



AN ASSESSMENT OF THE IMPACT OF EXPORT PROCESSING ZONES AND AN IDENTIFICATION OF APPROPRIATE MEASURES TO SUPPORT THEIR DEVELOPMENT

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List of Abbreviations

ADB	African Development Bank
AGOA	African Growth and Opportunity Act
CEACR	(ILO) Committee of Experts on the Application of Conventions and Recommendations
EGDP	Export Growth and Diversification Programme
EPZ	Export Processing Zones
FIAS	(World Bank) Finance and Investment Advisory Service
FDI	Foreign Direct Investment
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit (German Technical Cooperation)
GVC	Global Value Chain
IEG	Independent Evaluation Group (World Bank)
ILO	International Labour Organization
IMF	International Monetary Fund
MAFEZ	Masan Free Export Zone (South Korea)
NGO	Non-Governmental organization
NIC	Newly Industrialized Country
ODA	Official Development Assistance
OECD	Organisation for Economic Co-operation and Development
SAP	Structural Adjustment Program
SCM	(WTO) Agreement on Subsidies and Countervailing Measures
R&D	Research and Development
RTA	Regional Trade Agreement
TNC	Transnational Company
TRIMs	(WTO) Agreement on Trade Related Investment Measures
UNCTAD	United Nations Conference on Trade and Development
UNIDO	United Nations Industrial Development Organisation
USAID	United States Agency for International Development
WEPZA	World Economic Processing Zones Association
WTO	World Trade Organisation

Executive Summary

1. Export Processing Zones (EPZs) in their traditional form (fenced-in industrial parks where export-oriented investors enjoy free port status) emerged in the period 1950-75 and first became widely adopted between 1975-85. Currently there are more than 3,500 EPZs in 130 countries. EPZs have been mainly but not exclusively targeted at attracting foreign direct investment (FDI) in labour-intensive manufacturing; however, an increasing number of EPZs are targeted at capital-intensive manufacturing or services, and/or are also open to domestic investor participation. Some newer EPZs also depart from the traditional model by embracing wider regions.
2. Most of the first EPZs were established in Asia, and Asian EPZs have also witnessed the highest level of innovation in respect of sectoral focus, geographical flexibility and openness to domestic enterprise. A number of the Asian countries adopting EPZs in the early stages later became the so-called Newly Industrialised Countries (NICs).
3. The World Bank and some bilateral donors provided extensive support to EPZs in the 1980s and early 1990s, with the aim not only of promoting developing country export growth but also of creating what was seen as a bridgehead to more liberal trade regimes. Since around 2000, as trade liberalisation has become widely accepted as a norm, multilateral donors have become more cautious in their approach to EPZs, recognising that these may be promoted by some developing countries as an alternative to wider trade and business environment reforms. Furthermore, it appears that a majority of World Bank-supported EPZs have been unsuccessful in their own terms.
4. The potential impacts of EPZs can be grouped under the headings of static and dynamic effects. Static effects may include increasing and diversifying exports, increasing FDI and increasing employment. Dynamic effects may include promoting technology, skill transfers and backward linkages with the host economy. The second group of impacts is difficult to quantify. A more serious problem however is that it is difficult to distinguish the effects of EPZs from those of other factors influencing the same variables. This problem is compounded by the fact that EPZs differ considerably amongst themselves. Finally, there is a general lack of good time-series data on impacts, even in respect of static effects, apart from for a few EPZs mainly in larger Asian countries. All these factors are reflected in a literature that is overwhelmingly dominated by case studies.
5. Having said this, the record of EPZs in attracting FDI is highly uneven. A sample of 17 countries with EPZs shows huge variations in levels of investment attracted by EPZs, and includes five countries where the EPZ investment stock is \$300 million or less. There are similar variations in terms of export performance and employment, as well as a large number of cases where investment and employment in, and exports from EPZs have been extremely low. In general, EPZs in Asia and

some other countries with large populations appear to have had larger impacts than those elsewhere, especially in relation to those in Africa.

6. Evidence on EPZs' dynamic effects is too patchy to draw strong conclusions, although there is a suggestion that dynamic effects are probably low for traditional EPZs. This is especially the case if they are dominated by foreign-owned labour intensive manufacturing in globalised sectors, and/or where EPZs operate as enclaves in countries with otherwise low levels of industrialisation. Instances of dynamic effects appear to be more frequent where EPZs are found in middle-income countries and where the competitiveness of EPZ enterprises does not depend upon the incentive package and cheap labour costs alone.

7. Meanwhile, an extensive literature has developed concerning labour conditions in EPZ. While a majority of this literature is critical of EPZ labour conditions, there is little evidence that these are any worse than in their host countries more generally. Some aspects of labour conditions, notably wage rates, may be actually higher than in host economies. On the other hand, there does appear to be evidence that labour organisations are frequently repressed in EPZs.

8. One of the reasons for the apparent decline in the static effects of creating additional EPZs in their traditional form has been referred to already. This is the widening adoption of trade liberalisation by developing countries, which reduces the advantages to operators of schemes in which remission of import duty on imported inputs and raw materials play a large role. For developing countries as a group, average tariff levels have declined by more than half since the first large wave of EPZs in the 1980s, and in most cases their economies have experienced liberalisation along other dimensions too.

9. A second reason for the declining effectiveness of traditional EPZs relates to parallel changes in the quality of developing country infrastructure and the efficiency of customs clearance procedures. In respect of infrastructure, per capita consumption of electric power and connection to telecoms systems have improved, often dramatically, in all the sample of 17 developing countries referred to earlier for which time series data is available since 1980. Over the same period, improvements have occurred in the productivity of rail freight systems for six of the 10 members of the sample for which time series data is available. There was also an improvement for all countries in the sample for which time series data was available but one in the quality of highway provision. As for customs efficiency, time series data on an indirect measure suggests significant improvements since 1980 in Asia and Latin America (though not Africa).

10. This is by no means to cast doubt on export growth and diversification as a developing country growth strategy, subject to certain qualifications. Growth in exports of manufactures directly contributes to GDP growth, though not necessarily at unity. Furthermore, the growing tendency for manufacturing industries to be organised in global value chains in which production is outsourced to developing

countries, means that developing country manufacturing exports should continue to grow even if demand in developed countries slows down. This is as a result of production in developing countries replacing that in developed ones.

11. The qualifications to these trends that may be noted do not concern obstacles to growth of developing country exports. Rather they concern declining terms of trade for a range of labour-intensive manufactures that developing countries specialise in. This decline is most evident in relation to clothing, although indirect evidence suggests that it applies also to consumer electronics components and finished goods. This points toward the importance of new competitiveness factors in developing country manufacturing, in relation to which the traditional EPZ incentive package is largely irrelevant.

12. While it is sometimes argued that a number of the incentives offered to EPZ investors are incompatible with WTO rules, both most of the measures incorporated in traditional EPZs and those that form part of later generations of export growth and diversification policy are actually permitted under these rules. Furthermore, a total of 65 developing countries members of WTO may legally provide any type of export incentive, including these that are otherwise illegal under WTO rules, until 2015.

13. Recognition of the decreasing effectiveness of traditional EPZs, as well as of the emergence of new challenges to developing country exporters, poses with some acuteness the question of alternatives to EPZs. It is inappropriate to seek a general answer to this question. Rather, the answers given should take into account the nature of the main economic development problems facing a given country. These may be poor governance, or macro-economic instability and associated high costs of finance, or inadequate human capital formation, or (in the case of land-locked countries) inadequate infrastructure in the wider region – or some combination of these. Additionally, even in countries where problems of this kind have been largely overcome, domestic factor prices may not favour export competitiveness. If issues of this kind are not addressed first then, while a traditional EPZ may yield some static gains these will be difficult to sustain. Hence, support to such arrangements will almost certainly be a second-best option.

14. In those situations where all these problems are being addressed, then the issue is rather adjusting export growth and diversification policies to meeting the new competitive challenges. Here, answers are harder to come by. They probably include interventions targeted at specific aspects of competitiveness, including inducing firm-level adaptation and innovation. Such interventions moreover make more sense if targeted at all operators in a given sector or host economy, rather than foreign investors alone. They may include, for example, government support to exchange rate competitiveness, interventions on credit and interventions on technology. A cautious approach is advisable in these areas however, in order to avoid free riding.

15. Most countries in Sub-Saharan Africa fall into the category where the main economic development problems are far from resolved. Simultaneously, it is widely recognised that they are falling more and more behind Asia as far as trade competitiveness is concerned. This has led some recent commentators, notably Collier (2007), to argue that it is worth providing some support to an improvement in this competitiveness even when giving overall priority to resolving problems such as governance or macro-economic instability. Rather than proposing additional measures such as EPZs for Sub-Saharan African countries to adopt to this end, Collier suggests instead that *developed* countries should develop a new system of preferential market access earmarked for Africa. This suggestion reflects a broader trend amongst economists for a renewed of interest in the potential of trade preferences, dating from the widening recognition around 2004-05 that the WTO Doha Round (even if completed) is unlikely to provide Africa with meaningful welfare gains. The precise make-up of such a new generation of preferences remains to be elaborated.

1. Introduction

EPZs were amongst the first initiatives pioneered in developing countries with the aim of promoting export growth and diversification. The first generation of EPZs, initiated mainly by what were to become the Newly Industrialised Countries (NICs) of east Asia, took the form of providing investors with remissions on import duties for inputs and raw materials, with enhanced or improved infrastructure (usually within a geographically restricted physical area) and with speeded-up customs clearance procedures. These schemes generated some substantial initial impacts, leading to their adoption by a large majority of developing countries today.

A debate on the merits of EPZs has been going on for at least two decades. In the academic literature a consensus has emerged that they are a second-best option for promoting economic growth more broadly. It is argued that EPZs, especially under current conditions, will be successful only if there is a generally favourable macro-economic and business environment in place. Moreover, the impacts that can be expected from EPZs as such are diminishing. Yet a number of countries – including those in Asia who were amongst those promoting them first – apparently continue to register gains from them.

This study examines the extent to which EPZs should be considered only a ‘second best’ policy, as well as what alternative policies may be followed in order to promote export growth in developing countries in general and those in Sub-Saharan Africa in particular. It does so on the basis of considering these questions against the background of a number of inter-related themes, and – given the absence of any comprehensive data set – mainly on the basis of a literature review.

The first of these themes is the evolution of EPZs over time. The term covers a wide variety of interventions corresponding to different models prevailing in different regions in different periods. We ask about the extent to which successful EPZs can be identified with specific models, regions and periods and – if so – what this implies.

The second is the evolution of donor policies and practice in relation to EPZs. To what extent and under what circumstances has donor thinking on EPZs come to resemble the current academic consensus? To what extent, for example, were donor supported EPZs successful or unsuccessful in their aims, and what conclusions did donors draw from these results?

The third is the known impacts of EPZs. As in the case of export growth generally, these can be divided into static and dynamic effects. Static effects include changes in foreign direct investment and in export and employment levels. Dynamic effects include processes of diffusion of technologies, know-how and skills from successful exporters to host country economies generally. A related issue, raised by many of the critics of EPZs, includes the so-called ‘quality’ of the employment generated.

Another, arguably prior one, is the coverage and quality of the data available on the impacts of EPZs.

The fourth is the extent to which broad economic conditions globally continue to favour developing country export growth as such, and the deployment of EPZ-type policy instruments in particular. Supposing that economic conditions for developing country export growth remain positive, do the specific conditions under which EPZs were initially successful still apply? What were these conditions and to what extent and how have they changed?

The fifth is whether EPZ-type interventions, particularly those that made up the initially successful model, remain legal in relation to the multilateral trade regime. Since 1994 the WTO has adopted rules forbidding a wide range of subsidies. What implications does this have for developing country EPZ promotion?

Finally, what are the alternatives to supporting EPZs in order to promote growth of exports and the economy more broadly? Furthermore, are all these alternatives equally relevant for all developing countries or are some more relevant for middle-income ones than for most of those in Sub-Saharan Africa? And how much do we know about their effectiveness and their capacity requirements, relative to EPZs?

These six themes provide the subject matter of the chapters that follow. A conclusion brings together the main findings.

2. Generations, models and regional variations in Export Processing Zones

The evolution of EPZs

The creation of specific locations for promoting external trade is not new. Examples range from the Greek island of Delos in 300 BC, free ports established in a number of European cities in the 17th century, through to the first industrial park set up in 1896 in Manchester, England.¹ A crude generalization of the evolution of export-oriented zones points to three broad generations of models. Prior to the 1970s one finds a mixture of free trade ports and industrial parks in operation, but most frequently in isolation from one another. On the one hand free trade ports simply provide duty free zones outside the customs area of the host country, mainly for the purpose of facilitating merchant trade. Industrial estates, on the other hand, can be defined as areas specifically zoned for industrial activity where relevant infrastructure and other utility services are provided. These can often be found in strategic locations (to facilitate trade) and are separated from resident populations (to limit social and environmental damage).

From the 1950s to the 1970s, a small number of countries established economic zones combining aspects of both the free trade port and the industrial estate (e.g., Shannon Free Zone set up in 1959 in Ireland), often with the explicit objective of promoting export-processing industries. In generic terms these formed the basis for the conventional or traditional notion of an EPZ that can be defined as “an industrial estate ... that specialises in manufacturing for export. It offers firms free trade conditions and a liberal regulatory environment.” (World Bank, 1992: 7). The traditional EPZ thus combines fiscal incentives attractive to exporters of manufactured goods (e.g., duty free imports of inputs) with operating conditions that are more conducive than those available to firms in the host economy. Taking these early examples as a model, the use of such zones expanded rapidly from the late 1970s, both within and across countries. As shown in Table 1, in 1975 only 79 zones were operative in 25 countries; by 2006, approximately 3,500 zones were operating in 130 countries. Although precise data is lacking, estimates also suggest that up to 20% of world trade may be channelled through some sort of export promotion zone (see Papadopoulos and Malhotra, 2007).

The growth of EPZs as a policy instrument has been accompanied by a considerable expansion in the forms that these zones take. This has made them much more difficult to define in any precise manner. For example, the very notion of a specific (fenced-in) zone can be misleading as many governments have extended EPZ-type incentives to selected export-processing firms independently of their geographical location (e.g., the Mexican *maquila* programme and the Mauritian model). In addition, certain countries have introduced wide-area EPZs referring to the extension of EPZ-type conditions to large territorial regions of the host country such as Manaus in Brazil. Modern forms of EPZs also embrace a wider range of

¹ See the Appendix of World Bank (1992) for a more comprehensive overview of the history of development zones.

industries than manufacturing firms that were the main focus of early EPZs. There are now an increasing number of zones that are targeted to other growth sectors such as tourism or financial services (see below).

Table 1: Export Processing Zones worldwide (1975-2006)

	1975	1986	1997	2002	2006
Number of countries with EPZs	25	47	93	116	130
Number of EPZs or similar types of zones	79	176	845	3000	3500
Employment in EPZs or similar (millions)	-	-	22	43	66

Source: Boyenge (2007)

Given the varied types of zones that can be found across the globe, it is helpful to think of conventional EPZs as a subset of more general export growth and diversification programmes (EGDPs). The latter can be defined as a: “a government policy to promote exports of goods and/or services by offering a more competitive business environment through provision of special incentives including in particular tariff exemptions to inputs in a geographically defined area or through a specification process” (Engman et al., 2007: 11). It should be noted that the EGDP concept should not be confused with generic fiscal incentives used to attract foreign investors. Although there may be substantial overlap in terms of the tax incentives on offer, an EGDP suggests the more specific policy orientation towards export diversification and subsequent growth. Thus, EGDPs typically both exclude firms in the primary sector and focus on those serving world rather than domestic markets alone. Moreover, such a policy programme is not restricted to fiscal incentives but typically includes a wider range of enhancements to the business environment (such as regulatory exemptions and rapid customs processing).

The above definition, used hereinafter, points to three distinctive aspects of any EGDP, including conventional EPZs:

1. it is a selective policy intervention which applies to specific firms or locations;
2. the overall objective is to promote secondary and/or tertiary sector exports (i.e., not exports of raw materials or traditional agricultural goods). In many cases where domestic firms either do not exist or do not have the capacity to compete in world markets, this aim subsumes that of attracting specific forms of foreign direct investment;
3. the focus is on **improving incentives** for selected export firms. Among the many measures used, tariff reductions or exemptions on intermediate inputs as well as other fiscal incentives are almost always employed (see further below). Other common features are access to (high quality) infrastructure and streamlined customs procedures.

Different kinds of Export Growth and Diversification Programmes

In order to distinguish between different kinds of EGDPs, of which EPZs are a subset, it is helpful to review their design features along a various dimensions. The most frequently discussed and analysed of these are:

- *Geographical scope:* the World Economic Processing Zones Association (WEPZA) distinguishes between small- and wide-area export promotion zones. The former refers to a fenced-in area often located at a strategic trading post (e.g., key borders, deep water ports) and corresponds to conventional notions of an EPZ. In such a case, the interaction of EPZ firms with domestic residents and firms can be highly restricted. Wide-area zones, however, can embrace entire regions or provinces and thus suggest a much greater degree of interaction with domestic actors. Finally, and as already indicated, there are those EGDPs that have no defined geographical reach but refer to firms that meet specific criteria.
- *Sector specificity:* EGDPs either may be open to all export sectors or targeted to promote specific industries such as electronics, information technology (e.g., Bangalore, India) or financial services (e.g., the Cayman Islands). The ILO's database (Boyenge, 2007) provides an extensive overview of the various export sectors found under EPZ or EGDP schemes in different locations. The different kinds of activities (sectors) found in EPZs thus leads to a common distinction between labour- and capital-intensive zones.
- *Fiscal treatment:* special fiscal incentives not only are a hallmark of EGDPs but also vary widely in their scope and duration. While duty- and VAT-exempt imports (of intermediate goods) and exports (of finished goods) are customary, reductions in corporate income tax, dividend taxation as well as accelerated depreciation also is commonly found. Madani (1999: Tables 1 and 2) provides a summary of incentives offered by EPZs in selected African and Caribbean countries. See Chapter 6 for a review of the compatibility of different kinds of incentives with WTO rules.
- *Domestic regulations:* particularly where EGDPs are located in specific, restricted-access areas, exemptions from certain domestic regulations can apply. These are particularly relevant in the domains of foreign exchange (use of local banking system, repatriation of profits), labour, immigration and the environment. For example, in a number of cases the minimum wage within EPZs is set at a different level to that of the domestic economy (see Madani, 1999: 108).

A number of other design features also distinguish between kinds of EGDPs. While these may be important in practice, they have received somewhat limited attention in the literature and therefore do not receive extensive treatment here. These features include:

- *Firm characteristics:* regulations often exist as regards the degree of foreign ownership allowed within the EGDP and/or the extent to which the domestic private sector can gain access to the EGDP-equivalent benefits. Many EGDPs allow full foreign ownership and profit repatriation, especially where these are restricted in the domestic economy. Domestic access to EGDP incentives also is

frequently limited to new rather than established firms, such as in the case of Tanzania.

- *Domestic market sales:* there are also differing degrees to which EGDPs can sell finished products within the domestic economy. Small-area (fenced-in) EGDPs frequently are treated as off-shore entities such that any sales to the domestic economy are treated as imports. However, in the spirit of stimulating greater linkages (see below), some other EGDPs allow a fixed proportion of sales to be made on the domestic market (e.g., in Mauritius the cap was 20% but has been *de facto* abolished).
- *Infrastructure provision:* a common feature of EGDPs is the provision of new or upgraded infrastructure in order to substantially reduce both start-up and recurrent costs. This can range from basic utilities to transport infrastructures (roads, railways, port terminals) and even factory unit or warehouse shells. These features generally are most relevant for small-scale EPZs in low income countries where business infrastructure can be unavailable, unreliable and/or of poor quality.
- *Zone management:* for small-area zones (EPZs), management may be placed in either public or private hands. In the latter case the relevant public agency is limited to a regulatory function and is not responsible for ongoing maintenance (or even initial construction) of the zone. Private operators typically operate on a cost-recovery basis and may provide additional services such as logistics, business or marketing intelligence.

The above framework allows for considerable diversity. This begs the question whether there are any similarities in the kinds of EGDPs (or EPZs) either across regions or across countries at similar levels of development. Any attempt to answer this question in the affirmative can be countered by numerous exceptions. Indeed, the empirical and legal diversity of existing EGDPs makes their comparison problematic and few recent studies provide any comprehensive survey. Even so, and as recognised by Gauthier (2004), a general pattern seems to be that Asian countries have taken a lead in developing wide-area economic zones encompassing entire regions. The more advanced (successful) Asian countries also show a greater tendency to experiment with zones targeted at promoting specific tertiary sectors, such as China's high-technology parks. In sub-Saharan Africa, however, the main form of EGDP remains the conventional small-scale EPZ. Nevertheless, extensive liberalization across the continent since the 1990s has been accompanied, in many countries, by the emergence of highly concessionary investment regimes for foreign companies across many sectors. As a result, the fiscal incentives available within many Sub-Saharan African EPZs do not differ substantially from those that may be available under the same country's investment promotion regime (at least over the medium-term).² However, additional aspects associated with an EPZ, such as infrastructure provision, are not usually found under these investment promotion regimes.

² This point is reinforced by the discretionary nature of many investment regimes in Sub-Saharan Africa, allowing large foreign firms to negotiate a specific package of incentives with the host government.

Summary

This section has identified a distinction between conventional or traditional EPZs and more modern export growth and diversification programs, which tend to employ a wider range of incentives and are not territorially limited. Conventional EPZs have been and continue to be used extensively across the globe, both in developed and developing countries. However, they take diverse forms depending on country circumstances and the objectives that motivate their implementation. As it will be seen, this makes the analysis of EPZ performance particularly difficult. More modern forms of EGDPs are not used as extensively and are more concentrated in middle income countries with a degree of domestic industrial capacity. The focus of the study, therefore, is on traditional EPZs.

3. Donor policy and assistance in relation to Export Processing Zones

This chapter examines the evolution of donor policies in relation to EPZs. Though a number of bi-lateral and multi-lateral organizations have provided support to EPZs in developing countries, available material on especially bilateral donors' EPZ projects is extremely sparse. Therefore, this chapter will in particular focus on the evolution of the World Bank's policies in relation to EPZs. The chapter also briefly looks at the levels and modalities of financial and technical donor support to EPZs, to the extent that material on these matters is available.

Evolution of EPZ policies

During early generations of EPZ initiatives, particularly in East Asia, these were either ignored by the World Bank or were welcomed as a counter-balance to the wider industrial policies applied by the countries concerned. The latter policies stressed infant industry protection in relation to the domestic market. In other words, where the Bank gave attention to EPZ initiatives, this was mainly as a device to change trade regimes in a direction more favourable to tradables generally. In Africa, the Bank supported EPZs for many of the same reasons during the early years of the structural adjustment programs (SAPs) implemented by the International Monetary Fund (IMF) and the World Bank.

Throughout the 1980s, establishing EPZs was continuously promoted in SAPs as a quick fix to correct biases against tradables, since implementation of wider reforms to trade regimes tended to be slow and in some cases patchy. World Bank loans for the construction of industrial estates and factories for EPZs (amounting to US\$ 25-60 million) were first made from the mid-1980s onward to Sri Lanka, Thailand, Malaysia, Philippines, Dominican Republic, Colombia and Kenya. UNDP allocated complementary technical assistance funds to provide free zone experts (UNCTAD/WTO, 2007; ADB, 1999).

In the 1990s the Bank continued to support EPZ development, but now mainly in the context of wider strategies of export development and facilitation including upgrading of port handling facilities, transport linkages to ports and reform of customs departments (the 'Gateway' projects). The argument also began to be advanced by the Bank and other development agencies (e.g., African Development Bank) that EPZs were only successful in the context of the adoption of wider programs of economic reform.

Since around 2000 both the Bank Group and the IMF have suggested that developing country governments actually may use EPZs as a camouflage for avoiding broader macroeconomic reform (this position was voiced in the 1990s too, but less systematically). There seems to have been a corresponding tightening of the conditions under which lending to them occurs. Whether EPZs are publicly or privately owned is now a key issue, not least because public ownership is said to favour elite rent-seeking. Still, it is not clear on what evidence the assumption that private (or privatized) EPZs are more effective than state-led ones rests. The major

World Bank IEG evaluation of 2006 thus used EPZ privatization as an indicator of relevance and efficiency, and World Bank policies now encourage a move from public to privately run EPZs in developing countries. In these privately run zones, it is argued, governments can take a hands-off approach, and concentrate on improvement of (subsidised) roads, airports and ports in or near the zone and assure supply of electricity, water and telecommunications. Moreover, the host government should provide effective legal frameworks, and be involved in the initial administrative stages of EPZ development, such as commissioning feasibility studies, encouraging domestic private sector involvement and marketing the zone abroad. Government officials should also provide and shoulder the cost of regulatory and supervisory duties, but otherwise leave the running of the business to a private corporation (see Madani, 1999).

While the IMF and the World Bank strongly favour export promotion, it is currently argued that this should be market-led and not interfere with the macro-economic regime. Both institutions seem to have become increasingly critical towards EPZs so that these are now seen not as stimulants, but rather as poor alternatives, to overall trade regime change. Thus, the IMF takes an unambiguously negative stance on EPZs in a recent African Regional Economic Outlook (2007: 50) stating that Sub-Saharan African countries trying to tackle a number of constraints all at once have 'sometimes tried to get around them by establishing export processing zones (EPZs); however, these cannot be protected from a poor business climate, and they can become magnets for rent-seeking - besides eroding the country's revenue base'.

Modalities and levels of donor support to EPZs

The current modalities of technical and financial donor support concretely provided to EPZs include a wide range of financial and technical components. The World Bank operates with three key groups of trade-related investment projects, namely customs, EPZs and matching grant schemes. For the EPZ component, USD 19.8 million for a total of three projects were approved between 1991 and 1994, of which as much as USD 19.5 million was targeted at EPZ development in Kenya. Between 2000 and 2004, a total of USD 16 million was approved for EPZ components - in this case the entire amount was for two projects in Africa, namely a rural transport project in Madagascar and the Gateway Project in Gambia. Of the World Bank's projects with EPZ components between 1987 and 2004, five aimed at establishing physical infrastructure. Moreover, four projects supported establishment of institutions that manage EPZs and trade promotion through technical assistance and consulting services; four projects supported training in sectors and enterprises in EPZs; four supported attraction of FDI and improvement of private enterprise performance, while ten projects aimed at a combination of privatisation of public zones, passing legislation enabling private operation of EPZs, and generating formal employment and growth. Following evaluation, ten World Bank projects with EPZ components were closed down by 2004. Two others were rated as moderately unsatisfactory, while eight were rated as moderately satisfactory or better (IEG, 2006). The report mainly deemed unsatisfactory performance to be due to lack of clearly defined management or delayed privatization of EPZs.

Recently, there is a weak trend towards channelling some EPZ support towards improvement of labour standards and industrial relations in EPZs. The exact levels of this type of ODA, and of the number of donors this applies to, is not available. But besides a growing number of NGO projects, at least a couple of bilateral projects have been implemented within the last few years. Labour standards are for instance a component of USAID's support to industrial development in Bangladesh's EPZs. The concrete activities include training of workers on new EPZ labour law and providing legal support and capacity building to workers and trade unions. Moreover, gender considerations are addressed. Likewise, the Chittagong EPZ Corporate Pilot Project supported by Care Bangladesh aims at improving working conditions and livelihoods for EPZ workers, including on labour law, health, credit and workers' rights (GTZ, 2007).

Summary

While suffering from weak documentation, especially on bi-lateral donor support to EPZs, the main conclusion of this section is that donor policy and assistance has evolved dramatically during the past 20-25 years. Within a consistent focus on changing national trade regimes, the World Bank and the IMF have tended to relate to EPZs through the lens of whatever development assistance paradigm was currently in vogue. Hence, the thinking of these international agencies concerning EPZs has evolved from (i) ignoring them; to (ii) promoting them as part of broader export promotion efforts, while seeing them as instruments to bring about broader trade regime change. Most recently, they have become increasingly critical towards EPZ initiatives, so that these are now seen as potentially hindering trade liberalization in developing countries. Moreover, EPZ management and ownership issues have increasingly been a focal point, resulting in recommendations for private (or privatized) EPZs over state-led ones. The extent to which this latter point is supported by evidence of greater efficiency is questionable – we may know something the uneven outcomes of state-led EPZs by now, but we do not necessarily know the extent to which privatization will automatically lead to improvement.

4. An assessment of the impacts of Export Processing Zones

4.1 Introduction

The focus of this paper is on conventional EPZs rather than EGPDs more generally. Whilst the distinction between the two may be blurred, it is important at least from the point of view of considering the advantages of EPZs vis-à-vis alternative instruments (see Chapter 7). This Chapter reviews what is known about the performance of EPZs and their contribution to socio-economic development. The first subsection summarises the main objectives of EPZs as identified in previous studies, before reviewing the many analytical difficulties that make drawing rigorous conclusions about EPZs highly problematic. Subsequent sections nonetheless draw on a wide range of material to sum up EPZs' impacts in respect of attracting foreign direct investment, promoting export growth and diversification, promoting backward linkages and diffusion of technology and skills, and promoting employment.

Objectives of EPZs

A useful framework for thinking about the impact of EPZs as a policy instrument is based on the principal goals or policy objectives often used to justify their establishment. These can be divided loosely into **static and dynamic effects** on the host economy.

Static effects mainly refer to direct or one-off gains associated with an EPZ, including:

- *Foreign exchange earnings*: improvement of the hard currency earnings of the host economy is frequently cited as a major objective behind an EPZ. This can occur principally from increased (net) exports but may also come from the initial FDI injection where this goes to domestic actors (e.g., construction, purchase of equipment). In turn this is expected to boost the balance of payments position of the host economy, thereby relaxing possible macroeconomic constraints.
- *Export diversification*: expanding not only the volume but also the variety of exports is also often considered important from the point of view of risk mitigation, particularly as regards reducing dependency on primary commodities which can be subject to significant price volatility
- *Employment creation*: the reduction of unemployment is a major motivation behind many EPZs, especially where urban unemployment or informal sector activity is high.

Dynamic effects refer to a range of largely indirect and on-going benefits that may stimulate the growth of the host economy more broadly. These include:

- *Technology and skills transfers*: frequently cited potential benefits of foreign investment both under EPZs and more generally are the transfer of technology to domestic firms and upgrading the skills (human capital) of local workers. In turn these may generate positive (productivity) spillovers for the domestic

economy, such as creating a workforce trained in modern manufacturing that can be employed by domestic firms.

- *Private sector linkages:* by attracting new manufacturing firms to the host economy, the EPZ may stimulate the development of forward and/or backward linkages to domestic firms. An example of the latter is where EPZ firms source raw materials or intermediate inputs from local suppliers. This has occurred in the Mauritian garment industry where laundry, embroidery and some printing services was sourced from domestic (non-EPZ) firms. Forward linkages also may be generated where EPZ firms use transport, freight and other local services; however, the extent to which this is viable often depends on the breadth of domestic industry as well as the nature of the EPZ firm itself.

The above are the most frequently cited goals of EPZs, but this is not a comprehensive list. There also is a range of (secondary) objectives that would seem to be less tangible and therefore not easily amenable to quantitative analysis. Consequently they have received less attention in the evaluation studies of EPZs, but may be important in some instances. They include:

Government revenue: although the concessionary fiscal treatment of EPZ firms suggests increased government revenue may not be a primary goal, successful EPZs generating a high-volume of additional net exports may provide a considerable boost to government tax revenues.

- *Reputation enhancement:* the establishment of an EPZ may be used to cement or enhance the reputation of the host government. As such, EPZs can represent signalling devices for either external and/or domestic political constituencies. For example, Jauch (2002) notes: “The World Bank regards the introduction of EPZs as a signal of a country’s departure from import substitution towards an export-oriented economy.” (p.101). Obviously, however, the extent to which such signals are genuine or misleading, or whether they are recognised externally, may vary.
- *Policy experimentation:* as a policy instrument, an EPZ can be used to experiment with and adapt export and foreign investment policies to local contexts. As EPZs typically are fenced-in enclaves, the host government can exercise a high degree of control over the policy ‘experiment’. This may be valuable where past experiences of foreign involvement in the domestic economy have had negative associations (e.g., colonialism). Policy lessons can then be derived and, where relevant, applied more widely. As noted by Amirahmadi and Wu (1995), the EPZ as a form of proto-capitalist policy experiment has been of considerable importance in many Asian contexts.
- *Demonstration effects:* a successful EPZ can provide important demonstration effects in two main areas. First, it can reveal the benefits of export diversification and liberalization, thus building political capital for further reforms in this direction. Second, local entrepreneurs can be inspired and motivated by the example of firms competing successfully on world markets.

The evaluation problem

There are substantial problems in undertaking a rigorous evaluation of the impact of EPZs, both on an individual and a more comparative basis. This stems from a variety of well-recognised problems. Firstly, and as indicated by Chapter 2, EPZs can be established to meet a range of quite different objectives. These suggest that relevant performance metrics (i.e., what represents ‘success’) will not be the same across all cases. Even if the relevant objective(s) to be assessed were to be agreed, it often is also not clear what the appropriate and quantifiable outcome indicators should be. For example, the measurement of skills transfers or backward linkages is not captured by standardised macroeconomic or national accounts statistics. This is to say nothing of the relevant time period over which measurement should be made.

A more serious problem, however, is that of identifying a credible counterfactual. Meaningful impact analysis is not equivalent to measuring, for example, how rapidly exports or foreign investment grow in a given country after establishing an EPZ. Rather, one needs to establish how these variables would have evolved in the absence of the EPZ. It may well be the case that foreign investors locate to an EPZ due to preferential tax treatment but would have undertaken a similar investment without the zone. In such a situation, attributing the new FDI to the EPZ would be erroneous. Setting out the counterfactual is no easy task as controlled experimental settings do not exist and many confounding variables can come into play. In particular, changes in the global economy as well as the impact of other economic policies make it difficult to isolate the unique effects of EPZs over time. Moreover, in the absence of well-defined and homogenous ‘control’ and ‘treatment’ cases (that is, similar countries with or without EPZs over the same periods), typically one has to rely on cross-country comparisons to generate counterfactual data. However, this runs into further difficulties due to the need to control for differences between countries across a wide range of features. These include initial conditions such as education, business infrastructure, the regulatory environment and the extent of domestic industrial development. One also needs to control for the myriad different forms of EPZs themselves, thereby significantly expanding the dimensionality of the problem.³ Taken together, the number of relevant control and confounding factors may exceed the small number of observations that are available for EPZs over a sufficient time period during which any impact can be expected (e.g., 10 years). If so, the problem cannot be solved and hopes for a statistically rigorous impact evaluation of EPZs may be illusory.

The problems do not stop here. Data pertaining to EPZs is extremely weak and is not conducive to comparative analysis. Many countries do not provide timely or accurate data even for headline figures such as EPZ investment levels, employment, exports etc. Even where some data is provided, these often refer to approved or ‘promised’ outcomes that diverge considerably from actual results. Relative to under-performing zones, the more successful or larger EPZs tend to have a deeper

³ In other words if we consider EPZs to be a kind of policy ‘treatment’, one needs to account for the large differences *between* subjects in the nature of this treatment.

and more accessible data profile.⁴ The uneven availability of data may lead to selection bias whereby analysis of EPZ performance is limited to those zones for which data is of an acceptable standard. Although difficult to judge, this problem would appear to be reflected in a skew of the EPZ literature towards larger Asian (e.g., Indonesia, Philippines, China), Latin American (Mexico, Costa Rica) and Caribbean EPZ cases (Dominican Republic). Excluding Mauritius, comparatively little attention has been given to EPZs in Sub-Saharan Africa despite the fact that they have been extensively employed in the region. Needless to say, an unbiased general analysis of EPZs would need to consider the full range of experiences.

As a result of the above, it is no surprise that the literature on EPZs fails to provide a satisfactory and general empirical analysis of the performance of EPZs. The vast majority of available studies focus on individual cases or a small handful of them. While these do provide some valuable insights, by their nature they do not engage with the counterfactual problem and thus cannot be considered reliable impact evaluations.⁵ One study that does attempt to go beyond the ‘handful of cases’ approach is Johansson and Nilsson’s (1997) analysis of the export impact of EPZs. They employ a cross-country regression to explore the performance of 11 EPZs versus a large number of non-EPZ countries. Numerous econometric problems, however, render the results fragile and difficult to accept. For example, the effect of having an EPZ is modelled via a single dummy variable despite the fact that Mauritius and Mexico, which do not fit the standard definition of an EPZ, are treated as equivalent to all other EPZ cases. No attempt is made to account either for the substantial differences between EPZs or for the fact that their control group includes countries with EPZs, although not all of the traditional variety. More recent studies that attempt to provide a broad overview of EPZs (e.g., Madani, 1999) simply do not attempt to provide a rigorous quantitative survey. The Engman et al.’s literature review explicitly acknowledges the evaluation problem: “It is extremely difficult to distinguish the effect of an EPZ and effect of other policy changes and/or changes in the general environment.” (2007: 23). Attempts to quantify the costs/benefits of EPZs also suffer from this fundamental problem. In short, in the absence of a credible counterfactual we are in a weak position to take a general view of the effect of EPZs as a policy instrument and/or identify general determinants of successful EPZ cases.

4.2 Foreign Direct Investment effects

The issues discussed above refer to both apparent EPZ successes and failures. This is germane because the *prima facie* evidence for EPZs is extremely mixed. This can be demonstrated from the simple metric of the volume of foreign direct investment

⁴ Mauritius, for example, provides readily accessible time series data in the form of quarterly reports regarding EPZ performance since the 1980s; but only those from the end of 2006 onwards are available online. See: <http://www.gov.mu/portal/site/cso>.

⁵ Furthermore, the multiplicity and variety of topics that can be studied under the EPZ umbrella (e.g., environment, labour conditions, gender), mean that numerous studies also focus on narrow issues within case studies, rather than on the overall or comparative performance of EPZs. A harsher reading of the literature would be that EPZs have become a poster-child for the ills of capitalism and, as such, has attracted a particular kind of scholarly critique.

(FDI) that has been attracted to different EPZs. Of course FDI is more of an intermediate than final objective of creating an EPZ. In the absence of domestic capital and expertise in non-primary export sectors it is assumed that FDI is a necessary first step on the way to generating final employment, export production and linkage effects.⁶ However, even before considering EPZs, it is worth noting that the general literature pertaining to the uneven pattern of FDI across countries remains inconclusive. Nevertheless, there is a well-established consensus that tax incentives often play only a minor role in FDI location decisions. A wide range of factors including labour costs, labour skills and organization, proximity to strategic markets and the general institutional and business environment, including corruption, have been identified as important (Hanson, 2001). This has led Zee et al. (2002) to argue that tax incentives (to promote investment) generally are not cost-effective unless they are very well targeted. On this basis the same authors advise against the widespread adoption of EPZs.

Table 2. Summary EPZ performance statistics for selected countries

Country	(1) Population (millions)	(2) Investment (US\$ mn)	(3) Employees ('000)	(4) Exports (US\$ mn)	(2) / (1) Investment per capita (US\$)	(4) / (1) Exports per capita (US\$)	(4) / (2) Export / Investment
Hong Kong	6.7	29,600.0	336.0	101,500.0	4,441.1	15,228.8	3.4
UAE	3.2	8,000.0	552.1	5,000.0	2,463.8	1,539.9	0.6
Lebanon	4.3	1,807.0	510.0	682.4	417.5	157.7	0.4
Jordan	4.9	1,164.4	54.5	410.0	238.3	83.9	0.4
Mexico	98.0	16,500.0	1,212.1	10,678.0	168.4	109.0	0.6
Namibia	1.9	155.6	29.0	1,007.0	82.1	531.7	6.5
Tunisia	9.6	747.5	259.8	20,544.0	78.2	2,148.1	27.5
Mauritius	1.2	73.2	65.5	737.0	61.7	620.9	10.1
Indonesia	206.3	11,310.0	6,000.0	18,410.0	54.8	89.3	1.6
Egypt	64.0	3,062.0	209.0	1,325.0	47.9	20.7	0.4
Pakistan	138.1	3,872.5	888.3	8,073.1	28.0	58.5	2.1
Philippines	76.6	1,270.0	1,128.2	32,030.0	16.6	418.0	25.2
Malawi	10.3	163.9	29.0	503.3	15.9	48.8	3.1
Togo	4.6	60.8	9.0	272.0	13.3	59.6	4.5
Nigeria	126.9	1,200.0	111.4	1,600.0	9.5	12.6	1.3
Kenya	30.1	258.0	38.9	277.0	8.6	9.2	1.1
Bangladesh	131.1	1,035.0	3,268.8	11,717.0	7.9	89.4	11.3
TOTAL	917.6	80,279.9	14,701.7	214,765.8	87.5	234.0	2.7

Source: adapted from Boyenge (2007)

Note: the table refers to selection of countries from different regions for which data is available. This should not be taken as representative in any way.

⁶ Attraction of foreign investment has not always been associated with EPZ success and may not even be considered a primary objective. Certain high profile EPZ cases indicate that investment by domestic firms has been more important than that of foreigners. The example of Mauritius in the early phases of its EPZ experience (1970-1990) is a case in point (Madani, 1999) – domestic agents who benefitted from surpluses from sugar plantations dominated EPZ investment.

Ignoring both differences in EPZ design and data inadequacies (which are considerable), headline figures compiled by ILO (Boyenge, 2007) indicate enormous differences in the volumes of investment into different EPZs. This is indicated by Table 2, which covers only a sample of countries to illustrate the degree of variation and, therefore, is not representative. Taking the measure of investment per capita, a crude result is that lower income countries seem to have been less successful in attracting FDI into EPZs compared to more advanced (middle income) developing countries. Thus, many of the African countries in the sample are found towards the bottom of the rankings on this measure. One also notices that certain countries with large domestic markets (by population) also have attracted larger volumes of investment – e.g., Indonesia, Pakistan, Mexico. However, this pattern is uneven – both Bangladesh and Nigeria have achieved smaller volumes of investment given their population sizes.

It is important to emphasise that any generalization from the above table is problematic. The simple point, which bears repeating, is that EPZs show very mixed *prima facie* results, even among those cases where basic data is available. In addition, and in light of the extensive use of EPZs as a policy instrument, there are no shortages of apparent ‘failures’. If EPZs had proven to be broadly successful policy interventions then one would not expect scholarly attention to continue to focus only on the well-known ‘classic’ cases. According to Baissac (2003) poor results from EPZs have been prominent in Africa: “Africa’s EPZs have played a negligible role in both the static and dynamic contribution to growth and development: all observers agree that with the exception of a handful of countries (Mauritius, Tunisia, Egypt), EPZs have had marginal impact, low FDI, absent linkages ... and limited foreign exchange contribution.” (p. 65). Senegal’s experience is often described in this way. According to Engman et al. (2007), an EPZ was established near the port of Dakar as early as 1974 but was dissolved in 1999 having hosted only 14 firms with 940 employees in total.

Kenya also has spent substantial public funds on creating and promoting EPZs, with comparatively little success until very recently (see below). In part this would seem to be because at the same time that public investments in EPZs were completed (mid-1990s), the government enacted trade liberalization measures that significantly reduced the competitive benefits of locating in an EPZ (Madani, 1999). Similarly, Namibia has been associated with a number of EPZ difficulties. Jauch (2002) notes that despite expectations of creating 25,000 jobs within a short period, Namibia’s EPZs had only created around 400. (Note this would seem to suggest that at least some of the figures in Table 2 refer to projected rather than realised outcomes). Although the Namibian government has continued to promote EPZs, problems continue. The Malaysian firm Ramatex Berhad, recently withdrew from an EPZ despite having made a US\$ 115 million dollar investment in 2001 backed by a tailor-made package of incentives including subsidized water and electricity, a 99-year land tax exemption and a grant of US\$ 11.5 million for site preparation. While the motives for the decision to leave are not altogether clear, the reaction of the

Namibian Minister for Trade and Industry is instructive. He is quoted as saying: “We will review our incentive regimes to make Namibia even more attractive as an investment destination” (Inter Press Service, Johannesburg, 10th March 2008), implying the EPZ challenge is viewed as one of simply ‘getting the incentives right’. We return to this point in Chapter 7.

Even where foreign capital has been attracted to EPZs, a frequent criticism is that these investments are of poor quality and footloose in nature. Consequently, the argument goes, they do not constitute a solid basis for sustainable, long-term growth. Certainly there is case study evidence to corroborate such views, but the extent to which individual stories represent a pattern is far from clear. In the first instance this kind of criticism is not unique to EPZs but can be made of FDI more generally. Secondly, the transience of foreign investment appears to be strongly associated with the specific characteristics of industrial sectors and the structure of the multilateral trading system, rather than being anything inherent to EPZs *per se*. This finding comes out of Sanchez-Ancochea’s (2006) comparative study of development in Costa Rica and the Dominican Republic. He argues that the apparel sector generates low domestic value-added and behaves like a primary commodity in the sense that prices follow a long-term downward trend. Even in the electronics sector, however, preferences into the US market tend to encourage assembly-only operations, with low skill demands and low sunk costs. Consequently, sectors attracted to EPZs can be highly sensitive to small changes in short-term production incentives (taxation etc.) rather than deeper location-based assets such as labour skills and organization that may attract investment capital with a longer-term outlook. The same point has been made with respect to the impact of changes in the multilateral apparel trading system. The phasing-out of the Multi-Fibre Agreement (MFA) quota-based system in 2005, combined with the US’s African Growth and Opportunity Act (AGOA) has engendered considerable shifts in the pattern of investments and exports for the sector (Gibbon, 2008; Rolfe and Woodward, 2005). Finally, Sargent and Matthews (2008) also note how the business strategies of Mexican *Maquiladoras* (an enterprise-version of EPZs) have changed in response to competition from large-scale Chinese manufactures.

The importance of external factors for EPZ ‘success’ is nowhere more evident than in Sub-Saharan Africa this decade. AGOA has provided (time-limited) preferences to qualifying African garment manufactures that are not available to Asian exporters. This has led to a jump in investments (to EPZs) in many qualifying countries such as Lesotho and Kenya, as documented in Rolfe and Woodward (2005). However, gains have been tempered by uncertainty surrounding continuation of AGOA preferences for countries with average incomes above \$1500 (e.g. Lesotho), as well as the effects of appreciation of the Rand in the Southern Africa region. Also, increasing segmentation within the garment industry global value chain (GVC) seems to be *increasing* entry barriers for lower and middle-income countries, particularly as regards entry into higher value added activities (for discussion see Gibbon, 2008). Thus, we see that EPZ investment performance is extremely mixed and appears to be driven by a wide range of factors, both internal and external to the host economy. Although the changing fortunes of different sectors and even

national economies are visible in EPZs, crucial determinants can be traced to changes in global trading rules and value chain dynamics rather than the design of EPZs themselves. This makes any attempt to generalize about EPZs as a policy instrument highly problematic.

4.3 Export expansion and diversification effects

The mixed evidence on attracting FDI is repeated in the domain of expanding and diversifying exports, both frequently cited objectives of EPZs. This is given by the estimates of EPZ exports per capita from Table 2, which show a clear correlation with the volume of investment per capita. The export performance measure ranges from a high of over \$15,000 in Hong Kong to under \$10 in Nigeria, with a median of slightly under \$100. Note that these figures are not stated on an annual basis such that the economic impacts in any given year would be smaller. A similarly diverse picture emerges from the volume of exports relative to the size of inward investment in EPZs. These estimates range from a ratio (multiple) of over 27 times for Tunisia to less than 1 for Egypt. If these figures can be relied upon, (which is far from guaranteed), the median ratio of exports to investment is only around two. In turn, this suggests that in many cases only relatively small export gains have been made from EPZs. At the same time, one cannot fail to notice apparent successes (although the causal link to EPZs can be questioned). In Bangladesh, for example, the share of foreign exchange earnings derived from EPZ exports increased to 18% in 2004/05 from less than 0.1% twenty years previously. This represents a growth rate six times higher than total national export earnings (Engman et al., 2007).

The empirical evidence on the effect of EPZs on export diversification is even scarcer. Certainly some of the traditional EPZ cases can be linked to remarkable and rapid rates of export diversification. The share of traditional exports out of Costa Rica, for example, declined from 47% in 1980 to 12% in 2000 while manufactures grew from 4% to 41% of exports over the same period (Engman et al., 2007). Equally, manufactures climbed from 15.5% to 48.4% over the 10 years to 2001 in Madagascar, driven by strong inflows of French investment to the country's EPZs as well as investors from Mauritius looking to take advantage of preferences under AGOA (see above) and lower labour costs.⁷ Needless to say, however, where EPZs have shown weak progress in attracting investment, exports have shown negligible improvements. Figures quoted in FIAS underscore the weak comparative export performance of EPZs in Sub-Saharan Africa. Replicated below in Table 3, these indicate that manufacturing exports from EPZs in Sub-Saharan Africa at end 2003 amounted to only US\$ 2.4 billion compared to over US\$ 84.5 billion in Asia and the Pacific. Interestingly, the table also shows that EPZs account for a larger percentage of total exports of manufactured goods in Sub-Saharan Africa than in other (more successful manufacturing) regions. While this can be interpreted in a number of ways, in light of very weak progress in industrialisation through much of Sub-Saharan Africa (UNIDO, 2004) it would seem to underline the existence of more

⁷ Note that in many cases figures for export diversification (e.g., primary vs. manufacturing exports) are stated at an economy-wide level. The direct association with EPZs therefore is implied rather than directly measured in these cases.

generic and fundamental problems in establishing viable manufacturing firms in Sub-Saharan Africa *with or without* EPZs.

Table 3. Estimates of EPZ export performance by region

	Zone exports of manufactured goods (US\$ billion)	Percentage of total exports of manufactured goods (%)
Global	177.7	8.3
Asia/Pacific	84.5	11.0
Americas	44.0	5.3
Central/East Europe & Central Asia	14.5	6.8
Middle East & North Africa	28.7	16.7
Sub-Saharan Africa	2.4	19.5

Source: Engman et al. (2007: 26)

Note: data are stated as indicative only, being based on a sample of countries for which data is available.

The evidence presented above does not amount to a general argument that EPZs have performed either well or poorly. For every EPZ export success story there is a corresponding failure. The point to stress is that the empirical record on exports, like FDI, is mixed. However, this does suggest that any *prima facie* argument to the tune that EPZs have generated large economic gains (on average) must be rejected.

4.4 Backward linkage, technological diffusion and inter-firm learning effects

The development - and strength - of backward linkages between foreign firms and host economies is often considered an important precondition determining whether, and to what extent, FDI contribute to host economies. While there is a large literature on backward linkages and their conditions, e.g. on clusters and national innovation systems, studies that particularly deal with linkages between EPZs or EPZ firms and host economies are sparse. Moreover, the literature that does exist suffers from the 'evaluation problem' described earlier – there is no real agreement on how to capture the effect of linkages, nor evidence of the extent to which linkages are actually created in practice. Likewise, existing studies usually consist of one or few case examples from which it is extremely difficult to draw any general conclusions. Furthermore, the cases cited are often the same (e.g. Malaysia, Mauritius, Mexico) while a large number of EPZs in less developed countries (not least in Africa) remain unexplored. Thus, the following attempt to explore backward linkages from EPZs to host economies in terms of local sourcing of inputs is based on single cases, from which generalizations (if at all) should be made with caution only. The section goes on to look at two related issues, namely technology diffusion and learning opportunities from EPZ development.

Backward linkages

The extent to which backward linkages have been a concrete objective of EPZ development varies between EPZs and between countries, though they appear to be the subject of increasing attention by those designing EPZs. In some cases, use of domestically produced intermediate goods is encouraged by host country governments, but the extent to which this happens in practice is difficult to determine (see also McIntyre et al 1996; Schrank, 2001). It has been stated in the literature (e.g. Hussein, 2000) that countries that have integrated EPZ activities with the rest of their economies, and formed clusters of suppliers around EPZs, benefit the most from EPZ development. However, accepting this as a general conclusion is problematic for reasons similar to those mentioned above - no comparisons are available of how 'clustered' versus 'random' domestic procurement affect the economy. Nor is it clear what the term cluster really means when used to describe EPZs – other than that EPZ firms and some suppliers merely locate close to each other within or around a certain EPZ. One of the few things that is clear is that the extent to which sourcing by EPZ firms is done locally is a critical factor in determining their contribution to host country economic performance, since it improves the ratio of net to gross exports (e.g. Din, 1994).

One recent study that attempts to make some general points concerning the conditions under which EPZ firms form backward linkages to local firms and economies by purchasing intermediates of local origin and/or using domestic raw materials is Jenkins (2006). He states that this differs according to a number of firm/industry related factors. It is important to note that even this study is limited to describing results found in Costa Rican EPZs, meaning that the findings may be specific to this context. Moreover, Jenkins aims more at identifying which backward linkages are associated with which factors, rather than at determining the causal mechanisms behind them. The following outline of Jenkins' points on which type of industries and firms are likely to create backward linkages is therefore complemented by other studies as well as the authors' own research.

According to Jenkins (op.cit), the following characteristics are associated with greater or lesser propensity toward backward linkages.

- *Industrial sector:* firms in traditional EPZ industries like clothing and electronics tend to purchase a smaller share of their intermediates and raw materials locally than other EPZ firms. While Jenkin's study suggests that this is due to the relatively low expense of transporting inputs from one country to another in these industries, allowing firms to exploit difference in the cost of factors and inputs across countries, other explanatory factors may be relevant as well. Global buyers in the clothing industry, for example, tend to nominate textiles and accessories to be used by producers according to a variety of criteria including quality, price and response time, meaning that suppliers in EPZ host countries compete with regional/global suppliers that are often better capable of fulfilling these criteria.

- *Capital intensity and age*: capital-intensive firms source a larger share of both intermediate inputs and raw materials locally than labour-intensive ones. This is most likely due to the former's low degree of 'foot-looseness' relative to more labour-intensive firms, which may translate into a larger incentive for developing backward linkages. Similar tendencies apply to firms that have been located for a relatively long time in a particular EPZ.
- *Ownership and size*: large firms and firms with foreign ownership may have better access to foreign suppliers, and hence tend to develop fewer links to local economies than firms with majority local ownership. As pointed out by Amirahmadi and Wu (1995), this tendency may also relate to foreigners' unfamiliarity with the host economy and input quality, which means that they often give preference to known sources abroad.
- *Export orientation*: the larger share of products that firms export, the less inputs they are likely to buy locally since firms that sell on the local market "make a greater effort to integrate themselves into the host nation" (op. cit.).

A number of other factors that do not characterize individual EPZ firms, but rather their host economies, may also influence the formation of backward linkages (see e.g. Johansson and Nilsson, 1997; Madani, 1999):

- *Quality of local inputs and EPZ regulations regarding local market sales*: local inputs may lack the necessary quality for products that are sold on global markets. In cases where EPZ firms are permitted to sell some percentage of their products in domestic markets, they may however source inputs locally, so that products for the domestic market may be produced from cheap, low quality inputs, while those used for export products are sourced – and often nominated by buyers or intermediaries – abroad.
- *The political economy* of the host country.
- The degree of technological compatibility between foreign and domestic firms.
- *Physical and business infrastructure*, supply reliability and competitive pricing of domestic inputs.
- *Location*. In cases where EPZ development have been located in remote, underdeveloped areas considered by host governments to be in need of economic development, few linkages have materialize.

Schrank (2001) takes further the argument of host economy characteristics as a precondition for backward linkages and states that the achievements of NIC EPZs are unlikely to be replicated in other developing countries. These achievements, the argument goes, depended on the attitudes and capabilities of domestic suppliers, not of TNCs. Thus, more recent generations of EPZs are seen to create employment and foreign exchange revenues, but seldom linkages to the same extent as in the NICs.

Technology transfer and diffusion

As in the case of backward linkages, most literature on technology transfer to developing countries is primarily concerned with FDI in general, rather than FDI within EPZs. The small number of studies that focus specifically on technology transfer and EPZs do not cover this in much depth. Moreover, general surveys are again lacking; hence the existing literature usually deals with one or two EPZ cases, typically in host countries where technology transfer could also more generally be expected to occur, such as Malaysia and South Korea. Madani (1999) outlines four competing positions in this literature on the role of EPZs in host economies, while stressing that they all consider EPZs as a source of technological transfer as well as having some catalytic effects on host economies. Probably because of the countries examined, this tends to impart a degree of optimism absent from the general FDI literature, which is more inconclusive on the question of positive spill-over to host economies (see e.g. Lipsey, 2002).

Transfer of technology from EPZs/EPZ firms to their local subsidiaries or other domestic firms can be embodied in machinery/equipment or patent rights. According to McIntyre et al (1996), in the medium-long run such technology transfer may lead to more substantial diffusion through transfer of the skills required to maintain the technology, and possibly too the development of indigenous versions of the same manufacturing technologies. Eventually, TNCs may even set up manufacturing and R&D facilities that employ domestic scientists and engineers working in conjunction with expatriate personnel.

It is common for EPZ designers to attempt to support such transfer of technology by setting up technology support systems, including institutions to provide services for firms to implement international manufacturing standards and improve product quality and also for worker training. Such programs often aim at putting the host country in a better position both in terms of selective attraction of 'better quality' foreign investment, and in terms of effective transfer and diffusion of technology (see e.g. Wignaraja, 2002; McIntyre et al 1996). However, while such effects been found to have occurred in some cases, they seem to have had little impact on technology diffusion and transfer to domestic firms in others. The existing literature does not provide any clear reasons why. Broadly, it may however be concluded that the dynamics and effectiveness of such institutions depend on a number of political economic factors in specific host countries (cf Ge, 1999).

Due to the complexity of technology transfer and diffusion, it is difficult either to measure its extent in a given economy, or the extent to which observed changes on this dimension might relate to the establishment of EPZs. On the one hand it has been stated that, when established in EPZs, foreign firms represent 'a show case' for domestic firms to learn from and copy (e.g. Johansson, 1994). This is apparently evident, in the words of Madani (1999: 21), from "the literature and eye-witness accounts". The concrete ways in which such spill-over occurs as the result of the mere presence of FDI are not clarified by this literature, and nor is how such automatic spill-over effects can be measured. Attempting to sum-up a range of studies, McIntyre et al (1996) state that technological diffusion within and beyond

EPZs is usually quite low in developing countries. Most transfer of technology that does occur happens within management systems rather than hardware and relates to quality control. R&D on the other hand typically remains centralized in TNC home countries (op cit). In spite of the limited evidence backing up this point, it does seem intuitively likely given the labour intensive character of most EPZ activities. Labour intensive industries are less likely to transfer or receive transfers of technology than capital-intensive ones. Based on a sample of 40 (labour-intensive) garment firms of different sizes in Mauritius, for example, Wignaraja (2002) finds in general that they experience only limited technology transfer through subcontracting and trade, though this is found to be greater for large than small and medium firms.

Inter-firm learning effects

Two quite contradictory overall discussions deal with learning effects in relation to EPZs. On the one hand, EPZs are often portrayed by critics as de-regulated and de-territorialized spaces, where TNCs merely come searching for cheap labour, and developing country states are competing in a regulatory race-to-the-bottom to attract investment. On the other hand, the spread of advanced manufacturing to some developing countries has led to an equally abstract claim that 'high performance' strategies, combining new process technologies and quality control systems with increased shop floor automation and discretion for multi-skilled frontline workers, have come to characterize EPZs. While many developing country governments have attempted to redesign former labour-intensive EPZs into high-tech enclaves, the extent to which these scenarios characterize, or will come to characterize, an EPZ in reality varies. Outcomes depend on a number of factors including the nature of the local labour markets, the industrial sectors attracted and investing firm strategies, including their mode of entry, the size and the time-horizon of investment and the type of operations established (McKay, 2004; Blomstrom & Kokko, 2003). A number of further concerns are also relevant here.

First, even in labour intensive EPZs, previously unskilled workers do sometimes benefit in terms of job training and learning-by-doing. However, it is commonly pointed out in studies of labour-intensive EPZs that the benefits of this type of skill acquisition are low, since most production processes in labour intensive industries are low-skill. Moreover, further training is more commonly offered to already-educated technicians or engineers than to operators. Therefore, it is argued, the actual rate of training and upgrading of labour skills within the EPZ may be low. When training is offered to shop floor operators, it is commonly provided on-the-job immediately after employment and/or dispensed on an ad hoc basis by experienced workers or supervisors (e.g. Mireri, 2000; Carr and Chen, 2004). Thus, it has been suggested that the most valuable aspect of this type of employment in terms of learning, may be simply "workers' learning of industrial work discipline and routine" (Sanassee, 2007; see also Madani, 1999).

Second, a study of the South Korean MAFEZ EPZ, based on previously unpublished data and documents and interviews with six TNCs (Lee, 1999) argues in more general terms that a sudden rise in local labour costs in one location, for example as a consequence of labour disputes, labour shortages or other structural factors, may

lead to greater training provision rather than TNC withdrawal. This depends on a combination of factors, including firms' dependency on local supplier networks, proximity to a certain end-market or the presence of labour skills. In the MAFEZ, those TNCs that stayed in spite of rising labour costs, often did so due to proximity to the Japanese end-market, and reacted by restructuring *in situ*. This type of restructuring might entail innovation including upgrading of labour skills or simply cost reduction measures, e.g. subcontracting and greater use of temporary workers employed according to need (Lee, 1999). Since proximity to the Japanese market was a main reason for staying in South Korea in spite of rising prices for foreign companies, it should be noted that Sub-Saharan African EPZs - which are not located in as close proximity to important end-markets - are less likely to retain FDI for these reasons following an increase in labour costs.

Third, the extent to which increased automation as a common form of technological upgrading in some EPZs contributes to heightening of skills and salaries for remaining workers is also subject to discussion. It is clear that the introduction of more complex technologies in EPZs/individual EPZ firms will generate demand for new technical skills on the shop floor. This has in some cases – especially where firms aim to meet international quality standards for certification or other purposes, requiring operators to be able to perform new specialized tasks – led to intensified training of operators provided by staff of the parent companies or by EPZ training centres. Still, it is also important to note that line automation and computerization sometimes reduces, rather than increases, the need for many skills (Lee, 1999; McKay, 2004; Sannasee, 2007). In terms of management, local learning effects may be even lower when foreign enterprises investing in EPZs are allowed to transfer their own staff for senior and managerial vacancies as has been noted in some countries⁸ (e.g. Madani, 1999).

Fourth, the extent to which labour and management learning leads to a diffusion of skills that benefit the general economic development of the host country is unclear. A rather general lack of export know-how in developing countries means that TNCs attracted to EPZs could potentially stimulate local firms to enter the export market by learning from the experience of TNC affiliates. Such a catalytic effect ideally should extend beyond EPZs, so it could affect both domestic firms operating within the zone and spill over to domestic firms outside the EPZ, depending on a number of factors, such as specific EPZs' dynamics and potential to attract FDI, and the extent to which incentive regimes include entire countries (or just EPZs) (Johansson & Nilsson, 1997). The latter authors suggest that a first step to promote diffusion of skills to domestic firms is to open up for their entry to EPZs. They continue by stating that for EPZs that are limited to restricted (fenced-in) areas, such catalytic effects are less likely to occur (see also Romer, 1993) While these suggestions may be worth taking into account, it is important to note that they seem to be merely the opinions of these authors, and not based on any kind of evidence.

⁸ Sannasee (2007) stresses that few foreign firms located in the Mauritius EPZ have transferred their own managers for clothing production. This is mainly due to the fact that transfer and salary costs generally exceed the cost of training local managers, and to the relatively high quality of the Mauritian educational system.

Fifth, a potentially important conduit of skill diffusion to developing countries are managers of local firms that started their career in TNCs. Sannassee (2007) claims that this movement of managers of foreign firms to the domestic sector is the most common mode of skill diffusion by TNCs to developing countries. However, he seems to base this generalization on a single study of the Mauritian EPZ plus a couple of other studies coming to the same conclusion. Furthermore, presumably this finding applies not only to EPZs but also to FDI more generally.

Finally, the same study (Sannassee, 2007) suggests that labour skills acquired in TNCs are transferable. Given the high labour turnover in EPZs (see below) it is argued that domestic firms may get the opportunity to benefit from the training and skills acquired by hiring workers previously employed in the zone's TNCs. However, Sannassee seems to base this claim only on statements by directors of TNCs. The opposite view - that skills acquired through training and learning-by-doing in the zones are generally not very sophisticated and may not prove helpful when workers move to domestic firms; and that the skills obtained are also often highly specific to the particular company or sector, and hence may be more or less useless in others, has also been stated (e.g. Kusago and Tzannatos, 1998). It is also important to note that possibilities for the type of learning identified in Mauritius (Sannassee, 2007) differ from one developing country to another depending on their respective labour market regulations, and therefore on workers' incentives to work in respectively 'foreign' or 'domestic' sectors. In Vietnam, incentives to work in the foreign-owned sector relative to the domestic one arise from the Labour Law, which entails both better benefits and higher salaries in the former. Therefore, workers trained in the domestic sector always tend to move to foreign firms, including those in EPZs, not vice versa (Thomsen, forthcoming; Friedman, 2004). While this kind of labour market regulation may thus represent a way of promoting workers' welfare in the foreign sector, it also contributes to undermine the retention of skills in domestic industry, which is unable to maintain its most qualified workforce.

Conclusion

In conclusion, it is clear that establishing local linkages, transferring and diffusing technology, and also generating learning are potentially positive affects connected with EPZ development. However, we do not know very clearly whether EPZs are more likely to generate such effects than other investment scenarios, or what sort of EPZs maximise them. At best, it can be concluded that linkages will differ between EPZ firms, EPZ sectors and individual EPZs - as well as according to the political economies of host countries.

4.5 Employment effects

While most jobs created in traditional EPZ involve low-wage assembly tasks, it has been noted that the recent trend for EPZs in some countries to seek to attract capital-intensive production processes means that these may either require fewer workers or more skilled workers, or both (Carr and Chen, 2004; Sargent and Matthews, 1999). It is therefore useful to pay attention to both the extent to which employment is generated and to the character of the jobs created by EPZs. Thus,

this section will first discuss employment creation in general terms; second, it will look at labour conditions in respectively labour-intensive and capital-intensive EPZs. Finally, two specific topics related to employment and working conditions, namely gender and migration, will be discussed.

Before proceeding to the analysis however, a few general comments on the literature reviewed in the following sections are necessary. There is a large literature on labour and EPZs, written mainly by activists, consultants employed by the ILO and, to a lesser extent, academics. The 'activist' literature – along with much of the academic literature on the topic - has two central characteristics: First, it typically focuses narrowly on employment issues in one or a few EPZs, or even in one or a few EPZ firms in a single zone, and does not deal with wider welfare and developmental impacts. Similarly, the arguments advanced in this literature often appear to be tied to the uniqueness of the case studies in question so that for instance the case of the Philippines, where labour militancy is generally high, is used to describe workers' negative perceptions of EPZ employment. Thus, the activist literature is mainly useful in terms of pinpointing issues of potential concern, but not in terms of making generalizations. A comparison of the cases described in this type of literature mainly leads us simply to the conclusion that pay, industrial relations and working conditions in different types of EPZs vary according to industrial sector and location.

This points to a broader observation, namely that it is generally not clear if and how the problems identified by the literature differ from labour conditions situation in developing countries more generally. The ILO (2007) has recently stressed that there is a lack of knowledge of the costs and benefits to labour arising specifically from TNC investment in EPZs.⁹ While the activist literature often indicates that EPZ working conditions are worse than average, periodic surveys carried out by the ILO do not entirely agree. The ILO points out that, on the whole, wages and working conditions in EPZs are better than those outside the zones, though it is stressed that this varies according to a number of factors including size of firms, industrial sector, company policy and conditions in the local labour market. Finally, though working conditions may sometimes be better within than outside EPZs, this does not mean that they should not be criticised (Boyenge, 2007).

Job creation effects

Establishing an EPZ is often seen as an effective way of generating employment in developing countries, and therefore to have a positive effect on the alleviation of poverty. By the late 1990s, some 22 million jobs existed in nearly 850 EPZs worldwide; in 2006, the number of EPZ workers was estimated at more than 66 million in 3500 zones (see Table 1). Of these, over 53 million jobs were in Asia, mainly in China, and almost 5 million in Central America and Mexico, while some 800,000 were in Sub-Saharan Africa (Boyenge, 2007). Job generation in EPZs obviously tends to be greatest when these are designed to attract labour-intensive

⁹ Hence, analysing this issue is presently an aim of the ILO Sub-Committee on Multinational Enterprises.

industries. Still, the number of jobs created from EPZ development is often less than expected by host governments and EPZ developers. Initially in Kenya for example, attracting investment to EPZs simply failed, as a result of which the zones were more or less unoccupied - though AGOA has contributed to some growth in the last decade.

The case-based literature also often states that the number of created jobs and the rate of growth in EPZs are modest if compared to the total work force of the host countries. For example, EPZs in the Philippines employed only 0.6 percent of a 31 million work force and seem not to have grown any faster than employment generally, which was increasing at an annual rate of 1.4 million workers in the 1990s (Madani, 1999). Similarly, the Zone Franche in Madagascar, which together with the Mauritian EPZ has been recognized as the most successful zone in Africa since the mid 1990s, has had very little impact on employment in the country as a whole since it accounts for only about 1% of the country's employment (Glick and Roubard, 2006). According to Engman et al (2007), this tendency is reflected both at a regional and global level, which ILO data on employment also confirms. Though ILO data on EPZ employment is very sparse – and also not directly comparable across countries since it often refers to different years – it shows a general pattern whereby EPZ employment constitutes a minor proportion of employment in developing countries. In Kenya, for example, there were only 40,000 employees in EPZs in 2006, compared to 1.7 million in the formal workforce, including 0.77 million paid employees in the private sector and 0.51 in the public sector (laborsta.ilo.org; Pollin et al, 2007).

Labour conditions and labour control

Markets for labour intensive products are generally highly competitive, as a result of which corporate strategy often entails increasing market share by undercutting competitors – usually by minimizing labour costs. This may imply use of (lower) piece rates, substitution of casual workers for permanent labour, or firms migrating in search of cheaper labour. Thus, the share of permanent employees is often higher in EPZs that attract capital-intensive industries than in those with more labour-intensive ones. At the same time, McKay's (2004) study of three advanced electronic manufacturing firms, located in three privately-run EPZs in the Philippines, and also Lee's (1999) study of the South Korean MAFEZ referred to above, show that automation sometimes results in more intensive work for many individual workers, and that the related forms of work organization may also present a dilemma for workers' organizations and unions.

A number of potentially negative conditions for workers may thus be identified in both types of EPZ (e.g. Carr and Chen, 2004; McKay, 2004), although the extent to which these are specific to EPZ employment, rather than formal employment in general, in the countries concerned remains doubtful:

Labour conditions mainly characterizing labour-intensive EPZs are said to include:

- Payment below national minimum wages
- Low employment security
- Forced overtime and insecure employment
- Repetitive tasks
- Hazardous and unhealthy working environment
- Common use of temporary workers, who are not covered by wage and benefit legislation

Labour conditions mainly characterizing technology-intensive EPZs are said to include:

- Demand for higher labour productivity
- Use of new technologies to identify and penalize worker under-performance

The cases from the Philippines used as a source for the above statements (McKay, 2004; 2006) also suggest that there is an increasing tendency for firms to tap into local socio-political forces outside the EPZ to construct more effective forms of labour control involving close collaboration with local and provincial governments. In this case, this included that the 'Background Investigation Unit' of one advanced electronic company visiting the homes of workers' families before workers are made permanent following six months of initial probationary employment, collecting data on family members, including whether their workplaces are unionized.

If many or all of these conditions are likely to apply outside as well as inside EPZ, one point where EPZ working conditions are likely to compare negatively with non-EPZ ones is labour organization, where evidence points to generally greater restrictions within than outside zones. The literature often states that labour unions in EPZs are highly controlled or repressed by zone authorities and/or employers, leading to particularly low levels of union organisation. This is confirmed by the ILO Committee of Experts on the Application of Conventions and Recommendations (CEACR), which has since 1998 noted discrepancies between ratified conventions and legislation and local practice in EPZs as regards the right to organize and join organizations (e.g. Bangladesh, Dominican Republic, Namibia, Nigeria, Pakistan, Togo), the right to strike (e.g. Panama and Turkey) and collective bargaining rights (e.g. Bangladesh, Dominican Republic, Panama, Turkey). Similarly, a report by the ILO Subcommittee on Multinational Enterprises based on 62 responses from governments and representative workers' and employers' organizations in member states also concludes that labour organization is often particularly problematic in EPZs. The concerns raised include freedom of association and the right to organize and bargain collectively. However, the subcommittee also point out that more research on the matter is needed (ILO, 2007). An academic analysis basing its evidence largely on similar ILO surveys (Romero, 1995) suggests that difficulties in terms of labour standards may be traced mainly to two sources ineffective labour inspection and law enforcement mechanisms, and to host government decisions to

exclude EPZs from national labour regulation as part of the promotion packages they offer firms.

On the positive side, it is sometimes pointed out that EPZs sometimes offer workers in developing countries benefits that would usually not be available to them to the same extent outside the EPZ, such as medical care, though the ILO (2003) has pointed out that such non-wage benefits are mostly found in zones with tight labour markets, as enterprises try to attract and retain workers.

Gendered employment

Recruitment of workers is a service usually offered by EPZ authorities to firms. Basic hiring criteria are typically sex, marital status, age, and educational level. For labour-intensive EPZ firms, this usually translates into mainly recruiting young, single, less-educated women, sometimes below the legal minimum working age. It is commonly estimated that some 70-80% of EPZ jobs are held by women, though this percentage tend to be higher in Asian EPZs, and somewhat lower in Africa - for example 52% in Kenya (Mireri, 2000).

EPZs have in many cases created new and otherwise unavailable employment opportunities for women. They may provide relatively high wage opportunities for those with relatively low levels of schooling (Carr & Chen, 2004). A study based on annual labour force surveys in Madagascar's EPZ (Glick and Roubard, 2006) found the wage gap between men and women in export-oriented factories to be smaller than in the domestic sector. This, sometimes as a result of EPZs, women have been included as paid workers in the global economy, and have become better able to contribute to the household economy. However, the quality of their employment may be questioned. A number of case studies (e.g. Carr and Chen, 2004; Shaw, 2007) and also the ILO (2003) stress that the benefits for individual women are relatively short-lived. There is a relatively high labour turnover in zones due to the "intensive nature of production, cultural factors, use of fixed-term contracts, a lack of human resource development policies and underdeveloped labour relations practices in some zone enterprises" (ILO, 2003: 7).

EPZ employment is also marked by gendered labour market segmentation in most places, since in general men have generally been more likely than women to gain skilled jobs (where wages are higher). Women in EPZs – as well as the rest of the formal sector – therefore earn less than men due to the different types of jobs they possess, and only secondarily because of wage discrimination (Shaw, 1998), though the ILO (2003) has also identified the latter as an issue. Some studies have reported that the wage gap between men and women tends to be currently widening, while the actual proportion of jobs occupied by women in EPZs declines (Shaw, 2007; Carr and Chen, 2004; Reynolds, 1998). This finding may apply to some countries experiencing a heightening of capital-intensity in EPZs - and thus a greater proportion of skilled tasks - but there is little evidence that these assertions apply to EPZs more generally.

Migrant workers

The existing literature on migrant workers is as equally dependent on single-case studies as the rest of the labour literature, and hence equally as difficult to generalize from. The following should therefore be seen merely as providing examples from which issues of concern may be pinpointed.

An issue to which several studies point is that EPZs do not necessarily have much impact on employment in the areas where they are located, but rather attract migrant workers. Migration to EPZs is mostly national (usually rural-urban), though international migration of labour to EPZs also exists. In Sri Lanka, around 80% of the EPZ workforce is rural (Shaw, 2007). According to the existing literature (e.g. Rondinelli, 1987; McKay, 2004) recruitment of rural workers is partly for cost reasons and partly because rural workers are considered more hard-working and loyal, and also less militant. Again however, this is as likely to apply to non-EPZ as EPZ employment.

Due to their large number of migrant workers, most EPZs provide housing in the form of dormitories within or surrounding the zone. While this type of housing may represent a benefit for migrant workers, it is seen by critics as a way to ensure a flexible and ever-available work force for EPZ firms (Romero, 1995; Rondinelli, 1987). Dormitories are often densely populated and fail to meet basic ventilation and sanitary standards. On the other hand, in the Philippines for example, where labour militancy is common, EPZ authorities have generally stopped providing housing for workers with the purpose of reducing worker density and thus making contact with union organizers more difficult. Instead, shuttle busses pick up migrant workers at multiple collection points. Others have become 'bed spacers' in small make-shift boarding houses in the local community outside EPZs. This strategy, which is often devised by the zone authority, has contributed to making union organizing extremely difficult (McKay, 2004).

Conclusion

To summarize, a central point is that though EPZs are considered important in terms of creating jobs and alleviating poverty in developing countries, their actual share of total formal employment is often rather low. On labour conditions, few conclusions can be drawn that specifically apply to EPZ – rather than to formal sector employment in general. However, it may be assumed that since labour organization is commonly repressed in EPZs, it is likely that labour conditions will be worse within than outside certain zones. However, this will depend on the industrial sector and the extent to which national labour laws – and their implementation - stretch to include EPZs.

4.8. Summary

This section has identified and discussed the potential impacts of EPZs on host economies. EPZs' economic impacts may be categorized into static ones (short- to medium-term changes in FDI, export growth and diversification, and employment creation) and longer-term and less direct dynamic ones (such as creation of back-

ward linkages and technology and skill transfer and diffusion). The assessment provided here is based on a review of an existing literature that suffers from a number of shortcomings. These include a lack of general survey material or attempts to collect comprehensive data on EPZs and a predominance of studies that are based on one or few case studies from which little can be generalized. Furthermore, few or no studies compare developments in EPZs with those in their respective economies generally, making it difficult to isolate impacts specific to EPZs. Nevertheless a number of observations may still be made.

1. *FDI*: There are great differences in the volumes of investment into different EPZs. Middle-income countries and countries with large populations appear to attract considerably more FDI to their EPZs than others, and EPZs in Africa generally appear to have attracted very little capital. However there are exceptions to both these observations.
2. *Export growth and diversification*: Where they can be traced, differences on these variables broadly correspond to those reported for FDI. On the other hand, impacts on export growth appear to be generally weaker than they are for FDI, suggesting that in many cases only relatively small gains are generated by EPZs.
3. *Employment creation*: Overall, the number of jobs created in EPZs is rather low compared to the total number of jobs in the formal sectors of the countries for which data is available. Thus, the effect of EPZ development on employment creation is low. Secondly, a number of negative observations have been made concerning employment conditions in EPZs in case studies. The patchy nature of these studies and their failure to compare EPZ with non-EPZ employments makes generalization in this area also difficult however.
4. *Backward linkages*: A provisional conclusion from an uneven collection of case studies is that linkages develop, or fail to, according to the nature of industries and firms attracted to an EPZ and according to the nature of the host economy. Generally speaking, the extent of backward linkages achieved in the NICs seems not to be replicated elsewhere, including in Africa.
5. *Technology transfer and diffusion* related to EPZs is difficult to estimate, though most studies seem to agree that it is relatively low in low-income countries. Most EPZ industries are labour-intensive, and thus less likely to transfer or receive transfer of technology than manufacturing industry generally.
6. *Employee Learning effects and skill diffusion* also appear to be low in EPZs, again as a result of the mainly labour-intensive nature of EPZ industries. Even in cases where more capital-intensive industries have been attracted to EPZs, there is no clear evidence of such effects.

5. Are the assumptions behind Export Processing Zones still valid?

EPZ assumptions

The promotion of EPZs as a developing country policy instrument, aiming at increasing domestic economic growth and improving the national balance of payments on the basis of growth of exports of mainly secondary (manufactured) products, rests on a number of assumptions. These assumptions fall into three broad groups, firstly concerning the relation between export growth and domestic economic growth, secondly about the future of international trade, and thirdly about the specific advantages attaching to EPZs as means of export growth and diversification. The discussion will assume that EPZs aim mainly at promoting the exports of manufactures.

A large majority of economists today accept that export growth, at least when this concerns manufactured goods, is associated with economic growth more broadly. However, it is also recognised that a relatively high rate of export growth has to be recorded before economic growth more broadly occurs, and that even then overall rates of economic growth will not match those of exports. This is because most economies are dominated by non-traded services rather than manufactures, and because changes in trade in manufactures have a number of causes (such as levels of international transport costs and levels of international trade protection) that are relatively independent of the main determinants of economic growth.

Related to this is a recognition that growth in trade is much more volatile than economic growth generally, since the output of products that are traded most (primary products and manufactures) is more variable than of service industries. This raises the issue of the extent to which changes in trade can generate economic shocks as well as economic growth. Here it is generally recognised that at least recent levels of trade volatility do not seem powerful enough in themselves to cause a global economic crisis. Growth in goods trade has gone negative several times since the mid-20th century (most severely in 1975, 1982 and 1957 and most recently in 2001 following the September 11th attacks and the bursting of the dotcom bubble), but global GDP has never gone negative year-on-year over the same period. On the other hand, in given economies where exports account for a high share of GDP, trade slowdown can generate stagnation in or even negative overall growth.

Viewed in this light, it is important to consider the central assumption underlying EPZ promotion, namely that international trade will continue to grow at its recent rapid rate (over 6% per annum between 2000 and 2006). At the same time, it is also worth considering whether recent patterns of growth in international trade in manufactures impart new types of risk for participating countries.

Factors affecting growth in international trade in manufactures

A mixture of exogenous and endogenous factors will determine the future of international trade. The most critical exogenous ones are levels of global demand

and whether a severe recession would also see 1930s-style responses in the form of curbs on trade. The main current threat to global demand comprises financial market turmoil and the associated credit crisis. The extent to which this feeds through into reduced levels of trade generally remains difficult to predict. However, it is important to note that the US, which is the worst effected country, accounted in 2006 for 17% of global imports - or 24% if intra-EU trade is discounted (WTO, 2007).

Probably, the depth reached by an economic crisis in the US will be also the largest single influence on whether a new round of curbs on international trade will be experienced. 1982 was not only the last year that global trade growth fell as low as -2%, but also the year when the largest single number of anti-dumping and countervailing measure actions in the history of the multilateral trading system were introduced.¹⁰ EPZ trade is particularly vulnerable to these since developing country governments often concentrate trade-distorting interventions on treatment of EPZ investors.¹¹

One reason why protectionism is currently less likely than earlier to emerge as a reaction to a global economic slowdown is the nature of the dynamic underlying the changing patterns of international trade. This dynamic may even mitigate the effect of a recession on trade in manufactures itself. The dynamic is that of the reorganisation of production of manufactures in global value chains (Gereffi and Korzeniewicz, 1994; Gereffi, 1995; Feenstra, 1998).

Trade through global value chains

Global value chains (GVCs) are systems whereby the design, production, marketing and consumption of specific products is dispersed functionally on an international basis, according to the factor advantages of different locations and logistical and trade regime considerations. GVCs for specific products are managed by leading developed country firms either through vertical integration of functions distributed between branch plants in different locations, by arm's length contracting between independent entities or by various intermediate arrangements. A change occurring during the 1990s was that organisation and management of GVCs itself became recognised as a strategic asset, especially by North American and UK firms in competition with those from Japan and Europe. The proliferation of EPZs during the 20 years following 1986 (see Chapter 2) reflects not only a widespread process of emulation of emulation by many developing countries of the export-led growth policies of the 'Asian tigers', but also the reality of intensified outsourcing of manufacturing to low-cost areas by large firms in the US and certain parts of Europe.

¹⁰ Almost all by the United States.

¹¹ Here though it should be noted that, while WTO rules permit countervailing measures against the major Asian exporters, they expressly forbid them against many low-income countries (see Chapter 6 and Annex A).

Most attempts to quantify the growth of GVCs do so by measuring the extent of imported inputs as a share of total input use in specific sectors.¹² Studies of this kind show slow but steady growth since the 1970s (Table 4)¹³

Table 4. Share of imported inputs in Developed Country manufacturing

	1972	1974	1977	1979	1984	1990	1992	1993	2001
USA (i)		4.1			6.2			8.2	
USA (ii)	6.5			8.5		11.6			11.0
UK (i)		13.4			19.0			21.6	
UK (ii)							28.0		28.0
Canada (i)		15.9			14.4			20.2	
France (i)			9.0					14.0	

(i) value of imported inputs/manufacturing output (Campa and Goldberg 1997 for US, UK and Canada; Strauss-Kahn 2003 for France).

(ii) value of imported inputs/all non-energy manufacturing inputs (Feenstra and Hansen 1999 for US to 1990; Amiti and Wei 2005 for US after 1990 and UK).

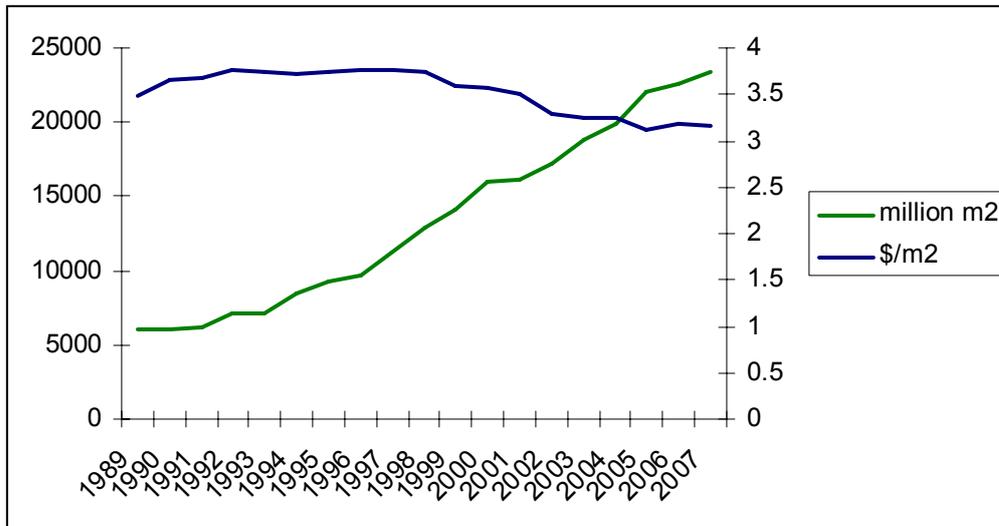
Because not only component production but also final assembly production is increasingly subject to outsourcing, researchers using a GVC approach have recently focused more on examining trends for imports of fully manufactured products to developed countries, rather than trade in components. A few studies of this kind have calculated changes in levels of import penetration in developed countries for specific manufactured products (e.g., Palpacuer et al 2005 for clothing in UK, France and Scandinavia) or have measured changes in the share of the value of imports from developing countries in developed countries' GNI (e.g., Milberg forthcoming). Others have (also) examined developments in the unit prices of full manufactures in sectors exhibiting high levels of import penetration (Milberg, op. cit.). The justification for the latter line of enquiry is that it is assumed firstly, that these sectors will draw in large numbers of developing country manufacturers and hence that they will be characterised by highly competitive supply markets; and secondly, that since high levels of concentration can be demonstrated amongst developed country importers for these goods, vertical buyer-seller relations will become subject to the use of monopsonistic buying power.

Milberg (op. cit.) notes declines exceeding 1% per annum in US unit import prices relative to US retail prices for finished products in consumer electronics, textiles, clothing, footwear, furniture, toys and chemicals over the period 1986-2006. Figure 1 below, prepared by the authors for this study, shows the relation between trends in US clothing imports measured by volume and current unit prices for the period 1989-2006. It bears out Milberg's finding by showing that a large increase in import volume in the second half of the 1990s is accompanied by an absolute fall in current prices.

¹² Other studies measure the share of imported inputs in a country's exports, with similar results (Borga and Zeile 2004).

¹³ Because they rely on national input-output rather than trade data, and because the availability of such data is lagged, few studies of this nature report data from after the mid-1990s.

Figure 2. US clothing imports by volume (million square metres) and current unit price (\$/square metre), 1989-2006



Source: based on US Trade Representative, Office for Textile and Apparel, www.otexa.gov

Opportunities and risks of the development of global value chains

The advantages presented to developing country manufacturers (of components and full manufactures) by the growth of GVCs can be summed up as follows. Firstly, GVCs provide enhanced access to developed country markets, on the basis of demand that reflects not only growth in consumption in these markets but also the replacement of developed country production. Secondly, this implies relative stability of demand, since even a recession in developed countries is likely see declining aggregate demand compensated by increasing import penetration (more expensive domestic products being replaced by cheaper foreign ones). Thirdly, the growth of GVCs makes importers a more powerful constituency in developed countries, thus reducing the likelihood that declining demand will be responded to by new curbs on trade.

On the other hand, the growth of GVCs also gives rise to new types of risk for developing country exporters of manufactures. One applying particularly those operating out of traditional EPZs (see Chapter ??) is that, if international trade indeed does contract, then legally there are no local market alternatives. A second is that, especially where entry barriers are low, real (and possibly also current) output prices are likely to fall even if demand remains constant. Kaplinsky (2005) argues that the ‘fallacy of composition’, whereby international prices are subject to secular decline as a result of an over-supply stimulated by initially high returns, today applies not only to primary commodities but also to a wide range of manufactured consumer goods. In such circumstances, only exporters who are able to command considerable economies of scale (i.e., to compensate lower price by increased volume) will remain profitable.

What is the extent of this problem and to what extent does it compromise the future of EPZ investment? Because the great bulk of international trade data refers only to values and not to volume traded, it is not possible to compute unit prices and thereby rank manufacturing sectors directly in terms of price pressure. However, assuming that the importance of scale economies is an indicator of price pressure, and that developing country export concentration ratios (share of leading three developing country exporters in world exports) can be taken as a proxy for the importance of economies of scale, then an indirect ranking can be proposed of some sectors generally thought to be most represented in traditional EPZ investment and exports (Table 5).

Table 5. Manufacturing sectors ranked by share of leading three developing countries in world exports (%)

	1980	1990	2000	2006
Clothing	17.2	20.1	27.6	37.7
Computers	n/a	n/a	19.5	35.3
Textiles	11.8	18.6	25.7	31.4
Other office & telecom equipment	7.7	14.4	17.5	30.3
Integrated circuits & electronic components	n/a	n/a	21.2	24.7
All manufactures	3.6	7.0	11.0	16.6

Source: computed from WTO (2007)

These considerations indicate that, for all but the poorest countries, continuing growth in manufacturing exports (especially in the sectors referred to in Table 5) will only occur for those that successfully address the issue of competitiveness in ways other than price alone (economies of scope, labour productivity, technological and other forms of innovation, quality, etc.). These are mostly not issues that are addressed in the design of traditional EPZs.

The specific advantages of EPZs as means of promoting export growth and diversification

So far it appears that the first two assumptions on which EPZs are founded – concerning the propensity of developing country trade in manufactures to increase, and the effects this is likely to have on GDP - do remain broadly valid, though with certain qualifications. On the other hand, EPZs' third founding assumption concerning the specific advantages of this type of arrangement as a means of promoting developing country export growth and diversification, will be shown in what follows to be much more problematic.

EPZs in the traditional sense of designated enclaves, where investors benefit from exemptions on import duty for inputs, improved infrastructure and streamlined port clearance procedures, rest on the assumptions that the major domestic obstacles to export growth and diversification are protectionist domestic trade regimes, poor roads, unreliable power supply and customs services that operate primarily as in terms of tax collection.

Two observations can be made concerning these assumptions. The first is that, while probably of considerable relevance to achieving static gains in export growth in the 1970s and early 1980s, they are much less relevant today. The second is that both when EPZs were promoted first, and today, they imply a disregard of other obstacles to growth which are arguably equally or more important.

In relation to protectionist trade regimes in developing countries, the advantage of EPZs was that they enabled exporters to obtain remission of customs duties on intermediate inputs. The marginal advantage of such arrangements diminishes in direct relation to prevailing levels of protection globally. Milner and Kubota (2005) show that, for a sample of 40 developing countries the average overall level of tariffs fell from 30% in 1982 to 12% in 1999, while for a sample of 85 developing countries tariffs and duties as a share of total import value fell from an average of 21% in 1973 to 10% in 1997. Along similar lines, Horn and Wacziarg (2003), updating Sachs and Warner (1995), show that whereas only 14 of a sample of 90 developing countries could be classified as open economies¹⁴ in 1970, 58 could be so defined in 1999.

In relation to infrastructural development and efficiency, the advantage of EPZs was that they enabled quick fixes to lack or poor functioning of national infrastructures. The extent to which the latter are subject to upgrading and increased productivity, the more this advantage is also eroded. Table 6 presents time series data on four indicators in this area for the countries whose EPZs were used as a sample for the discussion of impacts in Chapter 4.2 – 4.3.

¹⁴ The authors concerned define a closed economy as one where at least one of the following is true: Non-Tariff Barriers cover 40% of trade; average tariffs are 40% or higher; official exchange rates depreciated by 20% or more of parallel rates in the 12 months before the years in question; and a state export monopoly exists.

Table 6. Changes in infrastructural development and efficiency, selected developing countries

	Electric power use (KWh per capita)			Fixed line and mobile phone subscribers (per 1,000 persons)			Km. paved roads/km. all roads (%)			Rail freight ton/km of rail line		
	1980	1990	2004	1980	1990	2004	1990	2000	2004	1980	1990	1999
H. Kong	2157	4178	5699	253	457	1740	100	100	100			
UAE	5623	8766	11331		243	1128	94					
Lebanon	940	511	2499		144	429	95					
Jordan	399	1050	1602	28	78	423	100	100	100	355	711	622
Mexico	890	1295	1838	40	65	554	35		50	4133	3641	4687
Namibia			1389	29	38	206	11			1075		
Tunisia	402	638	1157	18	37	497	76	68	66	1698	1820	2364
Mauritius				24	55	731	93	97	100			
Indonesia	44	161	478	3	6	185	45	57		1000	3190	4960
Egypt	377	683	1215		29	235	72		81	2190	2828	3464
Pakistan	128	277	425	4	8	63	54	56	65	7918	5709	4447
Philippines	368	360	597	9	10	446	54	56	65			
Malawi				2	3	25	22			234	235	77
Togo	61	87	87	2	3	67	21					
Nigeria	73	92	104		3	79	30		15	822	235	54
Kenya	96	116	140	5	7	85	13	12	14	2281	1919	1111
Bangladesh	19	49	140	1	2	26				787	651	896

Source: World Development Indicators (World Bank); UIC (International Union of Railways), International Statistics, various years

It is clear that for the sample, except the African countries, there were significant improvements on at least three of the four indicators used. Only one country (Nigeria) witnessed a declining performance on more than one indicator.

Turning to customs environments, it is more difficult to find recent time series data, especially by country. The most relevant data series available is probably UNCTAD's on maritime transport costs. Variations in the latter reflect not only the geographical proximity (or lack of it) of major trading partners and transport economies of scale (i.e. they fall in line with trade volumes) but also differences in port administrative costs, downtime in accessing ports and efficiency of customs services. The last three of these variables comprise a mixture of infrastructural efficiency and customs environment factors. Maritime transport cost data has been collected for developing countries since 1990 (Table 7), but only on a regional basis.

Table 7. Developing country maritime freight costs as a proportion of import value (%)

	Asia	Latin America	Africa
1990	9.2	6.0	9.4
2000	6.8	5.0	9.6
2005	5.9	4.4	10.0

Source: UNCTAD Review of Maritime Transport, various years

Again the data shows significant improvements in all developing country regions except Africa.

In this way, EPZs in their traditional guise are subject to a systematic process of advantage erosion – paralleling the process of erosion of developing countries’ market access preferences (Francois, Hoekman and Manchin, 2005). Moreover, again as in the case of market access preferences, it is difficult to identify new advantages that could be granted within traditional EPZ frameworks that would compensate for the resulting decline in static gains. The process of eroding infrastructural and customs environment advantage has been markedly less pronounced in Africa, however. EPZs may thus remain associated with some temporary static gains in this geographical context, although even here their advantages in terms of bypassing domestic trade regimes has eroded. Moreover, the opportunity cost of supporting EPZs needs to be weighed carefully: are there other types of intervention where the same investment of finance, human capacity and ‘policy space’ would yield better outcomes for economic growth?

Against this background the final objection, which can be raised against EPZs in their traditional form, may be considered. This is that they assume away the importance of obstacles to export growth and diversification other than those resulting from protectionism, poor infrastructure and inefficient or inappropriate customs procedures. Today it is almost universally acknowledged that the major obstacles to export growth and diversification lie in the nature of broader environments for investment – not only foreign but also domestic.

The exact content of optimal broader environments will differ from country to country depending on its level of development and its geographical and political constraints. But in all cases it will certainly include macro-economic stability, a trade regime adjusted to the realities of global value chains, a pragmatic rather than generally restrictive investment environment and some targeted interventions addressing supply-side constraints and/or factor cost competitiveness issues.

6. Export Processing Zones and trade rules

Certain incentives typically applying to EPZs and similar schemes have been inconsistent with multilateral trade rules since the adoption of the Agreement on Subsidies and Countervailing Measures (SCMs) at the conclusion of the WTO Uruguay Round in 1995. In addition, some governments sponsoring EPZ schemes have required investors to fulfil certain qualifying conditions that are inconsistent with the WTO Agreement on Trade-Related Investment Measures (TRIMs), dating also from 1995. This Chapter describes the types of EPZ incentives and qualifying conditions that are WTO-incompatible and the derogations granted by WTO in relation to the relevant rules. Finally, it briefly discusses the status of EPZs in relation to the rules governing bilateral and regional trade agreements.

EPZ and WTO rules

The SCMs Agreement covers trade in goods¹⁵ and its objectives are to distinguish between trade distorting and other subsidies, and to outlaw or restrict the former. Two main categories of trade-distorting subsidies are identified; export subsidies and subsidies encouraging import substitution. In both cases subsidies in the form of direct government contributions, loan guarantees at non-commercial rates and credits for direct taxes are outlawed. Specifically in relation to export subsidies, concessional rates applied to general infrastructure (but not to other public services such as rail transport), duty drawbacks on imported raw materials and components (but not on capital or transport equipment, or on construction materials), some exemptions from indirect taxes such as VAT, and provision of fast-track customs clearance procedures are all implicitly *permitted* as incentives.

The Agreement included a provision on Special and Differentiated Treatment for developing countries. In relation to export subsidies, LDCs and other developing countries with GNP per capita of \$1000 per annum or less are exempted indefinitely from all requirements (subject to graduation). A number of other developing countries were given until 2003 to conform to the Agreement, subject to graduation prior to this date from this category on the basis of a product export competitiveness criterion. Subsequently, the derogation applied to this last group of countries has been extended twice and will now end in 2015. Meanwhile, a few developing countries whose GNP per capita levels rose above \$1000 between 1995 and 2007 were transferred from the first to the second type of derogation between 2003 and 2007, and new graduation rules were introduced.¹⁶ Those countries due to phase-out their export subsidies by 2015 must present a plan to this effect to WTO by the end of 2010. In all, around 65 of a total of 155 WTO members currently enjoy on or another type of derogation.

¹⁵ The Agreement did not apply to agricultural subsidies until 2003, provided that these were in conformity with the WTO Agreement on Agriculture (the so-called 'Peace Clause'). It has never applied to services. There is general agreement within the WTO that there is a need for 'information exchange' on subsidies related to services, as well that a definition of such subsidies is included in the rules of the General Agreement on Trade in Services, but progress in these areas has been very slow (see WTO JOB (08)/5).

¹⁶ A list of non-LDCs presently covered by the derogation is given in Annex A.

Where qualification for export subsidies requires benefiting firms to use a fixed share of local raw materials or components, or to export goods of a higher value than those of the imports they consume, or to earn more foreign exchange than they expend on imports, the relevant regulations contravene the WTO TRIMs Agreement.¹⁷ There were derogations for developing countries and LDCs also in relation to this agreement, but these have now expired.

While under WTO rules countries with EPZs have no option but to remove all performance requirements of the types described, they can in practice retain all types of export subsidy provided that they relax the requirement that goods produced with such subsidies *must* be exported. They may, for example, allow ‘import’ of finished goods or inputs from the EPZ to the domestic market, against the normal rate of import duty for the good or input in question. Nonetheless, since so many developing countries wish to continue benefiting from derogations, it seems that there a large number of countries that cannot afford either to subsidise all producers irrespective of their end market, or to compensate industries which were promised subsidies in perpetuity (or for 20-30 year periods) when initially investing in EPZs.

EPZs and bilateral/regional trade agreements (RTAs)

EPZs create anomalies for RTAs since technically EPZs do not fall within the customs territory of the signatories to such agreements. This implies that, if special provisions are not made, RTAs create incentives for EPZ firms to gain advantage over domestic producers in their host country by transshipping goods to the domestic market through the territory of another signatory. Solutions to this problem include writing into RTAs the obligation that RTA partners levy duty on imports originating in each others’ EPZs. However, as Engman, Onodera & Pinali (2007) show, many RTAs (including Mercosur and the US-Israel FTA) lack such provisions.

¹⁷ Engman, Onodera & Pinali (2007) give examples of such contraventions in EPZ contexts.

7. Comparing the effectiveness of Export Processing Zones and support to other means of promoting economic growth

The purpose of this section is to consider the effectiveness of EPZs in comparison to other domestic policy interventions that may be used to realise EPZ-type objectives – namely, growth of non-primary sector exports and industrial sector employment. This question immediately raises the spectre of an important general problem. Our understanding of the deep determinants of growth in developing countries remains weak. As Pritchett puts it: “The rule of growth in developing countries is that anything can happen and often does” (2000: 247). In many ways our knowledge of growth processes is asymmetrical – policies (or pathologies) that often undermine growth are well recognised; however, the interventions that can stimulate growth in any specific instance are less well understood. Many scholars note that the most successful modern developing countries have pursued heterodox and locally adapted policies rather than a formulaic blueprint (Hausmann et al., 2004). This indicates that a definitive comparison of the effects of EPZs versus other policies is likely to be problematic. To put it another way, if a definitive answer was possible then the debate over the usefulness of EPZs (or other policies) already would have been resolved.

Given the above, what can be said about EPZs? Two inter-related strands of growth literature are informative. While they do not provide any general answers, they do suggest a set of framing questions that can help move towards a more nuanced analysis of the suitability of EPZs in any given country. The first strand follows from the literature around poverty traps. Collier (2007) argues that many of the poorest countries are stuck in one (or more) of four principal poverty traps. These are associated with conflict, natural resources, poor governance (in a small country) and being landlocked (with weak neighbours). The appropriate policy response differs with each of these; however in no situation would it appear that EPZs alone provide a ‘silver bullet’. In many cases, improved governance is seen to be a *sine qua non* for sustained development. This is exemplified by the case of Madagascar where EPZ growth in the late 1990s (see Chapter 4 above), was significantly retarded by fall-out from disputed elections that led to a blockade of the port for over eight months. In other cases, specific interventions may be necessary *before* EPZs can be considered viable. For example, considerable investment in regional infrastructure may be necessary to support landlocked countries gain access to world markets on a competitive basis. The argument here, then, is that the validity of pursuing EPZs must be considered within the wider framework of growth challenges as well as complementary reforms necessary to break any ongoing poverty trap.

A similar argument can be made from the ‘growth constraints’ literature associated with Dani Rodrik (see Hausmann et al., 2004). Following from the general observation that development successes are highly idiosyncratic, the argument is that domestic policy responses should be designed on a case-by-case basis in order to loosen binding constraints to growth. These constraints are typically categorised into factors that: (i) undermine returns to domestic economic activity; and (ii)

generate high financing costs. According to the diagnostic approach, EPZs may be justified under specific circumstances but are unlikely to be an adequate solution to more generalised problems in the domestic economy. Thus, static gains can be realised from EPZs if domestic conditions are extremely uncompetitive and where these operate as primary barriers to investment by foreign or local firms. For example, low returns may be due to an inefficient tax system, corruption at border posts and high transport costs due to weak infrastructure. All these can be tackled via an EPZ strategy. Also, EPZs can provide a means to experiment with different policy regimes and, thereby, demonstrate (politically) that reforms would be beneficial on a wider scale.

However, the realisation of static gains does not imply EPZs will provide an on-going, dynamic contribution to economic development. It is widely recognised that certain minimum domestic conditions must be fulfilled for economic growth to 'stick'. The literature on sustained growth episodes (e.g., Hausmann et al., 2005) suggests stable and robust political and macroeconomic conditions are essential in this regard. Openness to external markets, investment in human capital (education) and business-friendly institutions are all associated with improved growth performances over the longer-term. It also is valid to note that in order to attract mobile international capital, domestic factors of production must be competitively priced and available in sufficient quantities to meet demand. This refers mainly to labour, but also to core inputs such as energy, fuel and water. Where supplies are unreliable or inelastic then large-scale demand changes may distort markets (prices), leading to potential problems either in domestic markets or for (new) EPZ investors. The manufacturing export successes of many Asian countries have been facilitated, at least in part, by large pools of low and semi-skilled labour that have enabled wages to remain low. In contrast, Sub-Saharan Africa is noted more for its high land to labour ratio and, in some instances, has comparatively higher urban low-skilled wages than found in South Asia.

What this means is that where more general growth preconditions are not found, including access to domestic factors of production at competitive rates, then any broad or sustained contribution to growth from EPZs may be minimal. Thus, for low-income developing countries with weak conditions for domestic businesses, it may be prudent to set the wider political and economic conditions on a more secure footing prior to investing in EPZs. Of course this suggests a paradox – if these broader business conditions are attractive then an EPZ is least 'needed'. Unfortunately, this seems to be borne out by the evidence. Larger and more stable lower- and upper-middle income developing countries have been most successful with EPZs, at least partly through adjusting the latter's objectives and incentive structures to realise dynamic gains. Low-income countries with extremely weak domestic manufacturing sectors (as per much of Sub-Saharan Africa) have shown least success with EPZs in a dynamic sense. The consequence of this paradox is captured by the theoretical consensus among many economists that where general business conditions (or economic governance) are poor, EPZs are very much a 'second best' policy response compared to 'first best' solutions that directly address factors that inhibit export growth (e.g., Madani, 1999; Engman et al., 2007).

Despite the above, it is important to highlight that precisely what the minimum preconditions for growth are, or where reform priorities might lie is unclear. For example, is maintaining inflation under 10% more important than establishing a stable and credible exchange rate regime (there is often a trade-off between the two objectives)? Secondly, although these conditions may be necessary for growth they are not sufficient. Consequently, there remains considerable debate over the suitability of targeted industrial policies in lower income countries.¹⁸ Advocates suggest that the existence of substantial externalities in industrial development associated with credit market imperfections, knowledge spill-overs and agglomeration economies provides at least a strong theoretical for targeted interventions (Rodrik, 2007). The point is that static investment (taxation) incentives alone are unlikely to induce (domestic) innovation and experimentation in new technologies. For this reason, a host of complementary policies which reward good performers *and* weed-out poorer ones may be appropriate. This suggests a more adaptive and dynamic policy stance may be necessary, in comparison to the passive ‘reduce costs to businesses’ philosophy underlying traditional EPZs. Policies that have been proposed here include targeted credit subsidies, sectoral development banks (to provide venture capital) and institutional arrangements that promote technical learning and knowledge sharing.

Of course, the argument against such policies is that evidence for their efficacy is ambiguous and (developing country) governments are prone to capture and policy failure.¹⁹ In this vein, it remains pertinent to reflect on whether generalised or highly specific policy interventions are appropriate in any given case. Where government capacity is weak and the state has limited political autonomy to move decisively in the economy (e.g., apply performance-related incentives) then more general as opposed to specific policy interventions may be preferable. The latter policies are those that tend to benefit all agents rather than those in specific sectors. These are less prone to political manipulation or rent seeking and allow the play of market signals to direct economic activity across sectors (Bjorvatn and Coniglio, 2006). In the domain of export promotion, both modest trade liberalization and maintenance of the exchange rate at a credible and competitive level would be relevant. The latter has been associated with export successes in a number of Asian countries such as Indonesia and China. However, regardless of whether targeted or general policies are deemed suitable, the salient issue is that EPZs cannot be seen as isolated or one-off instruments. Rather, for dynamic gains to be possible they must be part of a broader and complementary policy environment.

Finally, it is important to emphasise that even the best of domestic policies may have modest results where external conditions are not favourable. In this regard the widespread use of EPZs across the developing world suffers from a classic fallacy of composition problem. If only one country has an EPZ then its investment conditions may be more attractive than its peers. However, the larger the number of

¹⁸ For arguments in favour, see Rodrik (2007); for arguments against, see Pack and Saggi (2006).

¹⁹ In other words, and analogous with stock market investment, just because some countries have been able to ‘pick’ industrial winners it does not mean that all countries should try and do so.

countries that establish EPZs then the marginal advantage of having an EPZ diminishes. Secondly, it has been argued that external trading conditions and global value chain dynamics have been crucial to EPZ successes (and failures). The importance of these factors leads Collier (2007) to argue that Sub-Saharan Africa requires protection from low income Asia for significant and sustained export diversification success to occur. This is because Asia has successfully developed large agglomeration economies that support significant spatial economies of scale in manufacturing. In the absence of long-term trade preferences being allocated to Sub-Saharan Africa, then these economies simply may not be competitive for large-scale manufacturing development even where EPZs are established and/or other reforms are undertaken.

To summarise, no general comparative position on EPZs can be taken. This reflects our weak state of knowledge not only as regards EPZs but also the extent to which other policies support developmental outcomes. Static gains from EPZs are plausible under certain conditions, but where they represent an isolated ‘vent for surplus’ rather than forming part of a broader economic strategy then their dynamic contribution to growth is likely to be weak. What seems to matter for manufacturing development is purposive experimentation with local policies and institutions to address market externalities. This may require a pro-active public policy stance based on an incentive regime that provides both ‘carrots’ and ‘sticks’ for specific sectors. Indeed, comparatively successful emerging economies in Asia have actively engaged and adapted export promotion policies, progressing along the continuum from traditional EPZs towards more modern EGDs. In this vein, and assuming the final objective is to boost long-term growth, a number of diagnostic questions can help ascertain whether EPZs should form part of a comprehensive growth strategy. These imply the need for a deep understanding of the developmental context (economic and political) in which an EPZ may operate. The questions are:

- Would the establishment of an EPZ address key growth challenges (loosen binding constraints) and – if so – how should it be designed?
- Are external conditions favourable to export-led diversification in relevant manufacturing sectors?
- Are minimum conditions for longer-term EPZ success, including complementary reforms, in place?
- Are specific (i.e., EPZ) versus generalised growth-oriented policies advisable?

In some cases the process of answering these questions may lead to a decision in favour of establishing EPZs as part of a broader development strategy. However, it is more likely that a range of other reforms may be necessary before EPZs become feasible policy tools. Also, even where minimum growth preconditions are met, ‘new’ industrial policy instruments may prove more cost-effective given their dynamic character. Certainly, the combination of the extensive use of EPZs across the developing world alongside their very mixed performances suggests that a more selective and diagnostic approach to EPZs is required.

8. Conclusions

Arriving at firm conclusions about EPZs is extremely difficult both as a result of their high degree of variation in design and because of the absence of systematic surveys. The great majority of studies deal only with a single EPZ or a small group of them. Cross-model, cross-generational and cross-regional studies are absent. This is reflected in the lack of comprehensive data on even the more quantifiable EPZ impacts. Moreover, no rigorous empirical analysis is available comparing EPZs with other types of intervention aimed at supporting export growth and diversification. Having said this, a literature review combined with a mining of the limited data sources available suggests some provisional conclusions.

It seems clear that the advantages of EPZs in their traditional form of closed-off zones where investors enjoy different types of preferential treatment over those available in host economies generally (e.g., rebates on duties for imported inputs and raw materials, subsidized access to enhanced infrastructure, fast-track customs treatment, etc.) have been subject to steady erosion. These advantages depended on developing country economies being generally characterised by high levels of trade protectionism, patchy and unreliable infrastructure and customs departments whose basic orientation was toward collecting taxes. In other words, EPZs' traditional advantages rested on developing countries unfavourable business environments and lack of modern infrastructure.

Where these conditions applied quite widely (e.g., in East Asia as late as the second half of the 1970s) and where only relatively few countries initiated EPZs, the latter could generate substantial static effects.²⁰ However, since the 1980s first mover status no longer applies, developing country trade barriers have fallen, developing country infrastructure has steadily improved and many developing countries have adopted trade facilitation reforms. At the same time, industrial policy in the East Asian countries has moved on, so that even where export growth and diversification schemes are still called EPZs they bear little resemblance to earlier models.

EPZs in their traditional form may still generate some static short-term effects in regions that lag behind in trade policy reform, infrastructure and business environment. But even here the static gains in question are likely to be weaker and more short-lived than in other regions in earlier periods. This partly reflects the general leveling-up just described, but also the fact that so many countries now offer rather favourable regimes for foreign investment. Partly as a result, there is also now greater competition than ever in end markets for the manufactured products typically exported from traditional EPZs. In any event it is unlikely that whatever static effects can be generated through EPZs can be consolidated domestically in this type of country, unless the host economy's broader policy environment and other constraints to growth are tackled.

²⁰ Evidence on their dynamic effects is sparse; probably, for this generation of EPZs they were not great.

On the other hand, in developing countries whose growth and economic diversification (including export growth and diversification) has proceeded faster and more successfully, but which are now struggling to remain competitive in labour-intensive manufacturing, the main challenge is to combine appropriate macro-economic policies with policy instruments that encourage technological upgrading and innovation. New generations of EPZs include some such instruments, which allow static gains to be complemented by dynamic ones. However, these are typically applied in ways – for example, through availability to all investors and not simply new or foreign ones – that depart from traditional EPZ principles.

In other words, while the historical successes of Asian EPZs supports the argument that there are some circumstances in which EPZs in their traditional form are a first-best option, there are substantial grounds for considering them second-best or even irrelevant in almost all contexts today. On the one hand this is because the structural conditions for their early successes have been eroded, pointing to the importance of tailoring specific packages of policies, institutions and infrastructure investment according to the circumstances of specific (groups of) countries. On the other it is because, where new generations of EPZs record notable successes, this is as a result of building on generally favourable environments with targeted interventions aimed at mitigating constraints to technological adaptation and innovation.

In Sub-Saharan Africa, where most countries still fall short in respect of favourable policy and institutional environments and infrastructure, EPZs may be inadequate as a means of enhancing trade competitiveness even when more fundamental problems are being tackled as well. Certain commentators (Collier 2007) now argue that only specially enhanced market access concessions by developed countries will enable these countries to compete on a better footing with Asian ones in markets for manufactures and processed agricultural products.

Annex A: WTO members exempt from application of the export subsidy provisions of the WTO Agreement on Subsidies and Countervailing Measures (as of February 2008)

(a) Exempt as LDCs, indefinitely or until graduation

Afghanistan
Angola
Bangladesh
Benin
Burkina Faso
Cambodia
Central African Republic
Chad
Congo, Democratic Republic of
Djibouti
Gambia
Guinea
Guinea-Bissau
Haiti
Lesotho
Madagascar
Malawi
Maldives
Mali
Mauritania
Mozambique
Myanmar
Nepal
Niger
Rwanda
Sao Tome & Principe
Senegal
Sierra Leone
Solomon Islands
Tanzania
Togo
Uganda
Zambia

(b) Exempt as countries with GNI per capita <\$1,000, indefinitely or until graduation¹

Bolivia
Congo, Republic of
Côte D'Ivoire
Ghana
Kenya
Honduras
India
Kyrgyz Republic
Mongolia
Nigeria
Pakistan
Papua New Guinea
Sri Lanka
Zimbabwe

(c) Other developing countries with derogations until 2015 only

Antigua & Barbuda
Barbados
Belize
Costa Rica
Dominica
Dominican Republic
El Salvador
Fiji
Grenada
Guatemala
Jamaica
Jordan
Mauritius
Panama
Papua New Guinea
St Kitts & Nevis
St Lucia
St Vincent & the Grenadines
Uruguay

¹ A few countries on this list had GNI per capita of more than \$1,000 per annum in 2008, but not when the criteria was devised, and so far have not been officially graduated from it. Bolivia, Honduras, Kenya and Sri Lanka have reserved the right to join list (c), should they be graduated from list (b) prior to 2015.

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