draw-back to this approach is the lack of adequate data for the cost-benefit calculations. Assumptions regarding rates of returns to capital, social discount rate and social benefits may also be easily questioned. More generally, while costs may be more readily observable, the extend of the benefits may not be. The assumptions made in order to estimate these latter will affect the outcome of the cost-benefit analysis.

Finally, the second criticism (mentioned above) addressed against the neo-classical methodology has given rise to a new growth approach to EPZ analysis. This latter highlights the impact of spill-overs from FDI and zone activities on the host economy. These spill-overs include labor and management on-the-job training and learning by doing, copying, demonstration effects and catalyst factor, and impact the rate and level of human capital formation in host countries. According to Johansson (1994), the new growth approach provides three key additions to the neo-classical analysis. It points out that:

1. Domestic firms lack the "capacity to package" technical, marketing and managerial know-how with the internal and external resources available to them. This packaging is provided by FDI and in the zones.

2. Domestic firms seldom have access to international distribution channels on their own. On the other hand, international or joint venture companies do and can "show the ropes" to fledgling domestic exporters.

3. Entry into international markets would be difficult without the inroads created by connection with an established multinational corporation with wide international business dealings.

Once these elements are added to the traditional analytical approach, Johansson (1994) argues, the EPZ may be beneficial to a country because of their spill-overs and their catalytic impact.

This approach has not made much empirical inroads yet. Rhee, et. al. (1990, 1991) have written about this foreign-domestic dynamic relationship and its positive impact on human capital formation.

Appendix B

Brief Notes on five African EPZ programs.

Having seen the success of Mauritius, Dominican Republic and some other zones around the world, many Sub-Saharan African countries have established or are considering forming export processing zones^{83,84}. However, data is not available for many of these rather recent developments. Here we provide a limited amount of information on five Sub-Saharan countries: Togo, Namibia, Kenya, Cameroon and Zimbabwe.

A. Togo

The Togolese approach seems to encompass all the necessary elements to make their EPZs/EPFs into a successful ones. It was encouraged and supported by the American Overseas Private Investment Corporation and USAID.

The Togolese investment code was revised in 1989 to provide part of an attractive EPZ framework. As can be seen in Table 2, it allows a 10 year tax holiday after which the tax rate will be 15 percent; no dividend taxes for 10 years; a tax rate of two percent (instead of seven percent) on salaries; free movement of foreign exchange and profits; preferential tariffs also apply on port charges, electricity and telecommunication services; and no tariffs on exports or imports. Investment regulations accommodate foreign, domestic and joint ventures. The EPZ law is such that in principle, it covers all of Togo, for any firm that produces mainly for export, employs at least 80 percent of Togolese nationals on its work-force, uses mainly locally-available raw materials, is labor-intensive or produces semi-processed inputs from local enterprises. The zone firms are allowed sales in the domestic market. In 1995 their domestic sales were 6.5 percent of their total exports. On the labor front, firms are given ample freedom with regards to hiring, firing and grievances⁸⁵. In addition, it was hoped that FDI would be attracted to cheap labor (in 1990 labor costs averaged US 40cents), the transportation infrastructure (deep sea port, reasonable airport and roads) and a good banking system.

The major goal for establishing the zones was employment creation to ease the serious unemployment problem which followed structural adjustment programs launched in 1983. By late 1990 the Lome EPZ, the first in Togo, was ready to take off. However, the process came to a sudden halt due to the political unrest related to the democratization process. In 1994, the political situation having settled, the activities in the Lome zone (located in the port area) started

⁸³ Among them: Ghana, Mozambique, Madagascar, Sao Tome/Principe, Uganda, Tanzania, Benin, Cape Verde, Sierra Leone (before the recent military coup), Liberia (historical, before the civil war), Botswana and Mauritania. All of these countries have some type of EPZ initiative at some stage of implementation.

⁸⁴ James Emery of FIAS (Financial Investment Advisory Service) at the IFC, Washington, D.C. greatly contributed to this section.

⁸⁵ Government intervened mid -1996 to strengthen labor protection.

up again. In 1995, the zone boasted 19 firms. In 1996, this number reached 29. The goal for the year 2000 is 80 firms. By 1995 (1996), zone's 19 (29) enterprises employed 3000 (4000) Togolese (D. Seshie, 1996).

From all appearances, the Lome EPZ seems to finally be getting on track. D. Seshie (1996) notes that two issues may waylay the zone's ultimate success. She notes that firms have a tendency to ignore the indigenous pool when hiring "cadres" in favor of non-national cadres. This may hamper future transfer of technology and demonstration spillovers. Also, the Togolese EPZs will have to face steep competition from the Cote d'Ivoire, Ghana and Nigeria industries which dominate the market in the region⁸⁶.

B. Namibia⁸⁷

Namibia is a small country of 1.1 million inhabitants. It achieved full independence in 1990 and inherited a good infrastructure (telecommunication, water and electricity) from the Colonial period under South African rules but has a weak industrial base. Nonetheless, with some 90 percent of its imports originating from South Africa, and some 36 percent of its exports directed to that market, Namibia is still viewed as a satellite economy to that of its neighbor to the south. Import substitution attempts have failed. The country exports natural resources (diamonds and minerals) to pay for its consumption. The government sees outward orientation as the necessary strategy to ensure diversification, growth and development. Export processing zones are to help with the building of an industrial base and increasing export diversity.

Talk about establishing EPZs in Namibia dates back to February 1995 (Namib Times, 11/7/95). The law was passed in April 1996, allowing for establishment of EPZs anywhere in the country and in any economic activity, not just in manufacturing. An EPZ enterprise may choose to become either a stand-alone factory located anywhere in Namibia or an enterprise within an industrial estate managed by a management Company. EPZ firms can be either private or public companies and can be foreign owned. Also, "EPZ activities will be serviced by privately owned and run companies. Investors have the choice to deal through the umbrella organization (the ODC), or the EPZ management companies, thus avoiding cumbersome government procedures (Namib times, 1995:18)."

Namibian labor law has been altered to make strikes and lock-outs illegal in EPZs, but workers can join trade unions. The exchange rate regulations of the EPZ act do not seem to be very clear about whether zone firms are free of exchange rate controls or are to sell their foreign exchange to the central bank and be under currency control. The act simply seems to guarantee foreign exchange conversion (with offshore banking provisions in the works).

Zone firms will be exempt from corporate taxes (which are normally 35 percent), customs duties, sales taxes, transfer and stamp duties forever. Individual expatriates sent to

⁸⁶ Of course, this competition does not only affect EPZ firms but the rest of the Togolese industry as well.

⁸⁷ Information on the Namibian zones obtained from the Namib Times, November 1995; Offshore Outlook, volume 3, issue 29, March 1995; and the Ministry of trade and industry of Namibia.

manage and work in EPZs have to pay the Namibian income tax (maximum marginal rate of personal income tax is 35%). There are no capital gains taxes.

The Walvis bay area, located on the South Atlantic Ocean, and the Arandis, located close to the country's deep sea port, seem to be the two major EPZ initiatives in Namibia. Applications have also been placed to establish a zone in the capital and the Okahandja areas.

As of November 1996, 6 out of 11 firms in the Walvis Bay Zone have started production. They employ approximately 2000 workers. Their production ranges from textiles and charcoal to gem stones and motor vehicle components. The World Bank undertook a supporting project, dealing with improvement of infrastructure, water and sewage treatment and power

C. Kenya⁸⁸

The Kenyan EPZ law was passed in November 1990 and is still in force. It provides for 10 year tax holiday, 25 percent tax for the next 10 years, no withholding taxes for 10 years, import duty exemptions on plant, machinery, equipment and raw materials, no foreign exchange controls and VAT exemption. However, it was conceived in the context of an over-valued exchange rate regime.

At present, there are three main EPZs⁸⁹. One was funded by the World Bank (1990) at Athi River near Nairobi and is public. The two others are privately owned and managed. The Athi River zone was part of a policy reform package. It was designed with three goals in mind: increase of foreign exchange earnings, job creation and providing demonstration effect to producers by illustrating the profitability of exports.

As of 1995 most physical structure and infrastructure was essentially finished, and considered to be of high quality. There were concerns about the financial viability of the zone. The zone appeared to be unsuccessful compared with potential private sector alternatives. The occupancy rate was still low. And it seems that the firms inside have not created the backward domestic linkages the government had hoped would facilitate technological transfer. It has been suggested that privatization of the zone and decisions about the management group and a fee structure may help render it viable.

In 1993 the government undertook several major reforms. It eliminated exchange controls and allowed for market determined rates. It eliminated import controls and licensing and liberalized capital accounts. It is in the process of rationalizing the import tariff structure. The government is targeting a uniform tariff. Quotas have been removed except for health and security. An export assistance scheme has been put into place providing 50 percent subsidy for

⁸⁸ Information partially obtained from conversations with Byam and Blake at the World Bank; World Bank reports no. 13886 and 14698, and Mark Ocheng's article "export-processing zones draw lukewarm investor response" in the April 1991 of African Business.

⁸⁹ S. M. Ita, Chief executive of the export processing zone authority in Nairobi Kenya in a presentation at the 16th International Conference of the WEPZA held in China in 1997, provides different numbers. He claims that there are 12 privately owned zones of various sizes around the Nairobi airport and Mombasa seaport and two very large public EPZs.

technical analysis and business advisory services. Macroeconomic management is reportedly sound now, with no backtracking on trade reform.

In light of all the major policy liberalization, interest in EPZ project waned, though zones are still reported to attract firms for tax purposes, their industrial set up and administrative ease.

D. Cameroon⁹⁰

The EPZ law was passed in 1990. It set three goals for the prospective zones in the country: employment creation, export development and new investment promotion.

It allows for stream lining and facilitation of the administrative and customs procedures, and it is to be managed by a private group. It also permits Export processing firms (EPFs) status to firms which would supply themselves with national raw materials, transform them on site, and export at least 80 percent of their production.

The law allows freedom from exchange rate and price controls. Sales of a percent of the production in the domestic market is permitted after appropriate import taxes are applied. All indirect and direct taxation and tariffs are waved for the first 10 years of a firm's activities. From then on, a 15 percent tax is levied on profits. Profits will be netted of 25 percent of the salaries paid to nationals and of 25 percent of investment expenses before tax is applied. Furthermore, there are no limits in claiming operational losses and no obligation to reinvest in the maintenance and improvement of factories. These later provisions are rather favourable to firms compared to the typical EPZ rules.

The zone enterprises are exempt from import and export tariffs, but have to pay for services used in the process of importing or exporting. Enterprises are allowed to set their wage range and do not have to pay dues to the social security (retirement system) fund if they provide at least parallel terms for their employees. They have to ensure that 80 percent of their employees are nationals.

Electricity and water expenses are subsidized. Obtaining telephone lines is facilitated and provided at a promotional rate for the first five years of the firm's operations.

No zone is presently active in Cameroon. There are two reasons for this outcome. First, the processing of the applications have been slow due to under-staffing at government offices in charge, thus discouraging investors. Second, the passage in 1992 of the US law restricting USAID assistance to EPZs hurt the prospects for the Cameroon zones⁹¹. USAID was involved with the financing, logistical and developmental support of the EPZ project in Cameroon and the lost support after the enactment of the law could not be replaced.

While there are no active zones there were 17 export processing firms functioning as of March 1995. The projected export values for 16 of these firms are 461.1 Billion Francs

⁹⁰ Information on Cameroon obtained from: Evaluation Du Fonctionnement du Regime de la Zone Franche au Cameroon, 1995, prepared by Janel And Company LTD. for the Minister of Economy and Finance of the Cameroon.

⁹¹ The US law was enacted in response to American labor groups campaign who accused government institutions of using tax-payer money to "export American jobs abroad" and helping foreign competition push U.S. workers out of their jobs.

(1.152B US)⁹². Their local supply purchases hover around 270 Billion Francs (0.675 B US \$). They employ 2567 workers. The indirect employment resulting from their activities stands at 1027. The estimated value of these jobs is some 18 Billion Francs (45 Million US \$). While it is not possible to assess the total employment impact on the host economy, the authors argue that there is a definite domestic impact from personnel training and knowledge spill-over. However, the gross fiscal losses to the government from these firms activities are estimated at 37.3 Billion Francs (74.7 Million US \$). There have also been administrative difficulties in providing and securing delivery of “bonded” imports and exports from and to EPF sites due to customs logistics.

E. Zimbabwe⁹³

A law for creating an supervisory board was passed in 1993-94, but no further action has been taken to actually implement a zone. Two primary goals were stated with regards to the EPZ: employment creation and use of the zone to jump-start an export led growth push.

The law provides the following incentives to attract investors: 100 percent remittance of net profits after tax for investors; a 5-year tax holiday, 15 percent corporate tax and exemption from import duties. Investment in the zone will be open to foreign and domestic investors. For now, it is stipulated that a firm would qualify if it is exporting 80 percent of its production. Zimbabwean business community want to reduce it to 50 percent for the first year and allow the firms to build their exports up to 80 percent by the third year. The zones will be privately owned and the law allows for EPFs.

The law stipulates suspending the national labor laws inside the EPZs to encourage investment and job creation. But in 1995 efforts were being made to amend the zone law to ensure compliance with domestic regulations arguing that waving workers protection laws was short sighted and could lead to unrest were zones to become active in the country.

⁹² The average rate of exchange was 400.14 Cameroon Francs to 1 US dollar for 1995.

⁹³ Information from : “Zimbabwe: Free Trade Zone” in *Southern African Economist*, Dec 94/Jan 95; Staff Appraisal Report: Zimbabwe, Report No. 15062-Zim, April 1996, the World Bank.

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Table 1

Incentives and Provisions offered in EPZs
in the Caribbean and Central America

Country	Taxes	Tariffs	Other Incentives
Costa Rica	6 years income tax exemption, then 50% for 4 years	no import/export quotas, duty exemptions, but some 0.6% service charge on exports and imports	Free Repatriation of profits
Dominican Republic	15 years exemptions on all taxes	duty free import of capital goods, raw materials and equipment (but imports must be listed and approved in advance)	Free Repatriation of profits
El Salvador	10 year income tax exemption on corporate and personal income	duty free import of equipment and materials for 10 years, indefinite if firm exports 100% of production	Free Repatriation of profits
Guatemala	12 years income tax exemption	no duties, levies or quotas on imports or exports	Free Repatriation of profits

Country	Taxes	Tariffs	Other Incentives
Haiti	8 years exemptions on all taxes	duty free import of capital goods, machinery and raw materials	Free Repatriation of profits
Honduras	federate, state, local income sales and corporate tax exemptions in perpetuity	duty free import/export of all goods	Free Repatriation of profits
Jamaica	income/profit tax exemption in perpetuity, local sales and property tax exemption	duty free import/export of all goods, no quotas, levies on imports and exports	Free Repatriation of profits
Panama	15 year income tax exemption, local sales and property tax exemption	duty free import of capital goods, equipment and approved raw materials	Free Repatriation of profits
Puerto Rico	US federal tax exemption on corporate and personal income	duty free import of free materials and finished goods	Free Repatriation of profits

Note: This table is a partial reproduction from table 6.1 in Weersma-Haworth, 1996.

Table 2

Incentives and Provisions offered in EPZs
in Selected Sub-Saharan African Countries

Country	Year Est.	Taxes and Other Financial Accomodations	Customs Regulations	Labor Regulations
Namibia	1995	exemption from corporate taxes (normally 35%) sales taxes duties forever	Liberal customs regulations exemptions on custioms duties, transfer, stamp and imports , (for exports out of SACU) forever	liberal labor laws (national law revised to prohibit strikes and lock-outs); conditional reimbursement of up to 75% of EPZ personnel training costs.
Togo	1990	10 year tax holiday after which the rate is 15%; no dividend taxes for 10 year; tax on salaries is reduced from 7% to 2%; firms can open foreign exchange accounts or tranfer funds abroad without any hinderance; preferenital tariffs also apply on port charges, electriticity and telecommunication services; no restriction on level of foreign ownership.	no tariffs on exports or imports	firms given ample freedom with regards to hiring, firing and grievances. Government intervened mid -1996 to strenghten labor protection; in 1990 labor costs averaged US 40c.

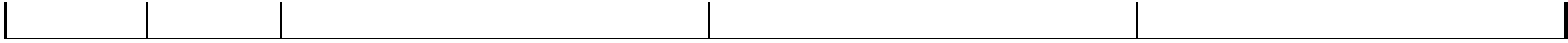


Table 2 - continued

Country	Year Est.	Taxes and Other Financial Accomodations	Customs Regulations	Labor Regulations
Kenya	1990	10 year tax holiday; 25% tax for the next 10 years; no withholding taxes for 10 years; VAT exemptions	import duty exemptions; no foreign exchange controls	not available
Senegal	1974	exemptions from taxes on corporate income and dividends; unrestricted repatriation of capital and profits	exemptions from customs duties on machinery, inputs, semi-finished and finished goods	government mandated restrictions on hiring and firing of workers.
Mauritius	1971	Free repatriation of capital, profits and dividends from EPZ firms. preferential interest rates. Initially: no corporate tax for 10 years, no payment of income tax on dividends for a periods of 5 years; Law revised: now must pay 15% corporate tax over the lifetime of the company; compensating increase of income tax exemptions on dividends from 5 to 10 years.	exemptions from excise and duties on productive machinery and parts, raw materials and components	favorable labor laws for termination of employment and overtime.

Table 2 - continued

Country	Year Est.	Taxes and Other Financial Accomodations	Customs Regulations	Labor Regulations
Cameroon	1990 (law)	exemption from all direct and indirect taxes and tariffs for first 10 years. Thereafter, 15% on modified profit base + other specific financial priviledges	tariff exemptions on imports and exports	minimum wage can be determined by the firms; exempt from paying into the national social security system if they provide parallel terms for their workers.

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Table 3

Impact of EPZs in Select Sub-Saharan African Countries

Country	Year	Employment Creation	Number of Firms	Foreign Exchange Earnings or Exports
Namibia	as of: 11/96	approx.>2000	6 out of 11 firms have started production	n.a.
Togo	1996	approx. 4000	29 firms	n.a.
Senegal	1990	600	10 firms	Approx. US \$14.7 Millions
Kenya	1996	n.a.	14 zones (including EPZs, FTA and Industrial Zones)	n.a.
Cameroun	1995	2567 direct 1027 indirect	16 EPFs	projected nominal exports: 461 B F (0.924 B US \$)

Information on Kenya from WEPZA 1996 International Directory of Export Processing Zones and Free Trade Zones, published by the Flagstaff Institute. Note that not all zones are functional or active.

Table 4

Impact of EPZs in Select Countries

Country	Year: as of:	Employment Creation	Number of Firms	Foreign Exchange Earnings or Exports
Mexico	1992	500,000	2100 firms in 353 zones	US \$4.2 Billions of export value added. 8% of Mexican income; 2nd after oil revenues as generator of foreign currency;
	1995	614,025 ^a	2033 ^a	
Jamaica	1996	16,804	3 zones operational; (56firms)	approx. gross exports: US M \$235.4; approx. net exports: US M \$28.90
Sri Lanka	1990	60,000	144 firms	US \$437 M (in 1990) = 23% of ttl gross national exports; 44% of total gross national manufactures exports
Bangladesh	95-96	37,533	96 firms (2 zones)	US \$310.50 M gross export US \$62.96 M net export
El Salvador	1991	6,500	14 firms (1 zone)	US \$85 M in exports
	1996	50,000	208 firms	
Philippines	1991	43,211	4 zones	US \$580 M (in 1990) = 7% of national gross exports; 16% of national gross manufacture exports; US \$244.80 M net exports
	1994	91860	4 zones	

				US\$1,994.1 M gross export
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Table 4 - continued

Impact of EPZs in Select Countries

Country	Year	Employment Creation	Number of Firms	Foreign Exchange Earnings or Exports
Costa Rica	1992	15,000	109 firms	US \$125M in exports
	1996	47,972	9 zone ('95)	
Honduras	1991	19,000	49 firms (9 zones)	US \$95 M in exports
	1996	61,162	15 zones	
Jordan	1996	10,000	3 zones 228 (est.) firms	approx. gross exports: US \$ 444.4 M approx net exports: US \$ 97.6 M
Indonesia (1 out of 2 zones reporting)	1996	98,000	Nusantara Bonded Zone: 168 firms	approx. gross exports: US \$ 12 M approx net exports: US \$ 6.4 M
Vietnam (2 out of 4 zones reporting)	1996	7,142	EPZ Massda and Tan Thuan EPZ: 40 firms	n.a.

Sri Lanka information from Wijewardane (1993), Amirahmadi and Wei (1995). Jamaica information from WEPZA 1996 International Directory of Export Processing Zones and Free Trade Zones, published by the Flagstaff Institute. Data on El Salvador, Honduras and Costa Rica from Dijkstra, et. al. (1996). Philippines data from ILO (1993) and Amirahmadi and Wei (1995). Mexican Information on 1995 from Bolin (1996). Information on Jordan, Indonesia and Vietnam were obtained from WEPZA 1996 International Directory of Export Processing Zones and Free Trade Zones, published by the Flagstaff Institute. The Indonesian and Vietnamese zones' information, although incomplete, is reported to show the potential overall impact of the zones on employment and foreign exchange creation. Mid 1990s data for Honduras, El Salvador, Costa Rica, Philippines for employment and number of zones from ILO(1998): "labour and social issues relating to export processing zones".

Table 5a

Industrial Concentration of Select Zones (in percent)

Country (zone)	Year	Garment	Electronics, electrical, etc...	Informatics, Data entry & processing	Others
Bangladesh	1997	67.0	18.0		15.0
Dominican Republic	1994	62.5	4.5		
El Salvador	1991	50.0	7.0		43.0
Indonesia	1988	X			
Jamaica (3 zones)	1992	61.0		24.0	
Malaysia	1979	14.0	74.5		n.a.
Mauritius ^a	1995	50.0	3.75	na	46.0
Philippines (4 zones)	1995	30.0	18.9		51.2

The industrial concentration is calculated based on reported number of firms active in above product groups. Jamaica data from WB (1994- report no. 12491 JM, staff appraisal report). Mauritius data from Mauritius Economic Review, 1992-95 by the ministry of economic planning and development. Dominican Republic data from Free Trade Zones in Export Strategies by Rhee, et.al (1990), the World Bank. Bangladesh data from ILO working paper 80, 1998. Philippine data from Remedio (1995), table 13.

“X” represents dominant presence of an industry but percent of industrial concentration is available.

Table 5b

Industrial Concentration of Select Zones based on Percentage of Workforce involved in the Making of Main Products or Provisions of Main Service(s) Exported from Selected EPZ Host Countries, 1994

Country (zone)	Year	Garment	Electronics, electrical, etc...	Informatics, Data entry & processing	Others
Dominican Republic	1994	62.5	4.5		
El Salvador	1994	78.0			
Jamaica (3 zones)	1994	90.0		8.0	
Malaysia	1994	11.0	65.0		9.0
Mexico	1994	11.0	35.0		2.0
Sri Lanka	1994	66.0			27.0
Togo	1994	24.0			47.0

Data were extracted from table 2 of draft paper "Export Processing Zones: Addressing the Social and Labour Issues" by Ana T. Romero, 1995, ILO, www.ilo.org/public/english/85multi/research/epzad.htm

Table 6

Employment Creation in Selected EPZs

countries	year of first EPZ	year of data	number of workers employed in EPZs ^a	labor force of the country ^b	Percent of EPZ to national employment	new entry into the work force ^c
Dominican Republic		1992	142,000	3,014,280	4.71%	76,880
		1996	164,639	3,344,704	4.92%	59,044
Jamaica	1976	1994	14,148	1,273,000	1.11%	23,000
Mauritius	1971	1995	80,466	470,816	17.10%	8,192
El Salvador	1976	1991	6500	1,942,850	0.33%	63,860
		1996	50,000	2,377,180	2.10%	52,890
Philippines	1972	1991	43,858	25,339,500	0.17%	606,100
		1992	60,000	25,960,000	0.23%	620,500
		1994	91860	28,151,210	0.32%	643,220
		1997	183,709	30,881,340	0.59%	1,402,750
Bangladesh	1983	1996	37,533	60,839,672	0.06%	955,672
Malaysia	1971 (law)	1990	98,900	7,007,900	1.41%	193,910
		1996	196,774	8,451,692	2.32%	207,748
Sri Lanka		1990	60,000	6,814,200	0.88%	153,000
South Korea	1970	1991	21,910	11,020,400	0.20%	198,000
Taiwan	1966	1990	80,000	8,423,000	0.95%	33,000
		1997	57,016	9,400,000	0.60%	
Mexico	1965	1992	500,000	32,805,256	1.52%	1,446,990
		1997	898,786	37,739,544	2.38%	643,532
Costa Rica	1972	1992	15,000	1,214,040	1.24%	30,600
		1996	47,972	1,333,800	3.59%	17,940
Honduras	1976	1991	19,000	1,822,380	1.00%	67,280
		1996	61,162	2,094,444	2.92%	59,004
Togo	1995	1996	4,000	1,724,500	0.23%	51,410

Data on Philippines from Pena (1993), Jardiniano (1993). For 1994 and 1997 from ILO (1998). Data on Jamaica from WB Staff Appraisal Report No. 12491-JM (1994). Data on Dominican Republic from WB Staff Appraisal Report N. 12491-JM (1994) and ILO 1998. Data on Malaysia and South Korea EPZ employment from Multinationals and Employment - Global Economy of the 1990s, ILO, Geneva, 1993. Data on Philippines and Bangladesh EPZ employment data from ILO working papers 77 (1996) and 80 (1998) respectively.

a) all employment numbers are approximates.

- b) data from world bank social indicators data set: total labor force, intrapolated. Data on Taiwanese labor force is from Taiwan Statistical Data Book, 1994, by Council of Economic Planning and Development.
- c) increase in labor force is calculated as the increase in total labor force from the year previous to that listed in column 2 of the table (year that data is available for EPZ employment).

Table 7

Central America: Minimum Wage in EPZs and National Minimum (in US dollars), 1995

Country	Minimum Monthly Wage in Zone	National Minimum Monthly Wage
Guatemala	88	84
Honduras	78	67
El Salvador	132	125
Nicaragua	85	n.a
Costa Rica	195	208
Panama	135	180

Source: secondary source is table 2.8 of ILO's 1998 document: Labour and Social Issues relating to Export Processing Zones. ILO document references L. Daeren's 1997 work as the primary source.