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**PERFORMANCE OF EXPORT PROCESSING ZONES:
A COMPARATIVE ANALYSIS OF INDIA, SRI LANKA AND BANGLADESH**

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MARCH 2005



INDIAN COUNCIL FOR RESEARCH ON INTERNATIONAL ECONOMIC RELATIONS

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Foreword

This study 'Performance of Export Processing Zones: A Comparative Analysis of India , Sri Lanka and Bangladesh' was funded by the South Asian Network of Economic Institutes (SANEI).

Export processing zones have been in existence for decades but have attracted renewed attention in recent years. However, their success in promoting trade across countries is mixed. This study aims at analysing the factors that are crucial for the success of the zones. It covers three South Asian countries, namely India, Sri Lanka and Bangladesh. The study explores different aspects such as the quality of governance, incentive packages and infrastructure facilities offered by the zones. It examines the determinants of investment and export performance empirically within the theoretical framework provided by the new growth theories. Neutralization of dis-incentives, infrastructure and good governance, along with the overall investment climate in a country are found to contribute to the success of its zones. The paper, therefore, reinforces earlier recommendations that call for the removal of red tape and bureaucracy better.

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1. Introduction*

In this current era of globalisation, export promotion is seen as an important policy for economic growth in developing countries. Various measures are being adopted to promote export competitiveness by governments in these countries. As a policy means of achieving this goal, the concept of export processing zones (EPZs) has gained noticeable significance in recent years. There were 176 zones across 47 countries in 1986. By 2003, the number of zones increased to over 3000 across 116 countries (Table 1.1). A large number of them are operating in developing countries.

Table 1.1 Estimates of EPZs

	1975	1986	1995	1997	2003
Countries	25	47	73	93	116
Zones	79	176	500	845	>3000
Employment (million)				22.5	42.0

Source : WEPZA

Existing studies have shown that EPZs have helped promote foreign direct investment and an export-oriented industrialisation strategy in many developing countries in Asia (OTA 2003), Latin America (Ferrerosa 2003, Armas and Sadni-Jallab 2002) and Africa (Tekere 2000, Subramaniam and Roy 2001). One may however observe that some countries have been able to capture the dynamic and static gains from an EPZ operations while many others have not. EPZs for instance, contributed 71% of the total exports in Mauritius (Madani 1999) while in Mexico,

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Maquiladora's contribution in total exports has been around 40% (EXIM, 2000). In Sri Lanka and Bangladesh EPZs contributed 25% and 17% of total exports respectively, in 2003 while in India the export share of EPZs was less than 4% in 2002. Performance of the EPZs varies not only across countries but also across zones. In China for instance, Shenzhen is highly successful in attracting FDI and promoting exports while Hainan has had a limited success (OTA 2003). In Tunisia, another highly successful example of EPZs, Bizerte zone is more successful than the Zarzis zone. In Bangladesh, Dhaka and Chittagong are highly successful while Ishwardi could not attract any unit even after four years of its establishment. Against that background, the present study aims at analysing the factors crucial for the success of the zones. While much of the debate in the literature has focussed on the issue of establishing the role of the EPZs, little attention has been paid to the issue of allowing them to play that role fully. Though there have been case studies to analyse successes and failures of the zones (Watson 2001, Subramanian and Roy 2001, Madani 1999, Hinkle et al. 2003, Ferrerosa 2003, OTA 2003) few have attempted to empirically analyse the factors critical to the zone success in a comprehensive framework . This study is an attempt to fill this gap.

The study focuses on the performance of EPZs in South Asia and covers three South Asian countries, namely India, Sri Lanka and Bangladesh. Four South Asian countries, namely Nepal, Bhutan, Maldives and Pakistan have been excluded from the analysis. While the former three do not have EPZs, Pakistan had been having one operational EPZ at Karachi till recently. Other EPZs at Peshawar, Risalpur and Saindak have become operational only recently¹. It was therefore considered appropriate to focus on India, Bangladesh and Sri Lanka. While analysing the performance of the zones, the study focuses on two indicators of the EPZ performance namely, export performance and the participation of foreign direct investment. Though EPZs in developing countries have a wide range of objectives (Madani 1999) including, attracting FDI, promoting foreign exchange earnings, expanding employment, creating linkages with the domestic economy, transmitting new technologies and improving acquisition of skills by the national work force etc., we shall argue that (see also, Kumar 1989) promoting exports and attracting FDI are two major objectives of the EPZs.

¹ The government has planned to set up 19 more EPZS across the country.

Primary objectives of the study are three fold. It will

- examine domestic and foreign investment trends in EPZs across the three South Asian countries;
- analyse export performance of these zones using various indicators and
- examine the determinants of export performance and investment in the zones.

The study also analyses in a comparative framework,

- the evolution of the EPZ policy across the three countries,
- governance,
- incentive package and
- the provision of infrastructure facilities in the zones across the three countries.

The study uses both primary and secondary data. We conducted primary surveys across all the zones in India and selected zones in Bangladesh and Sri Lanka. The main purpose of these visits was to interview the zone authorities and a cross section of the entrepreneurs to solicit their views on different aspects of investment climate in the zones and to get their perceptions on the determinants of investment climate in them. The primary survey based analysis was supplemented by a secondary data based econometric analysis. The secondary data was collected from the Board of Investment (BOI) for Sri Lanka, Bangladesh Export processing Zones Authority (BEPZA) for Bangladesh and The Ministry of Commerce (MOC) for India. The compiled data provides information on such key variables as exports, investment, employment etc. Besides, data on the overall/ regional economic environment was collected from various official documents.

This report is planned as follows. To begin with Section II explores different perspectives on the economics of zones. Section III briefly describes the evolution of the EPZ Policy in India, Bangladesh and Sri Lanka. Sections IV to VI examine the quality of governance, incentive packages, infrastructure facilities offered by the zones across the three countries in a comparative analytical framework. Section VII provides a comprehensive analysis of the FDI inflows and

export performance of the zones in India, Bangladesh and Sri Lanka using the available information. Section VIII then discusses the theoretical framework for the empirical analysis of the determinants of the variations in the FDI inflows and export performance. Section IX then reports the results based on primary surveys and empirical estimates. Finally, Section X concludes the analysis and draws policy implications.

2. Theory of EPZs

The standard definition applied by international organisations (see, World Bank 1992 and UNIDO 1995) states that an Export Processing Zone (EPZ) is an industrial area that constitutes an enclave with regard to customs' tariffs and the commercial code in force in the host country. Traditionally therefore the concept of EPZs evolved to compensate for anti-export-bias created by the import substitution industrial (ISI) policy regime. An ISI strategy creates an incentive structure, which tends to be biased against the export sector. The over valued exchange rate coupled with high tariffs and quantitative restrictions (QRs) makes production for import substitution significantly profitable relative to production for exports. Attempts to promote export industry within an import substituting regime therefore requires countervailing fiscal measures such as duty drawbacks, cash compensation or import replenishment licenses to offset the effects of these disincentives. The policy of EPZs evolved out of this concern of providing special incentive package to offset the anti-export bias and promote exports. In the neo classical theory therefore EPZs are considered as the second best policy choice consisting of compensating for one distortion (import duties) by introducing another (a subsidy). This would however mean that the relative attractiveness of the system declines under free trading regime (Madani 1999). On the contrary, the recent experience shows that the adoption of export-led growth strategies by developing countries has led to a considerable increase in the number EPZs across the world. The traditional or the orthodox perspective of EPZs thus fails to explain the recent proliferation of EPZs in developing countries.

The growth of EPZs in export oriented regimes may be explained within the realm of new growth theory, neo institutionalism and the developmental state theory evolved in the 1980s (Baissac, 2003). These theories reaffirm that economic, social and political institutions have a

key role to play in the development process. In contrast with advanced economies, developing countries face a chronic lack of capable institutional actors. Economic development can only result from state-led policies designed to address the numerous production failures and bottlenecks that characterise the economies of underdeveloped countries. EPZ is one such state led policy. EPZs are benefited, apart from general fiscal and non fiscal concessions to firms, from the following :

- Location-specific advantage
- Modern and efficient infrastructure
- Better governance due to single window facilities to ensure corruption and red tape free business environment

EPZs thus make up for infrastructural deficiencies and procedural complexities that characterise developing countries and offer a more conducive investment climate. Trade related infrastructure and institutional framework are generally deficient in these countries. Besides, too many windows in the administrative set up, bureaucratic hassles and barriers raised by monetary, trade, fiscal, taxation, tariff and labour policies further increase production and transaction costs of exports. Since country-wide development of infrastructure is expensive and implementation of structural reforms require time due to socio-economic and political realities, export processing zones (EPZs) are considered an strategic tool for the promotion of exports in these countries (see Mondal 2001 also). According to this modern view, the EPZ offers quality infrastructure and hassle free business environment permitting an economy to promote and diversify exports and develop a competitive industrial base.

However, given the limited technological and marketing capabilities of developing countries, the zones may not affect exports substantially unless they attract FDI also. Due to easy access to proprietary technology of their parents and international marketing network, MNE affiliates are likely to be more competitive in international markets. According to an estimate (see UNCTAD, 1999) two-third of total world trade was accounted for by MNEs in 1996; over a third was intra-MNE. Furthermore, in this era of globalization, they are restructuring their operations to avail economies of scale and scope by internalizing the economies of specialisation

through the integration of assets, production and marketing activities across countries to advance the core competencies in the global markets (see Aggarwal 2002 for discussion). They are locating different stages of production in different countries according to factor costs and capabilities and / or distributing similar production activities across affiliates in countries with similar capabilities to reap scale economies. The vision of EPZs in an export oriented regime is to establish a viable internationally competitive platform that is capable of attracting export oriented FDI to promote exports.

The new theories also stress the possible external effects generated by EPZs that may take the form of learning, human capital development, demonstration effects and so on (Johansson 1994) and accelerate the process of industrialisation of developing countries. The EPZ, in the new theoretical framework, is both a catalyst for fast learning for all major national stakeholders (policy makers, entrepreneurs and labour) and a pioneer in the attraction of export oriented FDI and promoting exports.

Competitive advantages of EPZs may also be explained within the framework of the cluster approach (Porter 1990). EPZs are industrial clusters of companies that are concentrated in a geographic region. These companies share economic infrastructure, a pool of skilled human capital, and governmental and other institutions that provide education, specialised training, information and technical support. Also, these companies may co-operate to create joint companies, distribution agreement, technology transfer agreements and common manufacturing agreements. External economies of scale and other advantages of the cluster help the operating firms in reducing costs, acquiring competitive advantages and attracting foreign direct investment (Dunning 1998).

To sum up, new theories developed since the 1980s posit that EPZs play a crucial initiating role in the development of national industrial capacity by: 1) offering a platform for internationally mobile productive units, 2) creating an environment conducive to promote investment and exports, 3) initiating a shift in the orientation of the domestic private sector toward export activities, 4) leading government to adapt a more proactive and responsive attitude toward private sector's requirements of regulatory and administrative efficiency.

3. Evolution of the EPZ Policy : A Comparative Analysis of India, Bangladesh and Sri Lanka

3.1. India

India initiated the process of industrial growth in 1948 (immediately after the political independence), when it announced its first Industrial Policy Resolution, IPR 1948. The strategy adopted was one of import-substitution industrialisation across all sectors. Within an ISI policy framework, export promotion had also been a concern of the government. Thus, attempts to promote the EPZ as an export platform on the basis of economic incentives, such as the provision of better infrastructure and tax holidays became a feature of Indian development. The first zone was set up in 1965. The country has had four phases in the evolution of the EPZ policy since then. Following is a brief overview of the evolution of the EPZ policy in India through these four phases.

3.1.1. Initial Phase : 1965-1985

The first zone was set up in Kandla in a highly backward region of Kutchh in Gujrat as early as in 1965. It was followed by the Santacruz export processing zone in Mumbai which came into operation in 1973. There was however no clarity of objectives that the government wanted to achieve. Kandla and Santacruz EPZs were set up with different sets of objectives (Tondon Committee, 1980). Operationally, an overall inward looking trade policy with umpteen controls and regulations influenced the EPZ policy also (Kundra 2000). The policies were rigid and the package of incentives and facilities was not attractive. Zone authorities had limited powers. There was no single window facility within the zone. Entrepreneurs had to acquire individual clearances from various state government and central government departments. Day-to-day operations were subjected to rigorous controls. Custom procedures for bonding, bank guarantees and movement of goods were rigid. FDI policy was also highly restrictive. According to the business environment rating index which rated investment climate in 43 countries on the basis of 18 independent factors, Indian, zones were placed at the bottom for FDI (TCS 1976).

Various committees were appointed by the government of India during this period to review the working of the zones. These committees pointed out that the growth of EPZs in this phase was hampered by several handicaps including, the absence of a policy, absence of implementation authority to centrally co-ordinate and control the zones, procedural constraints, infrastructural deficiencies, limited concessions and limited powers of the zone authorities to take actions on the spot resulting in inordinate delays. These committees made several concrete recommendations to improve the functioning of these zones. The policy regime however remained virtually static.

In 1980 the government introduced the Export Oriented Units Scheme (EOU). This scheme facilitates the setting up of EOUs beyond the boundaries of EPZs. The responsibility of administering these units was also entrusted with the zone administration.

3.1.2. Expansionary Phase : 1985-1991

Towards the end of the 1970s, India's failure to step up significantly the volume of her manufactured exports in the background of the Second Oil Price Shock began to worry the policy makers. To provide fillip to exports, the government decided to establish four more zones in 1984. These were at Noida (Uttar Pradesh), Falta (West Bengal) Cochin (Kerala) and Chennai (Tamil Nadu). Thereafter, Visakhapatnam EPZ in Andhra Pradesh was established in 1989, though it could not become operational before 1994. All these zones with the exception of Chennai were set up in industrially backward regions. The primary objectives of the zones were still not specified and there were no significant changes in other laws and procedures pertaining to the EPZs.

3.1.3. Consolidating Phase : 1991-2000

In 1991, a massive dose of liberalization was administered in the Indian economy. In this context, wide-ranging measures were initiated by the government for revamping and restructuring EPZs also (See Kundra 2000 for details). This phase was thus marked by progressive liberalisation of policy provisions and relaxation in the severity of controls and

simplification of procedures. The focus had been on delegating powers to zone authorities, providing additional fiscal incentives, simplifying policy provisions and providing greater facilities. The scope and coverage of the EPZ/EOU scheme was enlarged in 1992 by permitting the agriculture, horticulture and aqua culture sector unit also. In 1994, trading, re-engineering and re-conditioning units were also permitted to be set up.

3.1.4. Emergence Phase : 2000 onwards

This period has witnessed a major shift in direction, thrust and approach. The EXIM Policy (1997-2002) has introduced a new scheme from April 1, 2000 for establishment of the Special Economic Zones (SEZs) in different parts of the country. SEZ is an almost self contained area with high class infrastructure for commercial as well as residential inhabitation. SEZs are permitted to be set up in the public, private, joint sector or by the State Governments with a minimum size of not less than 1000 hectares. The number of incentives both fiscal and non fiscal has also been extended to the units operating in SEZs. Several measures have been adopted to improve the quality of governance of the zones. These include, relaxation in the conditions for approval process and simplifying custom rules. More recently, Development Commissioners are given the labour commissioner's powers. SEZ policy is thus the most significant thrust towards ensuring the success of export processing zones.

From November 1, 2000 the Export Processing Zones at Kandla, Santa Cruz (Mumbai), Cochin and Surat have been converted into SEZs. In 2003, other existing EPZs namely, Noida, Falta, Chennai, Vizag were also converted into SEZs. In addition, approval has been given for the setting up of 26 SEZs in various parts of the country in the private/JT sectors or by the state. These include, SEZs at Nanguneri (Tamil Nadu), Positra (Gujarat), Kulpi (West Bengal), Paradeep (Orissa), Bhadohi and Kanpur (Uttar Pradesh), Kakinada (Andhra Pradesh), Dronagiri (Maharashtra) and Indore (Madhya Pradesh). Besides, Santacruz EPZ was also extended in terms of size by adding 11 acres. Introduction of the SEZ policy has marked the period of emergence of the EPZ policy in India. It is expected to go a long way in determining the success of the EPZs (now called SEZs) in India.

3.2. *Sri Lanka*

3.2.1. *First Phase : 1978-1990*

Sri Lanka attained political independence in 1948. However, the process of industrialisation was initiated in the late 1950s when the government formulated a new development strategy with emphasis on industrialisation (Abeyratne 1997). The industrialisation policies initiated in the late 1950s were influenced by the contemporary development thinking and hence were based on the ISI strategy. For around two decades till 1977 Sri Lanka remained a paradigm case of an inward oriented trade regime (Abeyratne 1997, p. 365). By the late 1960s, however, the balance of payment situation had worsened in Sri Lanka and there was a new policy emphasis on export promotion within the overall framework of ISI strategy. The government recognised the role of FDI in the export development drive and offered a package of production and tax incentives for export oriented FDI. However, the scheme could not remove the anti-export bias of the restrictive trade regime and failed to attract substantial export oriented FDI (Athukorala 1997). As a result, in 1977, the process of trade and investment liberalisation was initiated in the country. The then government introduced radical policy reforms, which aimed at establishing a substantially liberalised and export oriented trade regime in the country. The package of liberalisation involved a drastic change in the system of exchange rate management, tariff rate structure and QRs.

Promotion of export oriented FDI turned out to be a pivotal element in the new policy. In 1978, the government set up the Greater Colombo Economic Commission (GCEC) with wide ranging powers to facilitate FDI in the fully export oriented ventures. The Commission was authorised to set up EPZs within an area of authority covering 160 square miles north of Colombo and give approval to FDI. Thus the EPZ policy in Sri Lanka was designed primarily to attract foreign investment within the framework of the export oriented policy regime with significant relaxation of rules governing FDI, developed infrastructure and support services, freedom from diverse industrial regulations, a high quality governance and attractive incentive package. This was in contrast with India where the policy came into force to offset the anti-export bias of the ISI regime with no special emphasis on FDI and a highly restrictive package.

The first EPZ became operational in 1978 in Katunayake , which is in close proximity of Colombo. It is located in Gampaha district, which is one of the most developed districts in Sri Lanka. The zone was developed in four phases : 1978 to the early 1980s, early 1980s to the late 1980s, late 1980s to the early 1990 and thereafter. In the fourth phase 52 acres were added to the zone area, which is yet to develop. As we shall see later , a highly attractive incentive package was offered to EPZ units. While the EPZ policy package was designed mainly to attract export oriented FDI, substantial reforms were introduced to improve the general investment climate in the rest of the economy also ((Abeyratne 1997). Furthermore, labour unions had also weakened due to political developments by 1980. Thus the investment climate was highly favourable for foreign investors after 1977 and Katunayake proved to be highly successful in attracting FDI. The success of Katunayake EPZ paved the way for setting up a second EPZ in Biyagama in 1983, again near Colombo in Gampaha district.

3.2.2. Second Phase : 1990-1998

A new policy package announced in 1990 introduced several important changes to the FDI policy framework. Besides, GCEC was empowered to develop EPZs in all parts of the country including those outside the area of jurisdiction of GCEC as demarcated by the original Act. As a result, the next EPZ was set up at Koggala in an industrially backward district of Galle of the Southern province. Since Koggala was located in a backward region, certain complimentary incentives were offered to the investors there. These included additional tax holiday, concessionary turnover tax and lower ground rent.

In 1992, all FDI promotion activities were placed under GCEC with a view to creating a one stop investment promotion centre and the reformed GCEC was renamed the Board of Investment (BOI). The BOI took over the functions of Foreign Investment Advisory Committee (FIAC), the Industrial Development Board (IDB) and the Local Investment Advisory Committee. Thus the scope of BOI operations was extended to include all FDI (export oriented and domestic market seeking) and domestic large scale operations. BOI offers single window service to its clients so that the entrepreneurs are required to deal with only one agency. In one

of our interviews, an entrepreneur commented that ‘the concept of single window services is truly in practice in Sri Lanka’ .

3.2.3. Third Phase : 1998 onwards

Since 1998, BOI has been involved in massive expansion in the EPZ scheme. Six new EPZs have come up during a short period of 1998 to 2000. These are : Malwatta (1998), Mirigama (1998), Wathupitiwela (1999), Mawathagama (2000), Polgatawela (2000) and Horana (2000). Four of the zones namely, Malwatta, Wathupitiwela, Mirigama and Horana are in Gampaha while Mawathagama and Polgatawela are in the Kurunegala district of the North Western province of the country, which is also industrially developed like Gampaha. In all, nine EPZs are currently operational in the country. Their total employment is over 110 thousands and exports over \$1000 million.

All the zones (except Koggala) are located in industrially developed districts. One must however note that the location of Wathupitiwela and Mirigama is in difficult areas and therefore these are classified as difficult zones. Special efforts are made to promote them along with Koggala, which is categorised as the most difficult zone. Thus less than ideal locations were selected with the expansion in the EPZ scheme. Besides , some of the zones set up have a very small size. These include, Wathupitiwela, Mawathagama and Malwatta. Their size varies between 10 hectares (29 acres) and 27 hectares (77 acres) and these are the smallest zones in South Asia.

3.3. Bangladesh

3.3.1. First Phase : 1984-1998

The policy framework that Bangladesh inherited and maintained at independence in 1971 was geared towards import substituting industrialisation. The process of reform was however initiated as early as in 1975. The reform process was further intensified following major policy declarations in 1982. Under the new policy regime, export promotion became a major concern of the government. A wide array of export incentives were offered to boost exports. These included: export subsidy, duty free access to imports, tax holidays and rebates and credit guarantees. While

the incentive package mostly centred around price factor, there were several non price constraints as well, crucial amongst which were paucity of investment capital, lack of access to improved technology, inadequate linkages with the global markets. It was therefore felt that adequate inflow of FDI in the export sector was necessary to promote exports. In 1980, the Foreign Private Investment (Promotion and Protection) Act was enacted to provide equal treatment to domestic and foreign investors. But attracting FDI requires development of infrastructure and other structural reforms also. Since the country-wide development of infrastructure would be expensive and implementation of economic and structural reforms would require time, establishment of EPZs was viewed as an important strategic tool for expediting the process of industrialisation in the country (Mondal 2003). The country therefore started the EPZ programme in 1981 with the creation of the Bangladesh Export processing Zones Authority (BEPZA) under the BEPZA Act. Under the BEPZA Act, the two primary objectives of EPZs in Bangladesh are to promote foreign direct investment (FDI) and exports beside other objectives such as generation of employment, transfer of technology and upgradation of skill. The government has adopted an 'Open Door Policy' to attract foreign investment to Bangladesh and promoting, attracting and facilitating foreign investment in the Export Processing Zones is one of the important responsibilities of the BEPZA.

The first EPZ became operational at Chittagong in 1983-84. Chittagong is one of the most developed cities of Bangladesh. The project was implemented in three phases. The first phase spread over the period 1978-85. The size of the zone was 140 acres. It was expanded by 60 acres in the second phase implemented during 1985-86 to 1989-90. In the third phase 253 acres of land was developed increasing the size of the zone to 453 acres. The second EPZ was set up in Savar near the capital city Dhaka. Dhaka EPZ commenced its operations in 1993-94. Its size was 141 acres. In 1997, it was further expanded by 205 acres. Both these zones are currently fully occupied.

3.3.2. Second Phase : 1998 Onwards

Encouraged by the success of these zones, the government recently set up four more EPZs. These are in Mongla, Ishwardi, Comilla and Uttara. Uttara, Mongla and Ishwardi are in the industrially backward regions and have other locational disadvantages in terms of distance

from the port and industrial towns. The government has recently approved two more EPZs in developed regions near Dhaka (Adamjee Jute mill) and Chittagong (Steel mill).

Table 3.1 summarises the evolution of the EPZ policy in the countries covered in the analysis.

Table 3.1 : A Comparative Analysis of the evolution of the EPZ policy

Feature	India	Sri Lanka	Bangladesh
Evolution of the policy	EPZ policy evolved during the ISI regime to offset the anti-export bias.	EPZ policy was implemented to promote export oriented FDI in the export oriented regime	EPZ policy was implemented to promote export oriented FDI in the export oriented regime
EPZ Authority	No autonomous body. Zone management is under the purview of the Ministry of Commerce.	GCEC was set up directly under the President. This was renamed BOI in 1992	BEPZA was created under the chairmanship of the Prime Minister
EPZ Act	No EPZ Act	Law no. 4 of 1978 now known as the BOI Act	BEPZA Act 1980
Objectives	No specific objectives until now.	<ul style="list-style-type: none"> ▪ Foster and generate the economic development ▪ Encourage FDI ▪ Diversify the sources of foreign exchange ▪ Encourage the establishment and development of industrial enterprises. 	<ul style="list-style-type: none"> ▪ foster and generate economic development by encouraging foreign investments; ▪ diversify the sources of foreign exchange earnings ▪ encourage establishment and development of industries and commercial enterprises ▪ generate productive employment opportunity and to upgrade labour and management skills through acquisition of advanced technology
Operational zones	9 (including Indore)	9	6
Location of the first zone	Backward region	Advanced region	Advanced region
Zone that became operational in the late 1990s	2 (including Indore)	6	4
Development strategy of zones	Development in a single phase	In phased manner	In phased manner
Size of the zones	104-700 (average 304 acres)	29-540 (245 acres)	230-460 acres (average 389 acres)

In sum, the EPZ policy in Sri Lanka and Bangladesh evolved to promote exports within the framework of the export oriented regime while in India this concept evolved during the ISI regime. EPZs in Bangladesh and Sri Lanka were expected to kick-start the process of industrialisation while India did not have a focused set of objectives. Besides, both Bangladesh and Sri Lanka created an elaborate institutional framework to govern the EPZs in the initial stages, while in India there has been no such attempt till recently. One may also observe that Sri Lanka and Bangladesh set up 6 and 4 zones respectively during the late 1990s. In India, only 2 zones, Surat and Indore (no data available) became operational. However, one must observe here that all the three South Asian countries are promoting the EPZ programme much more vigorously now than in the initial phases of their evolution. In that context, it is important to mention that the EPZ Authority of Pakistan is also undertaking a very extensive program for setting up EPZs' in the country. In addition to Karachi, Sialkot and Risalpur have recently become operational. Besides, three new zones are coming up at Rawalpindi, Saindak and Reckodek.

This warrants a sober research on the factors crucial to the success of the zones in the region.

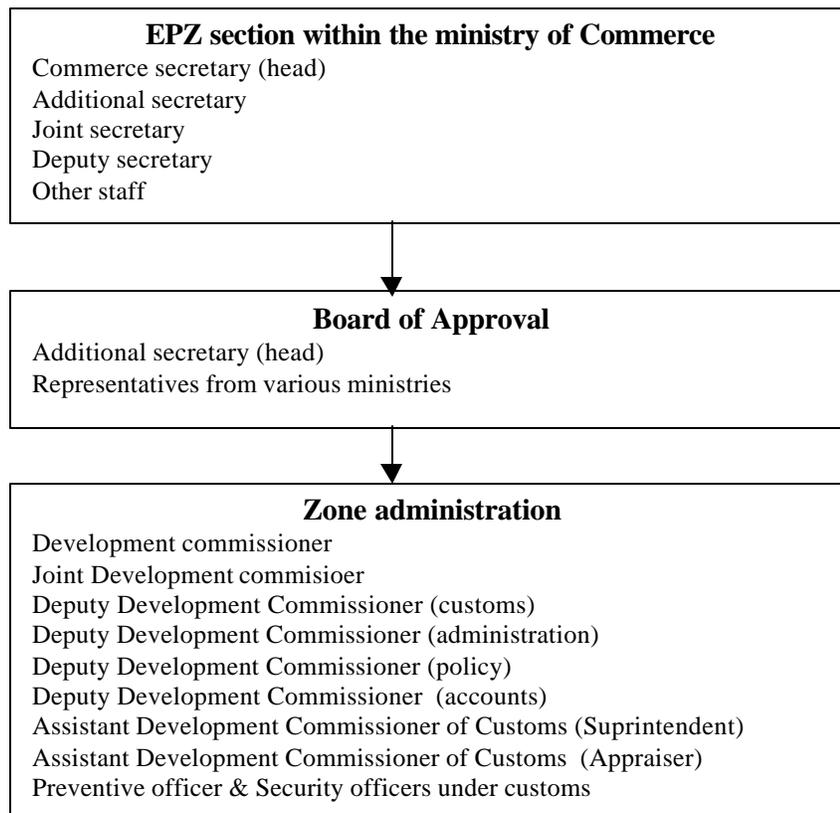
4. Governance of the zones : A Comparative Analysis

4.1. Administrative set up

4.1.1. India

Export processing zones in India have a three-tier management structure (Figure IV.1). At the apex level is the EPZ section within the Ministry of Commerce headed by the Commerce Secretary, which considers policy issues and periodically reviews the working of zones. At the next level is the Board of Approval, which is responsible for examining proposals for setting up enterprises in the sectors. It is headed by a person of the Additional Secretary level. At the third tier is the

Figure 4.1 : Organogram of the administrative set up : India



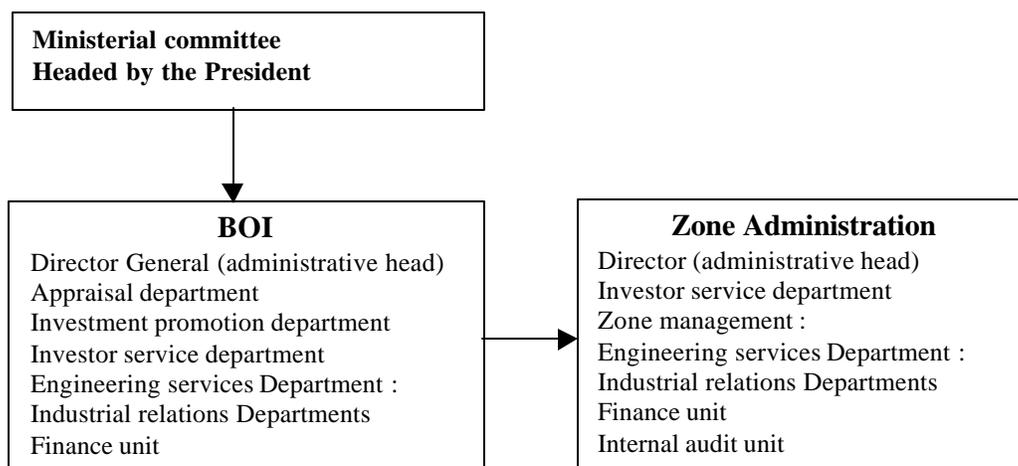
Development Commissioner who is the chief executive of the EPZ. He is responsible for the day-to-day administration, approves investment proposals under the automatic route and enforces various regulatory provisions. Recently, powers of Labour Commissioners are also delegated to him. He is assisted by a Joint Development Commissioner, four Deputy Development Commissioners, two Assistant Commissioners of Customs, security officer and other ministerial staff.

To sum up, there is no autonomous authority responsible for the development of zones and for providing single window clearances in India. The zone administration functions as the government department office. The proposal for an autonomous EPZ Authority was moved by the Tondon Committee in 1982 was endorsed by several subsequent committees (Kundra 1997). However, the government could introduce neither an EPZ Act nor an autonomous authority to govern the EPZs till date. The Draft SEZ Bill 2004 is likely to be tabled in the Parliament soon. After it is passed, the country will have its first SEZ legislation.

4.1.2. Sri Lanka

In Sri Lanka the Board of Investment is the apex EPZ authority. It has its origins in the Greater Colombo Economic Commission, which was established in 1978 and which was directly responsible to the President of Sri Lanka. In 1992 the Commission was reconstituted as the Board of Investment of Sri Lanka. It is structured to function as a central facilitation point for investors, providing advice and assistance at every stage of the investment process. It is the only organisation that an investor needs to contact. It operates as an autonomous body that reports directly to the President. The Board consists of a Director General, the Chairmen of the Regional Economic Development Commissions and three members. The Director General is appointed by the President on the recommendation of the Minister concerned. The three members are also appointed by the President on the recommendations of the Cabinet of Ministers and comprise professionals in the field of finance, industry, trade and banking. It is assisted by a Ministerial Committee on Investment Promotion. Its operations are facilitated by a number of departments that look after different aspects of management (Figure IV.2). One must however note that BOI is responsible not only for the promotion of EPZs but also for all other foreign direct investment and large scale investment.

Figure 4.2 : Organogram of the administrative set up : Sri Lanka



The zone is administered by a director under whose purview the following departments are placed :

Zone management : It manages the general administration of the zone. A senior management team spearheads the department. It is responsible for authorising and facilitating entry to the zone, authorising the removal of locally purchased material and equipments, co-ordinating transport, health, sanitation facilities, disposal of solid waste and general maintenance of the zone.

Investor services department : It processes import/export documents, issues certificates of origin and export licenses for exporting garments to the EU and Canada, examines export import cargos, recommends the issuance of visas. It also looks after subcontracting and imports of motor vehicles for staff transportation on duty free basis.

Engineering services Department : It coordinates with investors on all infrastructure matters.

Industrial relations Department : It handles complaints made by individual workers or workers' councils and resolves industrial disputes. It also provides other services related to human resource such as providing enterprises with manpower resources, fixes terms and conditions of employment, wages and labour standard and provides updated information on employment statistics.

Finance unit : It accepts all payments on behalf of the BOI. These include ground rent, water bills, import-export and other service charges, stamp duty, defence levy and goods and services tax. The internal audit unit monitors financial areas of the BOI.

Thus, attempts are made to provide all post-entry services through single window. There are thus various departments at BOI and each has well defined responsibilities.

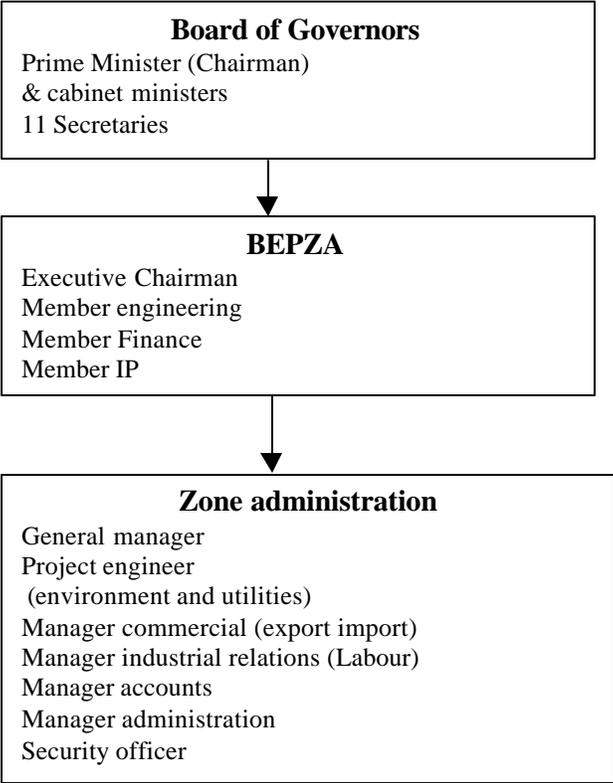
4.1.3. Bangladesh

Soon after the commencement of the Bangladesh Export Processing Zones Authority Act, 1980, the Government established an Authority called the Bangladesh Export Processing Zones

Authority (BEPZA) for carrying out the purposes of this Act. The General direction and administration of the affairs of the Authority is vested in the Executive Board, which is headed by the executive chairman. The Executive Board, in discharging its functions, acts in accordance with the guidance, orders and instructions given by the Board of Governors of the Authority from time to time. The Board of governors is constituted under the chairmanship of the Prime Minister. It consists of 7 cabinet level ministers and 11 secretaries.

BEPZA is the autonomous body that ensures all the pre entry and post entry services to the investors. There are three broadly defined departments under the Executive Chairman : Engineering, Finance and Investment. These are in turn headed by three officials : Member (Engineering), Member (finance) and Member (Investment) respectively.

Figure 4.3 : Organogram of the administrative set up : Bangladesh



To conclude, the administrative set up of EPZs in Bangladesh and Sri Lanka is fairly similar. In both cases, EPZs are managed by autonomous authorities, which have been constituted under specific Acts and have been assigned the responsibilities to promote the zones. However, one major dissimilarity between the workings of the authorities in the two nations is that in Sri Lanka the Board of Investment looks after all FDI, large scale investment, export oriented units outside the zones and other industrial parks also while in Bangladesh, the EPZ authority is responsible only for the zone development. There is no other export oriented sector outside the EPZ. Thus the country has a highly focused administrative set up dedicated to the development of the zones only.

In India, EPZs are managed by the government department. At the zone level, there is no fine tuning of the division of responsibilities along the lines that is seen in other two countries. Besides, EOUs also fall under the purview of the same administrative set up increasing the responsibilities of the administration. However, one distinguishing feature of the Indian system is with regard to the custom services. In India, these services are directly under the jurisprudence of the zone administration. In Sri Lanka and Bangladesh, on the contrary, custom departments are controlled by the government. Many respondents in our survey of Sri Lanka and Bangladesh found the custom officials non-cooperative and corrupt and recommended to bring customs under the jurisprudence of the zone management.

4.2. *Administrative Procedures*

4.2.1. *India*

EPZs in India evolved during an overall inward looking trade policy regime with several controls and regulations. The overall economic philosophy influenced the governance of the zones as well. There was no single window facility within the zone. Approvals were centralised with the Board of approval. But the Board of Approval did not have the powers to grant the clearance and permission required. It was a recommendatory body. Companies needed to get their proposals cleared by the Secretariate of industrial approvals and also by the Ministry of Commerce. Furthermore, entrepreneurs had to acquire individual clearances from various state and central government departments. Units needed clearances from drugs and cosmetics and

licences under the factory act, production and excise act, boiler act, explosive act and so on. This involved a substantial time and financial cost for the entrepreneurs. FDI policy for the zones was rigid. There was no blanket or clear cut blanket permission for 100% foreign equity holding in the zone. Each proposal was considered on case by case basis. Custom procedures for bonding, bank guarantees and movement of goods were rigid.

Powers of the Board of Approvals were decentralised by introducing an automatic approval route in 1991. Powers of approval under the automatic approval routes for EPZ units were granted to Development Commissioners (DCs). However, investment proposals under the automatic routes were subject to several stringent conditions². Proposals which did not meet the stipulated conditions for automatic approvals were considered by the respective Board of Approvals.

All proposals for FDI/NRI/OCB investment in EPZ units were also made eligible for approvals under the Automatic Route subject to prescribed parameters³. For proposals not covered under the Automatic Route the applicant were directed to seek separate approval of the Foreign Investment Promotion Bureau (FIPB). It was stipulated that once the investment in equity had been approved, the import of capital goods, components and raw materials or the engagement of foreign technicians for short duration did not require any additional approvals. Approval of the Ministry of Home Affairs was not needed for hiring of foreign nationals holding valid employment visa.

² Foreign exchange requirement did not exceed Rs. 100 million, Exports were to be directed to the general currency area, Payment of fees for foreign technology and royalty was less than Rs. 10 million/8%, Sub contracting in the DTA was not envisaged, The proposed industry was non polluting The project did not fall in the restricted list. Value addition was as per the prescribed norms.

³ Approvals were placed under the automatic route for FDI/NRI and OCB investment, except:

All proposals that require an Industrial Licence include (a) items requiring an Industrial Licence under the Industries (Development and Regulation) Act, 1951; (b) more than 24% foreign equity investment for units manufacturing items reserved for small scale industries; and (c) all items which require an Industrial Licence in terms of the locational policy notified by Government under the New Industrial Policy of 1991.

All proposals in which the foreign collaborator has a previous venture/tie-up in India.

All proposals relating to acquisition of shares in an existing Indian company in favour of a foreign/NRI/OCB investor.

All proposals falling outside notified sectoral policy/caps or sectors for which FDI is not permitted and/or whenever any investor chooses to make an application to the FIPB and not to avail of the automatic route

Furthermore, Government delegated more powers to Development Commissioners of the Export Processing Zones (EPZs)⁴. Development Commissioners (DCs) of Export Processing Zones were now authorised to exercise the administrative powers in capacity expansion, broad banding and export import permissions⁵. Besides, DCs were also allowed to authorise the change in name of the company or the implementing agency, to permit change of location from the place mentioned in the Letter of Approval/ Letter of Intent to another, to extend the validity period of Letter of Intent/Letter of Permission/Letter of Approval, to revise the Value Addition upward or downward upto the minimum Value Addition percentage as prescribed for the item of manufacture under the Policy and to permit disposal of obsolete capital goods, in DTA, on payment of applicable duties, without any restrictions.

Procedures for sourcing indigenous capital goods and raw materials were simplified. Multiple bonds for import clearance were replaced by a single bond. In 1998, custom procedures were further simplified when a common bond for imports, exports, job work and repair was introduced.

It was in 2000 that path breaking reforms were introduced in the zone governance. Conditions for automatic approvals are relaxed considerably. Now the Development Commissioners (DCs) may accord automatic approval to all projects where the activity proposed does not attract compulsory licensing. All proposals which do not meet any or all of the parameters for automatic approval are considered and approved by the Board of Approval of EPZ/SEZ set up in the Department of Commerce. These include all services related proposals.

⁴ vide Press Note No. 4 (1995 Series) dated 19th April, 1995. More powers were further delegated vide Press Notes No. 15 (1997 Series) dated 10.11.97, No.14 (1998 series) dated 16.10.98 and No. 20 (1998 Series) dated 15.12.98.

⁵ Such as, to allow enhancement in the value of imported Capital Goods upto 75% of the value approved initially, subject to the maximum of Rs. 100 million; To allow increase in the value of Capital Goods imports in terms of Rupees, owing to foreign exchange rate fluctuations vis-a-vis foreign currencies,; To attest list of imported capital goods, both new and second-hand, within the approved value, including additional value permitted in (1) above, To permit capacity enhancement of EOUs/EPZ units, without any limit in respect of de-licensed industries only, provided the requirement of additional imported Capital Goods does not exceed 50% of approved value subject to a maximum of Rs. 10.00 crores, to permit broad-banding subject to the condition that it does not result in procurement of additional capital goods imports beyond 50% of approved value subject to a maximum of Rs.10.00 crores; to permit import of office equipment in accordance with EXIM Policy and Handbook of Procedures, to revise prospectively the export obligation stipulated in the approval letters, To permit merger of two or more EOUs/EPZ units into one EOU/one EPZ unit,

The earlier system of an inter-ministerial committee for approving SEZs is dispensed with. The Board of Approval now is a larger body and quite broadbased to provide a single interface to those keen on setting up units. It has representatives of various Ministries like Small-Scale Industries, Environment and Forests, Science & Technology as members of the board. It has been broad based to include a representative of the Central Board of Direct Taxes and state government representatives also.

All proposals for FDI/NRI/OCB investments in EPZ units qualify for approval through automatic route subject to sectoral norms. Proposals not covered under the automatic route are considered and approved by FIPB.

Thus the process of approval has been relaxed considerably and important powers have been delegated to the Development Commissioners only after 2000. The approval process now takes 7-10 days. The other formalities that need to be completed however include, Legal undertaking, Custom bonding, Factory registration, Building approval, Sales tax registration, Labour and environment certifications. Our survey of the EPZ units revealed that units have to deal with as many as 15 authorities at the time of entry. These include, DC, municipal body, ESI, PF, Income tax, sales tax, factory registration, labour, pollution and excise. They have to deal with many of them in day-to-day operations as well. The zone acts as a facilitator in providing many of these services. The role of the administration here is to invite the government officials from various departments and arrange meetings with entrepreneurs. However, around 40% of the respondents felt that the zones are not effective in providing single window services. Besides, most entrepreneurs complained that there were delays in decision making by the Ministry of Commerce and that there was lack of flexibility and sensitivity. We asked the sampled firms 'what they think is important to improve the quality of governance?' Majority of them suggested that more powers should be delegated to Development Commissioners.

4.2.2. *Sri Lanka*

The BOI provides advice and assistance at each stage of the investment process. Here investors can obtain information on the investment opportunities in Sri Lanka and the incentive

packages on offer. Prospective investors are required to submit a formal application to the BOI. Assistance can also be obtained in completing application forms and referring investors to the relevant department within the organization. Once the application is complete it is submitted to the Appraisal Department. A fee of US\$ 150, or the Rupee equivalent, is charged to process the applications. A case officer is designated to assist and guide the investor through all stages of investment. He assists him in his dealings with other state authorities and relevant departments within the BOI. Once the proposal is approved, the investor may contact the zone administration. The administration provides assistance in site selection, clearance, advice on factory building and other technical matters. It makes recommendations to immigration Authorities for issuing resident visas, advises on environment norms, facilitates environment approvals and assists in the formation of employees' councils. In our survey the units revealed that they have to deal with only 3-4 authorities in addition to BOI at the time of entry. These are: the Department of Inland revenue, Registrar of Company, Customs and Municipal boards. The BOI facilitates the provision of other facilities through its zone departments. While doing so, it plays a pro active role by participating in the process directly unlike in India where the role of the authorities is passive. A majority of respondents in the country opined that the single window clearances were satisfactory or highly satisfactory.

Another important feature of the governance in Sri Lanka is that the incentives granted to the units at the time of signing the contract remain valid for their life time. These provisions cannot be changed by successive governments. This is a feature not shared by many countries.

4.2.3. *Bangladesh*

BEPZA has the motto of 'one window same day service'. *BEPZA sanctions projects generally within one week.* The process takes maximum of 7 days and minimum 1 day. BEPZA is also authorised to provide the following services at the time of entry : Registration under the factory act, approval of building plans, *Issue of Import/Export Permits, issue of required Work Permits for foreign nationals working in EPZ enterprises* and water connection. Thus the authorities of inspector of factories, director of labour and municipal corporation have been delegated to BEPZA. BEPZA plays a role of facilitator in the provision of other services such as

electricity connection and telephone connection. However the units have to deal with some other government authorities as well. These include National Board of Revenue, Department of Environment, Custom and Fire Safety. Though BEPZA facilitates their interaction with these government departments, the units may approach them directly to expedite the process. In day-to-day operations, the units have to deal mainly with BEPZA, custom authorities and Export Promotion Board. However, though all custom related services are provided within the zone, custom authorities are not directly under the jurisdiction of the EPZ administration.

4.3. Quality of Governance : Entrepreneurs' Perspective

We attempted to analyse the entrepreneurs' perspective on the quality of governance across the selected zones in Sri Lanka, Bangladesh and India. We asked the sampled units to rate different aspects of governance in the zones over the 0 to 5 scale. For analysing their responses we needed to group these questions in broad categories. For doing this we used factor analysis. Factor analysis yielded 5 broad factors within which our questions could be grouped. These are, transparency, effectiveness of the authorities in providing services, simplification of the rules, attitude of the officials and the frequency with which they pay irregular payments. The average response of the units under all these groups are provided in Table 4.1. Three observations may be made. First, the quality of governance in general is above the average of 2.5 in almost all the cases. Two, India is rated the lowest in almost all aspects of the governance. Surprisingly, governance in Bangladesh and Sri Lanka are rated almost the same by the units. However in both these countries the entrepreneurs complained that though the zone authorities attitude was good, the outside authorities that they have to deal had a very bad attitude, there were delays in decisions and the procedures were time consuming. Some Sri Lankan units even reported that the BOI is losing its clout over government departments and that the latter sometimes harass BOI units due to the preferential treatment that they are receiving. In Bangladesh, units reported to have faced the problem of rent seeking while dealing with other government departments. Third, the factor 'simplified rules' scored the lowest satisfaction suggesting that the rules in these countries are complex and that this leads to increase in delays in bureaucratic decisions.

Table 4.1 : Quality of governance : Firms' perspectives in the zones (mean response)

Variable	Bangladesh	Sri Lanka	India
Transparency	3.23	3.26	2.05
Effective in providing services	3.24	3.18	2.91
Attitude of the government officials	3.52	3.42	2.57
Simplified rules	2.72	2.63	2.27

Table 4.2 summarises information on the frequency of irregular payments in the zones across the three countries. Over 60% of the respondents in India claimed that they pay irregular payments frequently or highly frequently. The frequency of paying irregular payments appears to be the highest in custom clearance. In Sri Lanka and Bangladesh, rent seeking is reported mainly in custom clearances. The frequency of making such payments for other processes is very small. In Sri Lanka, the units reported to have the practice of giving gift hampers to zone officials at the time of Christmas. In Bangladesh, on the contrary, gifts are sent to the units by BEPZA. However, almost all the respondents in these countries agreed that they pay irregular payments in custom-related procedures. The amount however is not very substantial. We were informed in Sri Lanka that entry charges per entry/exit is Rs 20 and for verification it is Rs. 50. In Bangladesh also the amount varied from Rs. 15 to Rs. 50. In Bangladesh, the units were reported to be making irregular payments every time they deal with the outside government departments.

Table 4.2 : frequency of irregular payments in different processes : firms' perspective (0-5 scale)

	Bangladesh	Sri Lanka	India
Approval process	0.8	0.6	2.1
Acquiring licenses	1.3	0.5	2.1
Custom clearance	4.2	3.5	2.8
Labour inspections	0.0	0.2	2.4
Environment inspections	1.0	0.3	2.2
Judicial measures	0.3	0.0	2.2
Interaction with police	1.2	0.6	2.0
Interactions with tax authorities	1.3	0.3	2.4

Source : Primary surveys

As mentioned earlier, custom authorities in these countries are not under the jurisdiction of the zone authorities. In India, custom clearance powers are delegated to the zonal authorities. Moreover the government has implemented the scheme of self certification. This might have helped in reducing the level of rent seeking. In all other procedures, rent seeking is much higher in India than the other two countries. This could be because, the zone authorities in these countries play a more proactive role in the provision of these services to the units than in India.

The satisfaction level with the governance is lowest in India and comparable in Bangladesh and Sri Lanka with former having a slight edge over the latter. Usually the greater is the inter phase with government authorities outside the zone, the higher is probability of facing corruption and bureaucratic delays and hence lower is the level of satisfaction with the governance. One of the critical elements of BEPZA is the wide powers it enjoys in granting various approvals and administration. In India and Sri Lanka, the zone administration plays a role of facilitator in the provision of various services. In Sri Lanka however, the services provided to the investors at the time of entry are personalised by designating an officer who assists and guides the investor in all his dealings with the government department and the departments within the BOI. In India on the other hand, there is no such provision. Even as facilitator, the BEPZA and BOI seem to play more proactive role than the zone administration in India. Furthermore, the process of decontrolling the administration and delegating powers to the zone authorities in India started evolving gradually after 1991 and was expedited only after 2000. Until recently the regulatory framework was highly investor unfriendly. We may thus rank Bangladesh the highest in terms of zone governance followed by Sri Lanka and India.

We considered it appropriate to present a view of the quality of overall governance (outside the zones) in the three countries. We averaged the World Bank indices (World Bank 2003) on governance indicators and presented them in Table 4.3.

Table 4.3 : Governance research indicators : India, Sri Lanka and Bangladesh 2003

	SL		India		BD	
	Rank	Index	Rank	Index	Rank	Index
Voice and accountability	48	-0.06	61	0.38	29	-0.57
Government effectiveness	60	0.03	54	-0.13	35	-0.53
Regulatory quality	60	0.12	44	-0.34	14	-1.05
Rule of law	61	0.23	57	0.07	26	-0.78
Control of corruption	55	-0.14	49.5	-0.25	8	-1.12

Source : World Bank (2003)

Apparently, quality of overall governance is the lowest in Bangladesh. Survey Report on the Corruption in Bangladesh (1999) also reveals a high level of corruption in issuing trade licenses, getting electricity and water connections, billing, getting bank loans, dealing with police and getting redressal from courts. The governance index for Bangladesh was as low as -0.81 as compared with -0.54 for India and $.036$ for Sri Lanka (World bank 2003). Thus the EPZ units are enjoying huge relative advantages over other domestic units in terms of governance in Bangladesh. India and Sri Lanka follow Bangladesh in that order.

5. Incentives : A Comparative analysis

Sometimes it is argued that companies are not attracted by incentives per se and that good infrastructure and cheap labour availability are important (ICIR, 1992). To revisit the issue, we asked the sampled firms : ‘how important it is to offer fiscal incentives for attracting investment in the zones?’. Results of our surveys, contrary to the expectations, show that fiscal incentives are considered very important in determining the attractiveness of the zones. Over 85 percent of the respondents in India regarded them very important. Over 63% of the respondents found subsidies also very important in attracting investment in the zones (Aggarwal 2004a). It is therefore important to analyse the incentive package offered by the three countries for the zone units.

5.1. India

In the initial phases of EPZ policy, the package of incentives and facilities was not attractive in India. Prior to 1981, income tax concession schemes were not given to the zone

units. Tax holidays of 5 years were extended to the units only in 1981. Besides, there were no standardised procedures for exemption from excise duties. In SEEPZ, the suppliers had to pay excise duty and could claim refund only after the supply was made. In Kandla, on the other hand, all inputs were entitled to excise exemptions. There was no state sales tax exemption for Kandla until 1974. Central sales tax was not exempted until 1978 in both the states. Domestic tariff area sale was permitted only against import licenses and the rates of duty were exorbitant. Subcontracting of production was not allowed.

Some favourable policy changes were introduced in the incentive package during the 1980s. The condition of import license for DTA sale was waived in 1987. Subcontracting for job work in DTA was allowed with the approval of Assistant Commissioner of customs. Subcontracting procedures relating to indemnity bonds and revolving bank guarantees were simplified and in 1986, reimbursement of CST was granted to EPZ units. There were no significant changes in other laws and procedures pertaining to EPZs.

During the 1990s, when the government undertook to simplify and rationalise the tax structure and major tax cuts were being introduced in the rest of the economy, incentive package was made more attractive for the zone units also. Though there was no change in the tax holiday, duty on DTA sales was reduced to 50% of custom duty in 1991 and the rate of duty on sale of rejects was reduced to 50% of the applicable duty. Besides, DTA sales entitlement for agro based EPZ units was raised in 1992 to 50% of production. EPZ units were given option in 1995 to switch over to export promotion capital goods (EPCG) scheme. In the EXIM policy for 1997-02, additional DTA sale was allowed to units based on indigenous raw materials, provided they fulfilled the export obligation. Electronic hardware units were allowed to sell upto 50% of production in the domestic market on payment of applicable duties. Software units were permitted to effect online DTA sales.

An attractive package of incentives was offered to SEZ units in 2000. Non fiscal incentives included , exemption from industrial licensing for manufacture of items reserved for small scale industries (SSI), 100 per cent FDI investment through automatic route to

manufacturing SEZ units with certain exceptions ⁶, 100% FDI for the ISPs not providing gateways (both for satellite and submarine cables), Infrastructure Providers providing dark fibre (IP Category I), electronic Mail and Voice Mail in the telecom sector⁷, facility to retain 100% foreign exchange receipts in EEFC Account, 100% FDI in SSI reserved items, re-export of imported goods found defective, goods imported from foreign suppliers on loan basis etc. without G.R. Waiver under intimation to the Development Commissioner, write-off of unrealised export bills upto 5%, capitalization of import payables, repatriation of profits freely without any dividend balancing requirement, no fixed wastage norms and full freedom for subcontracting including subcontracting abroad.

Fiscal incentives included, 100% income tax exemption for a block of five years, 50% tax exemptions for two years and upto 50% of the profits ploughed back for next 3 years under section 10-A of Income tax Act, exemption from the service tax, supplies from DTA to SEZ to be treated as exports under 80HHC of the IT Act, carry forward of losses, 100% Income-tax exemption for 3 years & 50% for 2 years under section 80-LA of the Income-tax Act for off-shore banking units and exemption from Central Excise duty on procurement of capital goods, raw materials, consumable spares etc. from the domestic market .

The Draft SEZ Bill 2004 proposes to consolidate the incentive package further by offering more tax sops. These include , 100% income tax exemption for 5 years, 50% exemption for the next five years and 50% of the profits ploughed back for the next 10 years and exempting the units from all central taxes and security transaction tax etc. However this is yet to materialise.

During the period when tax rates were high in the wider economy (marginal income tax rate in the country was as high as 97% in the 1970s) , tax incentives offered to EPZ units were

⁶ A handful of sensitive industries such as. Arms and ammunition, explosives and allied items of defence equipment, defence aircraft and warships; Atomic substances; Narcotics and psychotropic substances and hazardous chemicals; distillation and brewing of alcoholic drinks; and cigarettes, cigars and manufactured tobacco substitutes) are the exceptions.

⁷ However, FDI upto 100% is allowed in these services subject to the condition that such companies would divest 26% of their equity in favour of Indian public in 5 years, if these companies are listed in other parts of world. Besides, proposals for FDI beyond 49% shall be considered by FIPB on case to case basis.

not impressive. As a result, EPZ units did not enjoy substantial relative advantage as compared with the units outside the zones. When the radical tax reforms were introduced in the wider economy, incentive package for the zones was also consolidated. However with tax rates falling in the rest of the economy, relative advantages of SEZ units vis-à-vis other domestic firms in terms of incentives may not be substantial even now. Besides, local or state level taxes have not been exempted by most of the state governments. Furthermore, managers of many firms in our survey revealed that the incentives are not managed efficiently. Many respondents find that there are delays in receiving incentives, rules of exemptions are complex, information is not available, staff is not co-operative and corruption is widely prevalent. To get duty drawback sometimes units have to offer irregular payments. Finally no relaxation has been given in the operation of other industrial laws including labour laws. The only concession granted is that zones are given public utility status under the Industrial Dispute Act. However, declaration of the zones as public utility service is considered very effective only by one third of the respondents in our survey.

5.2. Sri Lanka

Unlike India, Sri Lanka offered several incentives to the units in the initial phase of the evolution of the zones to attract FDI. These included: 100% foreign ownership, a tax holiday upto ten years with complete tax exemption for remuneration of foreign personnel employed, royalties and dividend of shareholders during that period and duty exemptions from importation of equipment, construction material and production inputs. As early as in 1979 the government introduced the Foreign Currency Banking Units Scheme, which provided the EPZ units unlimited access to foreign Currency credit at interest rates prevailing in the world financial markets. In addition, EPZ units were provided with industrial services such as land, power, water and telecommunication services at subsidized rates.

In 1991, while the corporate tax was as high as 45% with additional 15% surcharge, the EPZ units enjoyed huge tax benefits. Tax holiday was enhanced to 15 years from the first year of profit. Concessional rate of 2-5% was applicable for the next 15 years from the expiry of tax holiday. Dividends paid to non resident share holders were fully tax exempted, dividends paid to resident shareholders were tax exempted during the tax holidays. Besides there was exemption

from tax payments on transfer of shares to non citizens, exemption from import export control act, exemption from turn over tax and excise duty at the point of importation and so on.

However in the late 1990s, quite contrary to India, the government of Sri Lanka cut down the incentives. Tax holidays are gradually reduced to 3-5 years and they are applicable from the date of commencement. Earlier they were applicable from the first year of profit. A concessional rate of 10% is applicable for the next two years and 15% thereafter. Furthermore, conditions for tax exemptions on dividends, exemption in turn-over tax and tax exemption on expatriates' income are made more stringent. Besides, a new Port and Airport development levy of 0.5%-1% is imposed on the CIF value of imports.

Besides, additional incentives for the backward zones are also cut down. Units in these zones enjoy additional tax holiday of 2 years. While the tax holiday is for 3 years for other units, it is for 5 years for these units. Another incentive for the difficult zones is the concession provided in the lease premium per acre. Besides, in the late 1990s, BOI extended interest free loans upto 20 million for factory construction in Koggala. This motivated as many as 8 companies to start functioning in this zone. To the best of my knowledge this incentive is withdrawn recently.

Finally, non fiscal incentives are not prominently significant. EPZ units are granted permission of only 10% DTA sale in the textile sector. All labour laws are applicable. However, units enjoy indirect benefits here as labour laws are not implemented stringently in the zones. Trade unions were banned in the zones till recently. That ban is removed now but formation of labour unions in the zones is discouraged. Instead, the units have joint management labour consultative councils. These councils have representatives of both labour and management and in case of any dispute, efforts are made to resolve them in consultation with the Department of Industrial Relations of the BOI. Labour disputes are not a common problem in the zones here. However, the possibility of trade union formation cannot be ruled out and most entrepreneurs felt that this may affect the zone performance adversely. Besides, many entrepreneurs feel that the rules related to working hours, leaves, holidays and overtime payments are restrictive and should be scrapped.

5.3. *Bangladesh*

Bangladesh also offered a substantial package of fiscal and non fiscal incentives initially like Sri Lanka. But, unlike in Sri Lanka, it has been made more attractive in the 1990s in Bangladesh. Initially, in 1981, the country offered a tax holiday of 5 years. It was raised to 10 years in 1986 and after the expiry of tax holiday, the tax liability was reduced to 50% of total tax attributable. Besides, the government also announced in 1986, tax exemption on dividend income of non resident shareholders for the period for which the company enjoyed tax benefits and such exemptions were continued even after the expiry of the tax exemption if the earnings were re-invested. Besides, the government allowed accelerated depreciation on any machinery or plant in EPZs. In 1987, the government announced exemption from stamp duty on transfer of land in EPZs. At the time of inception in 1981, the government exempted the zones from custom duties and sales tax on imports of machinery, equipments and raw materials. But in the late 1990s, the government exempted the zones from all import duties, value added tax and other supplementary taxes under sections 7 (e) and 7(f).

Besides, some additional incentives are announced for the zones set up in backward regions. For instance, subsidy of 50% is given on land and factory rent in these zones. Recently, the government has also announced a 30% cash incentive for agro based industries in three backward zones of Uttara, Mongla and Eshwardi.

Non fiscal incentives have also been extended over the years. In 1985 the government allowed operation of OBUs in the zones. Exchange controls were simplified, foreign currency loan from abroad under direct automatic route was allowed. In 1989, the government exempted the zones from three major labour laws. These included the Factories act, The industrial dispute act and the Employment of Labour (standing orders) act. These were replaced by two instructions : Instruction 1 and Instruction 2. These instructions carried detailed guidelines on the classification of employees , minimum wages, additional benefits to be paid by the employers in general and for electronic industry, terry towel industry and textiles in particular. This was a major incentive to the EPZ units. All the respondents in our survey reported that the exemption from the labour laws highly benefitted their business in the EPZs. However, labour reforms have been introduced recently in the zones. The new laws require the units to have labour councils.

Representatives in the councils are to be elected by labour under the supervision of the zone authorities. Almost all the units opined that this would affect their business highly adversely.

Beside labour laws, zones are also exempted from a number of other laws. These include: (1) Stamp Act, (2) The Excise and Salt Act, (3) The Income Tax Ordinance, (4) Foreign Exchange Regulation Act, (5) The Land Development Tax Ordinance, (6) The Municipal Taxation Act, (7) The Building Construction Act, and (8) The Chittagong Municipal Corporation Ordinance. Thus the units are exempted from all regional and municipal taxes. Other incentives for EPZ units include duty and preferential access to EU, Canada, Norway and Australia and DTA sales of 10% of previous year's exports in sectors other than RMG.

In what follows we have summarised the fiscal and non fiscal incentives and facilities currently offered by the zones in India, Bangladesh and Sri Lanka.

Table 5.1 : Incentives and facilities : India, Bangladesh and Sri Lanka

Fiscal Incentives			
	India	Bangladesh	Sri Lanka
Income tax holiday	100% exemption for 5 years. 50% exemption in the next two years.	10 years followed by 50% rates for 5 years	3-5 years (3 for the backward regions), concessionary rate of 10% for two years and 15% thereafter
Exemption on dividends	N.A.	10 years complete exemption	During tax exempt period and 1 year thereafter
Exemption of income tax on interest on borrowed capital.	N.A.	Yes	Yes*
Exemption of income tax on salaries of foreign technicians	N.A.	Yes, upto 3 years (subject to certain conditions)	Yes, concessionary rate of 15% for first 5 years
Duty free import of motor vehicles for use of the enterprises in EPZs under certain conditions.	No	Yes (Upto 3)	Withdrawn recently
Exemption from regional taxes	No	Yes	No
Cash subsidies	None	30% on agro based industries	None

N.A. information not available.

Table 5.2 : Non Fiscal Incentives : India, Bangladesh and Sri Lanka

	India	Bangladesh	Sri Lanka
FDI Limits	100% through automatic route to manufacturing SEZ units (barring a handful of sensitive industries.	100%	100% (subject to a negative list)
Full repatriation of profit and capital	Yes (after tax payments)	Yes	Yes
Repatriation of investment including capital gains	N.A.	Yes	Yes
Labour laws	All labour laws apply. However zones are declared public utility service	Three major laws not applicable. However, recently formation of labour councils underway.	All labour laws apply but the zones do not have labour unions. There are joint consultative councils with labour and management representatives.
Import licensing	None	None	None
DTA sale	Allowed at 50% duty	10% other than RMG	10%
Subcontracting	allowed	allowed	allowed
Other industrial laws	None	Exemption from several industrial laws	None

Apparently, Bangladesh is offering the most generous incentives to the zone units and the units are enjoying huge advantages in terms of fiscal and non fiscal incentives. India has also announced a substantially improved set of incentives and facilities. However most of these incentives have been granted in recent years. In Sri Lanka on the other hand, the government has been cutting down the incentives. One must also note that the incentives are not exclusively for the EPZ units in Sri Lanka. These are shared by all BOI companies.

Even in relative terms, EPZ units are enjoying huge tax benefits as compared with domestic units in Bangladesh. The peak custom rate in the country is reduced to 25% in 2004 but

there are several supplementary duties collected along with Import Duties at the import stage pushing up the rate of protection substantially. These are : Value Added Tax (VAT), Supplementary Duty (SD), Advance Income Tax (AIT) and Infrastructure Development Surcharge (IDSC). The highest rate of supplementary duty was as high as 75% until 2003. In 2004, it stood at 30%. Thus the zone units which are exempted from import tariffs enjoy substantial benefits. Furthermore, tax exemptions from regional and local taxes and exemption from other industrial laws also yield substantial benefits to EPZ units as compared with domestic units in Bangladesh. In India, the corporate taxes are slightly higher than in Bangladesh (35% as compared with 25%) giving greater weightage to the benefits arising from tax holidays but with the peak tariff rate falling to 20% and fall in all other indirect taxes, the relative advantage cannot be said to have increased substantially. In Sri Lanka however the incentive structure itself is made restrictive. With falling corporate taxes and custom duties therefore the relative advantages of the EPZ units may be declining in the country.

6. Infrastructure : A Comparative analysis

One of the basic elements critical for any export activity is adequate infrastructure especially physical infrastructure (transport system such as port, airport, water, electricity and communication facilities). Infrastructure within EPZs is generally considered superior to that available in the wider economy. In what follows we analyse the quality of infrastructure in the zones across the three countries.

6.1. The Provision of Infrastructure Facilities by the Zones

We begin here with an analysis of the infrastructure facilities directly provided by the zone authorities in the three countries. Table 6.1 summarises the analysis. No exclusive arrangements have been made for water, electricity or telecommunications by the zone authorities in India. The units have to depend on the state boards. However, load shedding is prohibited in the zones. Furthermore, captive power plant scheme is applicable. Units may arrange water from outside the zones. Zones are providing , financial infrastructure such banks, ATMs and post offices but the units can use banks outside the zones also. Some of the zones are

providing other trade related infrastructure such as warehousing facilities, ICD, transport facilities and other physical infrastructure such as water purifiers and effluent treatment plant.

Table 6.1 : Infrastructure arranged by the zone administration

Physical infra structure			
	India	Bangladesh	Sri Lanka
Standard Factories built by the zones	yes	yes	No
Water	State board	Yes	State board
Electricity	State board	Partial (express feeders for the zones)	State board
Telecommunication	State board	Reservation of telephone lines)	State board
Ware housing	Yes	Yes	None (private warehousing facilities are allowed)
Transport facilities within the zone	None	None	Introduced in Katunayake
Transport for the zone	May be arranged by the units	Allow three duty free vehicle for transport of staff	Earlier allowed three duty-free vehicles
Social infra structure			
Recreation facilities	none	Sports complexes	None
Hotels/guest houses/ club	Guest houses	Investor's club	None
Residence for administrative staff/labour	None	Administrative staff	Administrative staff and hostel in Bigagama
Hospital	Dispensaries in some of the zones	None	None
Fire station	No	Yes	Yes

In Sri Lanka, infrastructure services such as water, electricity, telecommunication, warehousing are not directly provided by the zones. The role of the zone is to facilitate, regulate and govern them within the zone. However the zones provide water effluent treatment facilities and solid waste disposal services. The zone administration in recent years has taken initiatives to improve social infrastructure by providing for example, hostel facilities for women workers in Biyagama and starting shuttle bus service within the zone in Katunayake. In Bangladesh however, BEPZA plays a direct role in providing electricity, water, warehousing and telecommunication services. Three hundred telephone lines are reserved in each zone for the

units to get immediate telephone connection. Besides, efforts are also made to provide some social infrastructure including investor clubs, school (in Dhaka) and sports complexes etc.

6.2. *Quality of infrastructure*

We asked respondents about the quality of infrastructure. The level of their satisfaction was measured on a 0 to 5 scale. The results are summarised in Tables 6.2 and 6.3 below. Water and electricity are two most important aspects of infrastructure. The satisfaction level of entrepreneurs in respect of these infrastructure is shown in Table 6.2. Water is not equally important from all the firms. It is very important in dyeing and bleaching industries but in electronics or computer software it is required primarily for the drinking purpose. Therefore we created a weighted index of the availability of water. We weighted the level of satisfaction by the importance of water and then normalised the variable between 0 and 1 as per the following formula.

$$\text{Level of satisfaction weighted by importance} = I - \frac{\text{min}(I)}{\text{Max}(I) - \text{Min}(I)}$$

Where I is the satisfaction level indicated by the entrepreneurs.

Our results show that the level of satisfaction for the availability of water is less than average in both Sri Lanka and India. In Bangladesh it is just average. Water scarcity is an important issue in Sri Lanka. Both Katunayake and Biyagama are facing severe water problem.

Table 6.2 : Quality of water, electricity and gas : Investors' perspective (mean response)

Infrastructure	Sri Lanka	Bangladesh	India
water (maximum rating 1)	0.412	0.492	0.436
Total Respondents supplementing zone water facilities	50.8	0.0	42.0
Electricity (maximum rating 5)	3.9	3.9	3.5
Respondents using power generators	94.7	50.0	57.0

Source: Primary survey

Some of the units in Katunayake have dedicated tubewells assigned by the administration but they still face this problem. Over 50% of the respondents reported that they arrange water from outside the zones. In India the average level of satisfaction with the availability of water is slightly higher than in Sri Lanka. However, 42% of the respondents were found to have been arranging water from outside the zones. In Bangladesh, water scarcity was found to be a problem in Chittagong zone. However, units in Dhaka did not report water scarcity. Units are not allowed to arrange water from outside the zones in this country.

Power availability is rated satisfactory or more than satisfactory by a majority of the respondents in the zones across all countries. This could be because zones are exempted from power cuts which are very frequent outside the zones. Many respondents however have installed their own power generators. This was mainly due to fluctuation in power supply or to meet power failures. In Sri Lanka, power failures in the zones occur during the drought season and the use of power generators becomes common. The government is providing subsidy on the use of power generators in the zones. However, units find it still cheaper to use the state electricity. Some units complained that the procedures of availing subsidies are cumbersome. In Bangladesh all the units have electricity substations to regulate the high tension electricity and regulate the fluctuations in power supply. Around 50% of the respondents reported that they use power generators. Almost all of them are from Dhaka EPZ. In Chittagong, the use of power generators is not common. The units in Dhaka that use power generators revealed that using gas operated power generators is cheaper compared to the state electricity.

Transport facilities are rated low in all the three countries. Transport facilities within the zones are almost non-existent in all the three countries and hence are below average. In Bangladesh transport for the zones and road conditions are also considered to be below average. In Sri Lanka road conditions are stated to be below average though transport facilities for the zones are above average. Poor and congested roads sharply increase the time for transporting the containers to and from the port. This also resulted in time loss for the labour. In Bangladesh

Table 6.3 : Quality of infrastructure in EPZs : Firms' perspective (deviation from the average =2.5))

	Average deviation from the mean			% of people below the mean (2.5)		
	Bangladesh	Sri Lanka	India	Bangladesh	Sri lanka	India
	mean	mean	mean	mean	mean	mean
Warehouse facilities	0.68	1.2	0.13	*	*	38.29
Container handling facilities	0.68	0.9	0.018	*	*	44.64
Efficiency of Banks	1.59	1.55	0.19	*	10.53	40.1
Transport facilities for the zones	-0.23	0.87	0.34	50	57.89	
Roads leading to the zones	-0.14	-0.026		70	57.89	
Transport within the zones	-0.23	-0.22	-0.23	66.67	20	33
Logistics	0.32	0.87	0.34	20	14.29	33.83
Port facilities	0.045	1.34	0.17	63.24	0	37.78
Internet facilities	0.9	1.29	0.59	27.27	6.25	31.34
Telephone facilities	0.8	1.45	1.07	27.27	6.25	19.11

Source : Author's calculations based on primary surveys. * none

many respondents reported that the company buses that carry labour to the zones create heavy rush and traffic jams in the morning. Rail transport system is not well developed either in Sri Lanka or Bangladesh. Thus the outside road infrastructure connecting the zones with port, airport and other social utilities is poor in these countries.

Port facilities are rated best in Sri Lanka and poorest in Bangladesh. In Bangladesh, exports are routed through Chittagong port. The port is however is not sufficiently deep for large international vessels. Feeder ships connect the country with Singapore or other countries from where these are loaded in larger vessels. This increases time and cost of transportation. Besides, cargo handling facilities are also stated to be poor. In Sri Lanka, port facilities are rated high by the respondents. However, there is only one port in the country. There is another port at Koggala but this is not deep enough for the vessels to enter. Besides, the country does not its own shipping lines and is totally dependent on the international shipping lines. The shipment thus depends on the availability of berth in these ships. This is another major constraints that the country may face in the future. Indian ports are also stated to be characterised by delays and inefficiencies. A world bank study (Goswami et al 2002) compared international transportation costs specifically that of shipping a container of textiles or garments from India to the USA vis-

a-vis other Asian competitors. It found that it was much higher for India as compared to its counterparts and concluded that it was due to inefficiencies at the ports.

Communication facilities are considered to be the most satisfactory of all the infrastructure facilities. Though the quality of such facilities is rated the lowest in Bangladesh, these are above average. Given the information revolution taking place in these countries, it is not surprising.

Apparently, overall quality of infrastructure in the zones is considered above average in all the countries. Variations are not large across the countries. However, infrastructure external to the zones such as roads and ports are not found to be adequate in general.

We compared the zone infrastructure with the rest of the economy across all the three countries. A composite infrastructure measure computed for the three countries on the basis of principal composite analysis for the two years 1982 and 1994 is provided in the table below (Kumar 2003). The index is based on six different aspects of physical infrastructure : telephones, energy, road, commercial vehicles, newspapers and television. It suggests that the country specific infrastructure index is the lowest for Bangladesh followed by India and Sri Lanka in that order. Thus, the relative advantage of EPZ units when compared with the rest of the country is highest for Bangladesh in terms of infrastructure also, followed by India and Sri Lanka.

Table 6.4 : Values of infrastructure index : India, Bangladesh and Sri Lanka

Country	1982	1994
India	-1.133	-1.054
Sri lanka	-1.018	-1.0388
Bangladesh	-1.231	-1.214

Source : Kumar (2003)

7. EPZ Performance : India, Bangladesh and Sri Lanka

7.1. Expansion in Zone Investment and Employment

7.1.1. Country-Level Analysis

Table 7.1 presents accumulated investment figures in selected years at 5-years interval and the average annual growth rates in accumulated investment in each period. It shows that in South Asia, Bangladesh zones expanded most rapidly both in terms of investment and employment. In 1983, the first year of operation, the level of zone employment was 624 in the country in comparison with 24000 in Sri Lanka and 13000 in India in that year. By 2003, Bangladesh left the other two countries far behind in terms of employment and investment levels. One must however note that the growth slowed down in the late 1990s despite the fact that four new zones became operational during this period. Apparently, expansion in the new zones had been comparatively slow.

Sri Lanka followed Bangladesh. It also witnessed rapid growth in investment until the early 1990s when the two zones namely Biyagama and Katunayake were in the expansionary phase. Though the growth rates in investment and employment look similar to India, the comparison is misleading. This is because the base year figures of employment and investment in Sri Lanka are unusually high. In 1978, when the country initiated the programme, the number of employment was around 6000, which was much higher than the employment level in India despite the fact that India started the programme in 1965 and had two operational zones by this year. Employment in Sri Lanka grew faster than India till the early 1990s. In the late 1990s however growth slowed down considerably in although six new zones became operational in Sri Lanka in this period.

India had a very slow expansion in the initial phases of EPZ policy. Expansion in the zones started picking up in the 1980s in terms of employment but total investment remained abysmally small till the late 1980s⁸. In the 1990s, investment also started increasing. Growth rates in employment slowed down considerably in the late 1990s but in terms of investment

⁸ One caveat : data on capital employed is not available for India for all the years. Therefore the series is largely constructed using the available data.

growth rate India outperformed Sri Lanka. Thus, while India started the EPZ programme in the mid sixties, expansion in EPZs started taking place in the 1980s.

Table 7.1 : Total cumulative investment and employment and growth rates* in selected years 1983-2003

	Investment(Million \$)			Employment(Number)		
	Sri Lanka	Bangladesh	India	Sri Lanka	Bangladesh	India
1978	20.9			5876		3300
1983.0	50.4 (28.2)	0.9		24093 (62.0)	624	13000 (58.8)
1988.0	100.0 (19.7)	17.2 (362.2)	69.9	46104 (18.0)	4207 (114.8)	25625 (19.4)
1993.0	221.6 (24.3)	131.0 (132.3)		84058 (16.5)	26336 (105.2)	45885 (15.8)
1998.0	261.2 (3.6)	391.8 (39.8)	223.8 (22.0)	91404 (1.7)	84074 (43.8)	77795 (13.9)
2003.0	292.3 (2.4)	749.1 (18.2)	388.0 (14.7)	104237 (2.8)	144147 (14.3)	88977 (2.9)

Sources : Based on Ministry of Commerce, India, BEPZA, Bangladesh and BOI Sri Lanka

We examined the share of EPZs in total employment in India, Sri Lanka and Bangladesh to analyse the expansion of the EPZ sector in comparison with rest of the economy. Table 7.2. provides the information. It is seen that employment levels in the EPZ sector expanded much faster than in the manufacturing sector in Bangladesh and Sri Lanka as compared with India. Interestingly, the share of EPZs in Bangladesh continued to increase throughout the period, in Sri Lanka, on the other hand, it grew rapidly, reached at 11.6% in 1999 but declined slightly thereafter. In India also the share of EPZs in organised employment increased but the growth was very slow and by 2003, it remained just 1% of the total employment .

Table 7.2 : Share of zones in total employment : Bangladesh , Sri Lanka and India (%)

Year	Share in Organised employment in India	Share in Manufacturing Employment in Bangladesh	Share in Manufacturing Employment in Sri Lanka
1973	0.007		
1979	0.073		1.0
1983	0.187	0.1	3.7
1986	0.313	0.7	5.2
1991	0.537	1.3	8.9
1995	0.686	2.8	10.9
1999	1.042	4.4	11.6
2003	1.04	5.8	9.3

Source : Ministry of Commerce, Government of India; Mondel (2002),

We gathered information on *the participation of FDI* in EPZs across the three countries. It is summarised in Table 7.3. The table shows the share of FDI in total EPZ investment across the three South Asian countries. It shows that Bangladesh and Sri Lanka pulled in significant FDI flows and that FDI plays a pivotal role in the EPZ sector in these country.

Table 7.3 : Share of FDI in total EPZ investment : India, Sri Lanka and India (%)

	India	Bangladesh	Sri Lanka
1982			86.3
1983	n.a.	98.9	86.5
1988	n.a.	79.4	85.2
1993	n.a.	82.7	88.6
1998	17.4	76.2	82.9
2003	24.5	81.1	82.1

n.a. : not available

Sources : Ministry of Commerce, Government of India; Mondel (2002); BOI, Sri Lanka

In contrast, EPZs in India continue to be dominated by domestic investment. This was despite its edge in terms of labour costs, availability of trained manpower and a stable macroeconomic environment. The share of FDI in total investment increased slowly from 12% in 1989 to slightly over 18% in 2000. During 2000-2003, however, FDI inflows increased faster. By 2003, its share in total investment had increased to 25%. Under the SEZ scheme, therefore, FDI is expected to assume a much larger role.

7.1.2. Zone-Wise Analysis

Table 7.4 provides information on zone-wise average investment and employment figures in the first five years of their establishment and last 5 years i.e. 1998-2003. Since different zones were set up in different years, we considered it appropriate to analyse their expansion at two points in time. Instead of growth rates, absolute figures are used due to base year differences. For the new zones, first five years coincide with 1998-2003 but information for them is recorded under 'last five years'. The table shows that in Bangladesh, Dhaka EPZ expanded very fast in the first five years. Though Chittagong was also located in a developed city, it did not respond so promptly. Development of physical infrastructure was extremely slow in the zone in the early

phases due to resource constraint. This could be the reason for a slow expansion rate. The zone started growing after 1989. Currently both the zones are almost fully occupied. Among the new zones, Comilla appears to be the most successful. It could partly be because, it is located near Chittagong. The three other new zones appear to be almost non starters.

In Sri Lanka, Katunayake grew faster than any other zone in the first five years. This was the first zone in Sri Lanka. Location –wise it was very close to Colombo city, port and airport. It expanded very fast in the early phases. Due to increasing demand, area under Katunayake was expanded in four phases. The fourth phase was implemented in 1990 but due to paucity of funds, infrastructure could not be developed. This new phase therefore remains unoccupied till date despite sharing all other facilities of the zone. Biyagama was set up in a comparatively backward location near Colombo. However, after an initial period of slow growth, it picked up. Currently, the zone is fully occupied. Koggala remains slow both in terms of investment and employment. Investment and employment levels are extremely small in the new zones also. Except Horana, all other zones exhibit unimpressive investment and employment levels. It must also be pointed out that though the size of Katunayake (540 acres) and Biyagama (449 acres) compares favourably with those of Chittagong (453 acres) and Dhaka (355 acres), employment and investments are much higher in the latter two. Density of units in Bangladesh zones appears to be high. Katunayake and Biyagama have 83 (6.5 acres per unit) and 58 (7.7 acres per unit) units respectively while Chittagong and Dhaka have 119 (4.8 acres per unit) and 72 (4.9 units per acre) units. This reflects perhaps the difference in the scale of production in the two countries.

Of the three South Asian countries, zone investment and employment levels remain the lowest in India. Though Kandla, is the biggest zone in South Asia having the size of 700 acres, it ranks the lowest in terms of investment. Vizag and Noida have comparable size as Dhaka but in terms of investment and employment they cannot be compared with the latter. Santacruz which is the smallest in size (104 acres⁹) in India has the highest employment. Chennai and Noida are the other zones that have employment exceeding 10,000. All other zones, Cochin (103 acres), Falta (280 acres), Vizag (360 acres) have very small employment and investment. Surat which

⁹ Until 2000, its size was 93 acres. It was expanded by another 11 acres in 2000.

became operational in the late 1990s also appears to be amongst the slowest growing new zones of South Asia.

Table 7.4 : Zone-wise investment and employment in India, Sri Lanka and Bangladesh

Zone	Average investment (US million \$) (first five years of establishment)	Average investment (US million \$) (1998-2003)	Average employment Number (first five years of establishment)	Average employment Number (1998-2003)
Bangladesh				
Chittagong	7.3	344.1	2319	74054
Dhaka	41.2	215.5	12896	45491
Comilla	*	4.4	*	1459
Uttra	*	0.3	*	1368
Mongla	*	0.6	*	157
Eshvardi	*	nil	*	nil
India				
Kandla	n.a.	23.8	244	10720
Santacruz	n.a.	63.6	1190	36385
Chennai	6.8	34.6	2162	12374
Noida	7.9	121.6	2600	17502
Cochin	0.2	58.6	1050	4962
Falta	1.4	45.4	80	2597
Vizag	neg.	60.1	neg	3035
Surat	*	1.4		373
Sri Lanka				
Katunayake	14.3	108.8	16159	27834
Biyagama	3.4	113.8	3494	59634
Koggala	3.9	7.8	4947	5985
Malwatta	*	8.7	*	2919
Mawatagama	*	1.8	*	1037
Mirigama	*	9.7	*	2767
Polgahawela	*	0.5	*	707
Wathpitiwala	*	6.4	*	1911
Horana	*	38.8	*	595

* first five years coincide with 1998-2003

FDI participation also varies across zones. Unfortunately, we did not have time-series data on zone-wise FDI for Bangladesh and India. Table 7.5 provides information on FDI participation in the total EPZ investment across zones in South Asia in selected years. It shows that FDI accounts for substantial investment in Chennai and Vizag EPZs in India. Cochin and

Noida follow them with FDI accounting for around one-fifth of their total. Though Santacruz has expanded very fast, FDI participation is very small in the zone. Kandla and Falta also continue to perform poorly in attracting FDI. In Bangladesh, the share of FDI was higher in Dhaka as compared with Chittagong. We do not have figures for other zones. In Sri Lanka, Katunayake and Biyagama have attracted substantial FDI. Among the new zones, Horana and Mirigama have been attracting substantial FDI. Other zones have been comparatively less successful.

Table 7.5 : Share of FDI in total EPZ investment (%)

Zone	1997	2003
<i>India</i>		
Kandla	1.3	4.9
Santacruz	8.4	9.2
Noida	12.3	12.7
Chennai	28.4	30.7
Cochin	9.6	13.7
Falta	3.1	4.0
Vizag		38.8
<i>Bangladesh</i>		
Chittagong	81.6	n.a.
Dhaka	94.5	n.a.
<i>Sri Lanka</i>		
Katunayake	80.2	81.3
Biyagama	90.5	80.1
Koggala	61.3	50.6
Malwatta		50.0
Mawathagama		35
Mirtigama		93
Horana		94.5
Polgatawela		12.4
Wathupitiwela		59.0

Source : Author's calculations based on the available data

Three conclusions may be drawn.

One, Bangladesh outperformed the other two countries in terms of expansion in investment and employment levels. Sri Lanka performed better than India but by the late 1990s, growth in Sri Lanka zones slowed down considerably. Indian zones exhibited the lowest growth rates in employment and investment for a long period of time. It was in the late 1990s that

investment levels increased rapidly in the zones. India thus could not take advantage of being an early mover.

Two, Bangladesh and Sri Lanka zones have been more successful in attracting FDI than India. It may be pointed out that attracting export oriented FDI in the zones was one of the major objectives in both these countries. Governments of these countries offered investors a wide range of fiscal incentives especially in the initial phases. The incentives contained in policy combined with the availability of relatively cheap semi-skilled labor and flexible labor laws might have spurred a steady wave of investment into the export sector. However we shall examine the factors ensuring high investment in these countries later.

Three, there have been zone level variations in FDI. Better developed zones appear to have attracted more FDI. In India, however, FDI patterns appear to be inconsistent with this general trend. Santacruz which is one of the most densely occupied zone has a very small proportion of FDI. On the other hand, Vizag, which is growing at a small pace has the highest proportion of FDI among Indian. We shall examine the determinants of investment later.

7.2. *Export Performance*

7.2.1. Share in Total Exports : Aggregate Analysis

The share of EPZs in a country's exports is an index of their relative role amongst various other instruments of export promotion (Kundra 2000, p. 69). In India, the share of EPZs in total manufactured exports was 0.14% in 1973 (Table 7. 6). In the next 5 years, by 1979, the share of EPZs in manufactured exports increased to 0.59% . It moved slowly to touch the figure of slightly over 5% by 2002-03 i.e. in 23 years. In contrast, the share of Sri Lanka zones in manufactured exports in the initial years (1979) was as high as 8%. It increased rapidly to 35% by 1990. In the early 1990s, it started decreasing but picked up again in the late 1990s when new zones started operating. Though expansion of the zones in this country slowed down in the late 1990s, export performance appears to have improved. In Bangladesh, the EPZ scheme took off in 1983. The share of EPZs in manufactured exports in 1985 was therefore mere 1.5% percent. Thereafter, the share of EPZs in manufactured exports increased continuously and reached

21.3% by 2003. Apparently, exports from EPZs increased much faster than the overall manufactured exports in Sri Lanka and Bangladesh as compared with India. This is despite the fact that Sri Lanka and Bangladesh had only 2 zones each till the early 1990s while India had 6 zones. Four of them came up in the 1980s.

Table 7.6 : Share of zones in manufactured exports (%)

Year	India	Bangladesh	Sri Lanka
1973	0.14		
1979	0.59		8.0
1985	4.86	1.5	27.8
1990	4.23	3.4	35.2
1995	4.07	9.9	31.1
2000	5.41	17.9	28.8
2001	5.62	19.5	29.5
2002	5.27	19.7	32.3
2003	-	21.3	33.2

Source : Ministry of Commerce, Government of India; Mondel (2002), BOI, Sri Lanka

7.2.2. *Growth Rates in Exports : Aggregate Analysis*

For further analysis, we calculated for all the three countries, average levels of zone exports, average annual growth rates in zone exports and zone exports per unit of employment in three periods : the first five years of the EPZ policy, 1991-1999 and 2000-2003. Table 7.7 presents these figures. It shows that EPZ exports increased at a much higher rate in Bangladesh as compared with India and Sri Lanka. Given the huge relative advantages that the EPZ units enjoy in Bangladesh, high export growth rates in Bangladesh zones were not unexpected. Sri Lanka had an edge over India till the late 1990s. Smaller growth rate in Sri Lanka in the first five years is deceptive. It was due to high base at which growth rates were calculated. In the last period however, India had an edge over Sri Lanka in terms of the export growth rates. Apparently, the two oldest zones in Sri Lanka slowed down and the growth in the exports in new zones could not compensate for them.

Table 7.7 : Export performance of the zones in India, Sri Lanka and Bangladesh in selected years

country		Average exports mill us \$	Export growth Rates (%)	Exp/emp (Thousand US \$)	Exp/emp after controlling for K/L effect (Thousand US \$)
Bangladesh	1983-1987	8.3	572.0	2.9	-0.82
	1991-1999	280.8	39.6	6.9	0.176
	2000-2003	1115.0	11.2	9.1	2.07
India	1966-1970	0.5	97.2	1.9	-8.0
	1991-1999	891.2	12.4	16.3	2.4
	2000-2003	1988.1	9.3	22.6	1.0
Sri Lanka	1978-1982	49.2	86.8	2.8	-4.6
	1991-1999	688.8	13.5	8.6	1.9
	2000-2003	1142.5	5.5	11.5	4.1

Source : Author's calculations

Expansion in exports may be due to expansion in the zones and / or the productive efficiency of the EPZ sector. For analysing this, we used exports per unit of employment (or labour productivity) as a proxy for the productive efficiency. But change in exports per employment unit may also result from a change in capital intensity. We therefore calculated exports per unit of employment after controlling for capital intensity also. For this we followed a standard econometric exercise. We hypothesised that productive efficiency is positively related to capital output ratio. A univariate regression analysis was carried out such that

$$\text{export/employment} = a + b(\text{capital/employment}) + u$$

Estimation of the residuals from the above regressions were used as proxy for productive efficiency of labour after controlling for capital intensity. Table 7.7 provides summary statistics

on exports per unit of employment both before and after controlling for capital intensity. Two things may be observed.

One, productive efficiency of labour increased continuously in all the countries.

Two, in the first five years of the EPZ policy, Bangladesh enjoyed the highest average productive efficiency. Since 1991 however, India has been enjoying higher productive efficiency in the EPZ sector than the other two countries. Bangladesh appears to have slid at the bottom in the 1990s in terms of productive efficiency followed by Sri Lanka.

Three, when we controlled the capital labor ratio effect, the productive efficiency figures reduced drastically. Furthermore, pattern of productive efficiency across the three countries remained the same in the first two periods. In the post 2000 period however, India appears to have lost its top position. Sri Lanka overtook India in terms of productive efficiency of labor. Export growth in Sri Lanka in the post 2000 period was therefore mainly due to increased productivity. This could be because during this period, investment increased much faster than employment in India (as seen above).

Apparently, export growth in Bangladesh has been driven to a great extent by expansion in the zones whereas in Sri Lanka expansion took place in the initial phases and thereafter the growth was driven by productive efficiency. In India, expansion in zones and export growth rates had been the slowest in the initial phase. Both productive efficiency and expansion contributed to export growth in the 1990s and 2000s. However the overall export growth rates remained below that of Bangladesh.

7.2.3. Export-Performance : Zone-Wise Analysis

Bangladesh : In Bangladesh, Dhaka is the best zone in terms of expansion of investment and employment and productive efficiency. Chittagong follow Dhaka. Though Comilla expanded faster than any other new zone, export performance of the zone has not been very impressive.

Table 7.8 : Zone-wise export performance (1998-2003) : A summary information

	Average exports (mill US \$)	Average exp/emp	Average exp/emp after controlling for K/L ratio (thousand US \$)
Bangladesh			
Chittagong	615.1	8.4	1.64
Daka	500.3	10.9	4.6
Mongla	2.6	9.3	-
Comilla	1.8	0.8	-
Sri Lanka			
Biyagama	278.3	10.0	3.6
Katunayake	769.4	12.9	6.24
Koggala	39.5	6.9	0.65
Malwatta	17.7	6.3	-
Mawatagama	0.4	0.5	-
Mirigama	16.5	11.2	-
Polgahawela	1.5	1.8	-
Wathpitiwala	13.5	6.6	-
Horana	1.6	2.9	-
India			
Kandla	127.2	8.0	0.3
Seepz	1098.9	30.2	1.1
Chennai	157.2	8.6	2.5
Noida	216.4	7.9	0.9
Cochin	60.3	7.8	1.8
Falta	29.0	10.2	-0.9
Vizag	41.1	13.0	

Source : Author's calculations based on available data

Sri Lanka: Katunayake appears to have performed most impressively both in terms of expansion as described earlier and productive efficiency. Biyagama followed Katunayake. Koggala expanded fast in the initial years due to highly attractive incentives given to the zones. But it failed to grow after the initial phases. Productive efficiency also remained low. As a result, overall export performance was unimpressive. Among the new zones, Malwatta, Mirigama and Wathupitiwela performed better than the other zones. Their exports have grown and the productive efficiency also is higher than the other new zones. Horana attracted substantial investment in general, FDI in particular but its export competitiveness is not impressive. Malwatagama and Polgatawela lagged behind the other zones in terms of attracting investment as well as in terms of productive efficiency.

India : Santacruz has shown the most impressive performance in terms of exports, employment and export per unit of employment both before and after controlling for the capital –employment ratio. Chennai, Kandla, Noida and Cochin followed it. Overall levels of exports are very small in Falta but in the terms of exports per unit of employment, it turned out to be one of the most productive zone. But this appears largely due to favourable capital labour ratio. Once the effect of capital intensity is controlled, its productive efficiency declines. Vizag has been slow in terms of expansion but it has shown good performance in term of FDI inflows and export performance.

7.3. *Sectoral Composition of Exports*

One of the objectives of EPZs has been to promote non traditional exports, especially in developing countries (Madani 1998). EPZs make up for infrastructural deficiencies and procedural complexities, offer a more conducive investment climate and are therefore expected to offset the disadvantages of higher costs of production in these countries. They are also expected to attract technology transfers which overcome some of the technological limitations of the firms in high tech sectors (Madani, 1998). Against that background, it is important to analyse the sectoral distribution of exports in zones across the three countries.

India : In the mid 1980s, engineering sector accounted for the largest share of exports followed by drugs, electronics and textiles in that order. By the late 1980s, the share of engineering goods started declining. Currently it is around 5% of total exports. The share of drugs also started declining in 1989 and fell from over 25% in the mid 1980s to around 5% by 1991. Decline in textile had been slow but steady. It declined from 15% in 1984 steadily to about 7% in 2002. In

Table 7.9 : Sectoral performance of the zones in selected years : India (1985-2002)

Year	Drug	Electron	Engineer	Gems	Textiles	Others
1985	24.1	19.3	39.0	0.0	14.2	3.4
1990	26.4	24.6	27.4	10.6	8.8	2.1
1995	5.2	30.3	27.9	25.1	6.8	4.7
2000	5.0	39.8	5.6	35.2	8.2	6.2
2001	6.2	33.6	4.7	35.2	10.2	10.1
2002	6.2	33.6	4.8	42.3	7.2	5.9

Source : author's calculations

contrast, exports of gems and jewellery rose rapidly. In 2002, they accounted for 42% of the total EPZ exports. Electronics exports also grew faster than the overall zone exports. As a consequence, their share almost doubled from 20% in 1984 to 40% in 1997. Thereafter, it fluctuated and in 2002 stood at 33%. Exports of other products, including leather products did not show any perceptible rise. Currently, only two sectors, electronics and gems and jewellery account for three fourths of the total zone exports. In the electronics sector, over 50% of total exports are currently accounted for by software.

Table 7.10 shows zone-wise sectoral distribution of exports. There have been unmistakable trends of increasing specialisation. Cochin tends to specialise in electronics (in particular hardware), Falta in textiles, Kandla in pharmaceuticals and Vizag in gems and jewellery. Santacruz is allowed to have only electronics and gems and jewellery units. The share of the latter has been increasing in the zones. Noida is also specialising in gems and jewellery while Chennai has electronics, engineering and textile units.

Table 7.10 : Sectoral distribution of exports by zone for selected years in India : 1991-2001

zones	year	Textiles	Gems	Engineering	Electronics	Drugs	Others
Cochin	1991	28.7	2.2	0.0	16.9	0.0	52.2
	2001	7.4	0.0	4.2	45.3	0.0	43.1
Falta	1991	1.3	10.3	0.0	29.1	0.0	59.3
	2001	61.7	0.0	7.3	1.0	8.7	21.3
Kandla	1991	22.2	0.0	11.2	0.0	65.1	1.5
	2001	11.5	0.0	7.4	0.0	67.5	13.6
Madras	1991	44.7	2.0	10.5	31.0	4.6	7.2
	2001	22.2	1.6	23.9	30.2	9.2	12.9
Noida	1991	7.9	24.1	5.2	22.8	17.9	22.1
	2001	11.8	27.8	11.8	32.3	2.6	13.7
Santacruz	1991	0.0	46.1	0.0	53.8	0.0	0.0
	2001	0.0	53.1	0.0	46.9	0.0	0.0
Vizag	2001	2.1	66.3	21.9	6.9	0.0	2.7

Source : Author's calculations

Sri Lanka : Unlike India, zones in Sri Lanka were highly concentrated in the initial phases with textiles and food processing units accounting for over 90% of the total exports. Gradually the

share of these units declined while that of chemicals, manufactured products and services increased (Table 7.11).

Table 7.11 : Sectoral Distribution of Zones' exports in Sri Lanka in Selected years (1980-2003) (%)

Sector	1980	1990	2000	2003
Food,Beverage & Tobacco	11.9	4.8	6.9	6.0
Textile,Wearing Apperal & Leather	79.7	64.4	46.3	49.8
Chemicals, Petoleum, Coal,Rubber & Plastic	2.3	4.8	16.0	12.9
Non-Metalic, Minerals Products	0.2	10.3	4.8	3.5
Manufactured Products (N.E.S)	2.1	6.8	13.4	8.4
Services (Includes Agricultural Projects)	3.8	4.5	10.5	11.5
Others	0.0	4.4	2.0	7.9
total	100	100	100	100

Source : author's calculations based on BOI data

Unfortunately we do not have sector-wise export data for the individual zones. Sector-wise *investment data* for the year 2003 however shows that in Katunayake and Biyagama the share of textiles in total investment in 2003 was 48% and 55% respectively. Katunayake appears to be the most diversified sector with diversification index (10000 - HHindex) of 7122. Biyagama is less diversified at 6325. Thus the process of diversification is apparent in the two oldest zones but textile remains the leading sector. Koggala, another zone set up in 1991 is highly concentrated with apparel units, which are primarily tailoring shops.

Among the new zones, Mawathagama and Polgatawela are occupied by only textile and leather products. Other zones namely Malwatte , Mirigama, wathupitiwela and Horana are more diversified. However, each zone is dominated by one or two sectors. Mirigama and Horana focus on fabricated metal, machinery and transport equipments, Horana on wood and wood products, Malwatte on manufactured products and Wathupitiwela on chemicals and plastics. Unlike India, Sri Lanka zones are getting diversified but this could partly be due to the establishment of the new zones, which are dominated by sectors other than the textile sector.

Bangladesh : Sectoral break up of exports in Bangladesh reveals that the zones in this country are dominated by textile sector units. These include , garments, caps, knitting and

garment accessories. The share of these sectors increased from 75% in 1995-96 to 87.7% in 2003-04.

Table 7.12 : Sectoral Distribution of Zones' exports in Bangladesh in Selected years (1980-2003)

Sector	1991-92 (%)	2003-04 (%)
Fishing Reel & Golf Equipment	6.2	0.8
Total textiles	75.0	87.7
Textile mfg.	13.1	21.2
Terrytowel	9.7	2.9
Garments	45.7	44.6
Knitting & other textile products	3.0	8.5
Garments accessories	0.0	4.0
Caps	3.3	6.6
Ropes	0.0	0.4
Tent	7.3	2.9
Metal Products	1.7	0.9
Electronics & Electrical Good	3.4	2.9
Plastic Goods	0.3	0.7
Footwear & leather Goods	6.3	3.0
Furniture	0.0	0.8

Source: Author's calculations : BEPZA

The share of all the sub sectors within textiles increased with the only exception of terry towels and (to a lesser extent) garments. On the other hand, the share of all other sectors (except furniture and plastic products) declined in total zone exports of the country.

The contribution of textile sector has increased from 93% in 1995-96 to 98% in 2003-04 in Dhaka EPZ. In Chittagong it remained almost stable at 75%. There are units in the electronics, fishing reel and golf equipments, tents and metal products also but their share varies between 2% to 6%. Among the new zones, Comilla is dominated by textile units, which contribute over 85% of the total exports. Mongla has only Agro product units. This could be due to cash incentive offered by the government on Agro based products in the new zones.

Sectoral patterns in zones' exports across the three countries reveal that the Bangladesh zones are the clusters of textile related units. Of late, there has been some diversification in the

zones though it is in vertical direction. For instance, accessories-producing units are being set up in the zones. Sri Lanka zones were occupied mainly by textile units in the initial stages. However, there has been diversification of the zone exports in recent years. New zones are being set up that are dominated by units in other sectors. In India, on the contrary, zone exports were relatively diversified in the initial phases. Subsequently, gems and jewellery and electronics emerged as the dominant sectors. Zone –wise analysis also reveals an increasing tendency towards specialisation though the degree of specialisation varies across the zones. Thus while other countries are expanding the scope of the zones (vertically or horizontally), India seems to be facing the reverse trends. Zone level specialisation however has important policy implications that we shall discuss later.

8. Variation in the Zone Performance : Our Hypotheses

In this Section we shall attempt to address the crucial question “ what factors determine the success of the zones?” While doing this, we shall examine the zone performance within a broad framework of the new theories as discussed above. These theories suggest that EPZs are benefited usually from better location, modern and efficient infrastructure, general fiscal and non fiscal concessions to firms and single window facilities to ensure corruption and red tape free business environment. These factors ensure good investment climate. This in turn helps in reducing the costs of exporting and, hence enhance competitive advantages of firms in the zones.

Good investment climate may also be crucial for attracting FDI (Goswami et al 2002) in the zones. The standard literature holds that market related factors are more important for domestic market seeking investment while cost related factors (Reuber et. al 1973, Nankani 1979, see also Dunning 1993) may explain export oriented investment more significantly. This is particularly true for low cost developing countries¹⁰. In practice, export oriented FDI in developing countries is cost efficiency seeking and remains essentially labour /resource intensive. Export oriented FDI in these countries may also take the form of relocation of some of the production facilities. MNEs seek locations where they can combine their mobile resources most efficiently with the immobile resources they need to produce goods and services

¹⁰ In the case of developed countries acquisition of strategic assets provides the major investment motive.

(UNCTAD 1998, p.11). The location of investment then becomes more responsive to the factors that ensure lower costs of production and the availability of complimentary factors of production. Since zones provide the platform for low cost production, they are expected to be successful in attracting FDI.

In our survey we asked the firms “what was their motive of investing in the zones?” Analysis of their responses reveals that securing lower production base was the most important motive for their investing in the zones.

Table 8.1 : Importance of securing low production base as motivation for investing in the zones : Investors’ perspective (% of respondents)

	Not important	Somewhat important	Very important	Most important
India				
Securing low cost production base	3	9	41	47
Other reasons	Securing a regional production base to serve nearby markets			
Sri Lanka				
Securing low cost production base			10	90
Other reasons	Unutilised MFA quota, FTA with India			
Bangladesh				
Securing low cost production base				91
Other reasons	Environment laws, GSP to EU, quota free items,			

Source : Primary surveys

Thus, the zones’ performance in attracting investment and promoting export competitiveness seems to be directly related with the location, infrastructure facilities, quality of governance and the incentive package. In addition to the above factors, zone specific characteristics such as the size and level of diversification may also affect the performance of the individual zones. We therefore identified five sets of determinants of zones’ success: location specific factors, quality of infrastructure, quality of governance, incentive package and the zone specific characteristics. In what follows, we propose our hypotheses.

Location Specific Factors

Early proponents of EPZs considered them as potential hubs for non urban, decentralised industrial development. They favoured placing EPZs away from urban and industrial centres. International experience however suggests that if EPZs are located in backward areas with poor social and economic infrastructure and lack of industrial culture their performance is likely to be below expectation. For instance, it is argued that the growth in Hainan SEZ in China was rather slow due to its location in backwardness region (OTA, 2003). Bataan zone in Phillipines (Madani 1998), Puerto Limone zone in Costa Rica (Ryan et. al, 1993) and Franche d'Inga zone in Zaire (Madani 1999) and Dakar EPZ (Cling and Letilly 2001) are also examples of poor location. All these zones failed to achieve success.

Locating EPZs near or in industrial/urban areas is also likely to be an important factor critical to their success. This satisfies the labour needs of the zone firms, ensures more accessible and uninterrupted utilities, better services and allows for more spillover effects. Furthermore, if EPZs are located near ports or airports they are expected to be more attractive than other industrial sites and are likely to show better export performance.

Finally, country specific factors such as the level of development of the country, availability of cheap labour and raw materials and overall policy regime also confer locational advantages on producing firms. The level of development reflects the investment climate in a country and may be crucial in determining the success of the zone. Efficiency seeking or export oriented investments may be influenced by the availability of cheap labour also. Several studies examined the effect of wages on FDI inflows. However the results are ambiguous (See for instance, Dunning and Buckley 1977, Dunning 1980, Papanastassiou and Pearce 1990). In a recent study on India, however, lower wages emerged a significant determinant of export oriented FDI. It did not turn significant in explaining the domestic FDI inflows (Aggarwal 2004b). Finally, it is also suggested in the literature that if EPZs are evolved in the export oriented regime (as in Sri Lanka and Bangladesh), they are more likely to succeed (Madani 1999). However, the anecdotal evidence is not unambiguous. In Mauritius EPZs were implanted in a highly protective regime but they churned out success stories. Subramanian and Roy (2001)

argued that it was because the government completely segmented the import competing and export sectors and promoted EPZs through heavy intervention through liberal incentives, good governance and labour market policies. Thus the effect of this variable is not unambiguous.

In sum, in this study , we include the following location specific factors.

Region specific location factors : Development of the region (RPCY) in which zone is located and Industrial culture in the region (INDUSCUL).

Strategic Location specific factors_: Proximity of the zone to ports, and airports and proximity to a bigger city (LOCINDEX).

Country specific location factors: development of the country (CPCY), Labour cost (WAGES), availability of raw materials (RAW), Policy Regime (POLREG).

Quality of Infrastructure

The term ‘ infrastructure’ includes physical infrastructure within the zone, physical infrastructure external to the zone and social infrastructure within the zone. Physical infrastructure within the zone includes: water, electricity, warehousing, transport within the zone, telecommunication , police station , fire station and banks while physical infrastructure external to the zone includes : transport facilities for the zones, roads leading to the zones and port facilities. Social infrastructure within the zone comprises of residential complexes, schools, hospitals and recreation facilities.

Availability of good quality infrastructure improves the business climate by reducing the costs of operations and hence raising rates of returns. The favourable role of physical infrastructure in influencing the number and the size of FDI has been corroborated by recent studies (for instance, Loree and Guisinger 1995, Mody and Srinivasan 1996, Kumar 2003). Being efficiency seeking in nature, export oriented FDI could be more sensitive to the level of development than overall FDI (see Kumar 2003, Andersson and Freriksson 1995). The favourable impact of

infrastructure facilities on economic performance is also documented in the literature (Mitra et. al 1998). We thus predict that the effect of physical infrastructure on the zone's ability to attract FDI and export performance would be positive. The presence of housing, schools, hospital and recreation facilities are also likely to influence the level of investment and economic performance of the zone's performance significantly. We therefore include variables representing three types of infrastructure namely,

economic infrastructure within the zone (Z-INFRAST),
infrastructure external to the zone in the rest of the economy (D-INFRAST), and
social infrastructure (SOCINFRAST)

Quality of Governance

The literature on EPZs is insistent that a streamlined, prompt and efficient bureaucracy and custom controls in all stages of the creation and running of an EPZ is crucial to its performance. It greatly influences the attractiveness of a zone to foreign investors and its eventual performance. The provision of efficient bureaucratic and economic services, a clear and transparent legal and regulatory structure and an unfettered and stable policy framework ensure the success of the zones. However, as discussed above, the units need to interact not only with the zone administration but also with the government departments outside the zones. We therefore include zone governance (Z-GOVERN) and governance in the rest of the economy (D-GOVERN) separately in our analysis and expect that the quality of governance at both the levels affects the performance of the zones favourably.

Policy Concessions

A major preferential treatment is given to EPZ units by granting them the government policy concessions. Governments offer a multitude of fiscal and non fiscal concessions. Fiscal concessions include duty free imports of raw and intermediate inputs and capital goods and income tax exemptions. Non fiscal incentives vary widely across countries. These include, relaxation from industrial laws including labour laws in many countries. The theory behind these incentives is that liberalising the rules and tax commitments lowers direct and indirect costs.

Fiscal incentives have direct bearing on the cost. These incentives may help in directly reducing the costs of producing and exporting. Non fiscal incentives affect costs indirectly. These concessions expedite the decision making, and streamline day to day operations. Investor friendly custom regime for instance implies that the entrepreneurs are free from routine inspections of import- export cargo. Relaxations in labour market help in reducing labour market rigidities and may affect the labour productivity. In a distorted economy these concessions are used to offset anti export bias. Zones are termed 'international laboratories' in which developing countries liberalising their economies can experiment with highly liberal trade and industrial policies while changes in national policies may be slow. Governments can therefore play a crucial role in putting into place an export-friendly 'enabling environment'. We therefore hypothesise that the more attractive is the incentive package(*CONCESSION*), the better will be the performance of the zones.

Zone specific characteristics

Size (SIZE) : Generally, it is believed that only a large sized zone can generate economic activity on some reasonable scale. In a small zone, the requisite infrastructure and services cannot be provided nor can multiple economic activities be promoted. Size of the zone (SIZE) therefore is expected to be positively related with the performance of the zone.

Concentration of economic activities (CONCEN): Cluster approach suggests that highly concentrated zones are more likely to succeed. External economies of scale and other advantages of the cluster help the operating firms in reducing costs and acquiring competitive advantages. Thus the lower the extent of diversification of the zones in a country, the greater may be the advantages that firms reap from the clusters. However, there is also another view, which suggests that diversification of economic activities in a zone may act as a hedge against the risk of fall in the international demand for a specific product. Furthermore, it also implies diversification of countries to which exports may be directed. It is argued that one of the reasons for the failure of the Dakar EPZ was the obligatory concentration of investments in a precisely defined areas (Cling and Letilly 2001). Therefore, we do not hypothesise any specific relationship between the extent of diversification and the zone performance.

Capital intensity of the zone (CAPINT) : In labour- abundant South Asian countries, zones are likely to attract labour intensive investment. Sectoral decomposition of zones' exports discussed above also suggests that these countries have been attracting labour intensive production in the zones. In such a scenario, capital intensity may vary largely due to different techniques of production or the scale of production. High capital intensity may imply the use of relatively more sophisticated technology, better quality control (Wells 1973, Keddie 1976) or larger scales of production. Capital intensity may, therefore, be related positively with the export performance of zones.

We use the following model to examine the factors that might have had a significant effect on the performance of the zones in South Asia.

$$\text{PERFORM}_{\text{zone}} = f(\text{RPCY, INDUSCUL, LOCINDEX, CPCY, WAGES, RAW, POLREG, Z-INFRAST, D-INFRAST, SOCINFRAST, Z-GOVERN, D-GOVERN, CONCESSION, SIZE, CONCEN, CAPINT}) \dots\dots\dots(1)$$

Where

$$\text{PERFORM}_{\text{zone}} = \text{Export performance and FDI inflows}$$

9. Research Methodology and Empirical Results

Analysis of the relevance of the above factors in determining the performance of the zones would be done using two different techniques. These are,

- the primary survey based technique, and
- the secondary database analysis technique

In what follows we shall explain the two methodologies and the results obtained from these methodologies.

9.1. Primary Survey Based Analysis

The primary data based analysis would help in assessing the investors' perspective on what they consider is important in determining the investment climate in the zones. Primary survey technique is important because it provides a perspective on the importance of various aspects of the facilities provided by the zones from the producer's point of view. Table 9.1 shows the zones covered and the number of units covered in the analysis.

Table 9.1 : Sample of zone units covered in the primary survey

Country	Zones covered	No .of units in EPZ	No. of units surveyed	No of foreign units
India	All	730	257	74
Sri Lanka	Katunayake Biyagama Koggala	153	22	22
Bangladesh	Dhaka Chittagong	191	12	12

In our questionnaire we included questions pertaining to the first four sets of factors namely : location specific, infrastructure, governance and policy concessions. In other words, we asked the units in the zones to evaluate the relevance of various aspects of infrastructure facilities, location, fiscal and non fiscal incentives and governance in determining the attractiveness of the zone. We also asked the units to evaluate the importance of the availability of raw materials and overall investment climate in the country. Their responses are summarised in Table 9.2. Questions on zone-specific factors were not included in the primary survey. Their importance is tested in the secondary data based analysis.

Table 9.2 : Evaluation of the factors crucial for the success of the zones : Investors' perspective

India						
	Mean response	% of respondents				
Factor		Not important	Important	Very important	Most important	Total
Physical infrastructure within the zone	4.02	0	5	35	60	100
Infrastructure external to the zone	4.00	0	8	33	59	100
Social infrastructure	2.03	43	13	14	31	100
Availability of raw materials	3.40	11	14	39	36	100
Proximity to port, airport and bigger cities	4.00	4	8	32	56	100
Regional development	3.95	7	16	34	43	100
Tax concessions	4.3	6	5	22	67	100
Subsidies	2.4	51	7	15	28	100
Exemption from other industrial laws	3.6	16	12	27	45	100
Governance of the zone	4.11	1	9	35	55	100
Policy Regime	3.79	8	25	36	31	100
Sri Lanka						
	Mean Response	% of respondents				
Factor		Not important	Important	Very important	Most important	Total
Physical infrastructure with the zone	4.74	0	0	26	74	100
Infrastructure external to the zone	4.74	0	0	26	74	100
Social infrastructure	2.56	33	33	22	11	100
Availability of raw materials	2.94	0	72	28	0	100
Proximity to port, airport and bigger cities	4.33	0	11	39	50	100
Regional development	3.24	0	58	37	5	100
Tax concessions	4.33	0	11	44	44	100
Subsidies	3.17	11	43	29	17	100
Exemption from other industrial laws	3.3	13	11	31	45	100
Exemption from labour laws	4.00					
Governance of the zone	4.53	0	0	56	44	100
Policy regime	3.06	12	47	18	24	100

Bangladesh						
	Mean response	% of respondents				
Factor		Not important	Important	Very important	Most important	Total
Physical infrastructure with the zone	4.50	0	0	44	56	100
Infrastructure external to the zone	4.56	0	0	38	63	100
Social infrastructure	2.89	10	40	40	10	100
Availability of raw materials	3.44	0	56	44	0	100
Proximity to port, airport and bigger cities	4.00	0	30	40	30	100
Regional development	3.80	0	40	30	30	100
Tax concessions	4.33	0	0	67	33	100
Subsidies	3.89	0	33	44	22	100
Exemption from other industrial laws	4.00	0	25	50	25	100
Exemption from labour laws	4.90	0	0	10	90	100
Governance	4.22	0	0	78	22	100
Policy regime	3.01	13	50	20	17	100

Source : Primary surveys

There are striking similarities in the response pattern across the three countries. As expected, all the four sets of variables emerged important. However, the survey revealed that all aspects of the four sets of factors are not rated equally important. A detailed account of the primary survey based results will be provided in the following subsections.

9.1.1. *Infrastructure*

Of the three categories of infrastructure, physical infrastructure within the zone and that external to the zone were rated equally important. Almost all the respondents considered them ‘very important’ or ‘the most important’. This has an important policy implication. It suggests that it is not the internal infrastructure only that needs to be taken care of but rather, infrastructure connecting the zone to the wider economy should also be developed for the export competitiveness.

Social infrastructure, on the other hand, is not rated high in any of the three countries. Most respondents were against the idea of having an elaborate social infrastructure within the zone. They feared that it could pose security problems and destroy industrial culture of the zones. They felt that such infrastructure should be in the vicinity of the zones. Most investors suggested that the government may acquire land in the vicinity of the zone and develop residential complexes and other social infrastructure there. Zones should remain exclusively for manufacturing activities.

9.1.2. Location

We asked several questions pertaining to the location of the zones and effect of the country specific factors on the attractiveness of the zones. Investors suggested that the zones should be close to bigger cities. It is not important that they should be located in developed region. It was argued for instance that Chittagong was located in an underdeveloped region near a well

Table 9.3 : Evaluation of the importance of location specific factors

	Mean Response	% of respondents			
		Not important	Important	Very important	Most important
Within the developed region	3.4	7.4	19.6	36.4	36.7
Proximity to a bigger city	4.2	0.0	10.8	28.3	61.0
Distance from airport	3.9	3.0	8.9	35.6	52.5
Distance from port	4.0	9.8	8.2	19.7	62.3
Distance from railway station	3.8	6.5	12.9	32.3	48.4
Proximity to Well developed industrial clusters	3.9	10.0	10.0	25.0	55.0

developed commercial city of Chittagong. Gradually the region also developed commercially. Biyagama was cited as example in Sri Lanka, which was a village but due to its proximity to Colombo it worked well. Noida was also located in a backward region but its proximity with Delhi benefited the zone. The presence of government offices, better residential and banking facilities and cosmopolitan nature of the city attract foreign investors to the zones near bigger cities. Presence of other industrial clusters within the regions are also likely to benefit the zone

units in terms of support services and labour availability. Thus the spill over effects of the bigger city are stated to have a significant impact on the zone attractiveness.

While responding to the questions on the strategic location of the zones, investors rated proximity to the ports and airports lower than the proximity to a bigger city. The argued that if the roads and transport facilities linking the zones with the ports and airports are developed then, the proximity to the ports/airports is not very important. However, many of them pointed out that the proximity to ports is more important than to airport or railway station. This is simply because much of the trade is routed through ports.

As discussed above, availability of cheap raw material is an important location specific factor. We therefore sought investors' perspectives on the availability and cost of various factors of production. The results are summarised in Table 9.4. As expected, availability of cheap labour and lower real estate and overhead costs were stated to be the most important factors among factor availability factors. One must observe that availability of skilled labour was not ranked high. When we probed , it was revealed that it is not the skilled labour per se that is important but rather the educated labour that matters. Most companies found it a better option to train the educated labour. In all the countries , respondents found labour to be extremely intelligent and disciplined.

Table 9.4 : Evaluation of the factor availability and factor cost : Investors' perspective

	Mean Response	% of respondents			
		Not important	Important	Very important	Most important
Lower real Estate cost	3.8	6.67	11.66	36.67	45
Lower wages	3.6	9.52	9.52	41.26	39.68
Availability of skilled labour	3.1	7.69	12.31	43.08	36.92
Availability of cheap raw materials	2.5	15.79	40.79	28.35	15.07
Domestically mfd. Parts and components	3.0	15.79	24.05	32.09	28.07
Availability of concessional finance	2.0	25.86	22.24	25.86	26.03

Availability of cheap raw materials was considered desirable but not very/most important. This was because many units were importing raw materials. This was true for Bangladesh and Sri Lanka in particular. In both these countries, textile units are importing nearly all raw materials that they require. Thus the zone investment in these countries is mainly cheap labour seeking and not resource seeking. Finally, concessional finance was not considered important for the obvious reasons.

We also asked questions on the importance of overall policy regime. Investors do not feel that the macroeconomic policy regime in the rest of the economy affects the zone success (Table 9.2). However political stability and stable law and order conditions were stated to be very important by a majority of the respondents.

Table 9.5 : Evaluation of institutional factors

	Mean Response	% of respondents			
		Not important	Important	Very important	Most important
Political stability and law and order conditions	3.9	3	19	47	31

Better law and order conditions were stated to be very important for better zone performance in Bangladesh. This was due to worsening law and order conditions in the rest of the economy. The prevalence of mussels in the state affects the investment climate adversely. The zones provide them secured business environment. Interestingly this factor emerged important for India also. In Sri Lanka however this was not an important factor affecting the performance of the zones.

9.1.3. Incentives

Sometimes it is argued that companies are not attracted by incentives per se and that good infrastructure and cheap labour availability are important (ICIR, 1992). Results of our surveys, however, show that fiscal incentives are considered very important in determining the attractiveness of the zones. Most respondents however rated tax benefits much more important than subsidies or grants. Around 90 percent of the respondents in India and Sri Lanka and 100%

in Bangladesh regarded tax incentives very /most important. In India , the mean response to this factor is higher than even infrastructure. In Bangladesh and Sri Lanka, it appears to be the second and the third most important factor respectively, in determining the attractiveness of the zones. Sri Lanka and Bangladesh governments attracted foreign investors by offering liberal incentives in the initial stages. As described above, these countries offered additional incentives to difficult zones to compensate for the poor location. This policy did have some effect on investment in the zones *albeit* small. Koggala in Sri Lanka has a very poor location and is regarded as the most difficult zone. However due to liberal incentive it did succeed in attracting FDI.

In India, on the contrary, a highly restrictive package was offered to zone units at the time when tax rates and protective barriers were very high in the rest of the country. Even FDI norms were also not relaxed for the zones. This perhaps contributed to the failure of the zones in attracting FDI. Later, when policy barriers were relaxed in the rest of the economy, zones were also given benefits of liberalisation but this might not have ensured higher relative advantage to the zone units vis-à-vis the rest of the economy.

One must also note that cash subsidies/ grants are considered less effective. Over 51% of the respondents in India opined that subsidies and grants are not important at all. In Sri Lanka and Bangladesh however a greater percentage of respondents regarded them important/ very important.

Exemption from other industrial laws was also considered very important in India and Bangladesh. Interestingly, in Sri Lanka it was not rated high. However, exemption from labour laws was considered a very crucial factor in all the three countries. This was not unexpected. Literature provides several examples (Panama, Brazil, Gambia, Jamaica) of failure which could partially be due to highly regulated labour markets (Watson 2001). Almost all the respondents in Sri Lanka and Bangladesh and 90% in India rated them very/most important factor. We also asked ‘ which labour laws are more constraining for their business. In India, majority of them found all the labour laws constraining. However, the Factories’ Act and the Industrial Dispute Act scored over the others. Over 60% of the respondents feel that these two are major Acts constraining their business. In Sri Lanka, the Trade Union Act and the Rules related to leave,

working hours, overtime and overtime payments were stated to be most constraining. Though the zone administration has discouraged the formation of labour unions, such possibility is not ruled out by entrepreneurs in future. In Bangladesh, zones until recently, were exempted from the Factories act, Industrial Dispute Act and Employment Act. Labour reforms are introduced recently in the zones and zone units are now asked to have labour councils to improve the bargaining power of the labour. However, all the respondents in our survey feared that this would affect their business extremely adversely.

9.1.4. Governance

Good quality governance is another factor that emerged crucial in determining the success of the zones. In India and Bangladesh it is ranked third most important factor, in Sri Lanka surveys on the other hand, it emerges the second most important factor after infrastructure. Questions on various aspects of governance are summarised in Table 9.6. It reveals that single window clearances (pre entry, and post entry) and custom clearance facilities are rated highest. In Bangladesh and Sri Lanka, the EPZ authorities provide almost single window clearance facilities but custom department is not under the zone authorities. Most respondents as discussed above complained about the attitude of these officials, work culture of the department and frequency of irregular payments. In both Sri Lanka and Bangladesh, the custom office closes at 4-5 p.m. There is no clearance after that. This may delay the clearance by 1 to 2 days. Most people suggested that it should work round the clock and should be brought under the zone authorities. Most investors thus emphasised on the need of bringing all administrative responsibilities under the zone governance.

Table 9.6 : Evaluation of governance : Investors' perspective

	Mean Response	% of respondents			
		Not important	Important	Very important	Most important
Single window clearances	4.2	3.08	9.23	23.08	64.62
Custom clearance	4.0	4.55	12.13	25.76	57.58
Simplified rules	3.6	8.06	14.52	32.26	45.16
Accessibility to rules	3.9	4.84	8.06	37.1	50.0
Easy information on zones	3.8	1.56	12.5	31.26	54.69

Among other governance related investors view simple rules and accessibility to these rules very/ most important.

In sum, the primary data analysis provides a valuable insight on the factors determining the investment climate in the zones. Two things may be observed. One, all the four sets of factors namely better location, infrastructure, governance and an attractive incentive package are rated almost equally important in determining the attractiveness of the zones. It is the package of all these complementary services that ensures success of the zones. Two, various aspects of location, facilities and incentives are rated differently. This has an important policy implication that we shall discuss later.

Though the primary survey technique provides us useful information on the factors determining I-climate, it does not shed light on the significance of these factors in determining various aspects of the zones' performance. It focused on the broad aspect of attractiveness of the zones. In the following section therefore, we shall use the econometrics analysis based on the secondary data and explore the significance of various factors in determining the two different aspects of zones' performance namely exports and investment.

9.2. *Secondary database analysis*

For the econometric analysis, we adapted the framework specified in equation (1) to the present context and identified variables for empirical testing. The empirical estimation is conducted at two different levels : country level and the zone level. Since the quality of governance, factor cost, incentives and infrastructure are largely country specific, these factors are included in the country-level analysis. The role of some of the location specific factors and zone specific characteristics is tested in a zone level analysis.

9.2.1. *Country level analysis*

We pooled the aggregate zone data on exports and investment across the three countries for a period over 1991 to 2002. Due to non availability of FDI data at the aggregate level (as in

India) and at the zone level (as in Bangladesh and India), we decided to use total investment as a proxy for FDI. Since FDI constitutes over 80% of the zone investment in Sri Lanka and Bangladesh, total investment provides a good proxy for FDI. In India FDI constitutes a small proportion of total investment. In recent years however, there has been a substantial increase in FDI in India also. The implicit assumption in the analysis therefore is that FDI is positively related with total investment in the zones in India.

For the qualitative variables namely infrastructure, governance and incentives, we created indices based on our primary survey. As discussed above we asked questions to seek the entrepreneurs' perspective on the quality of infrastructure and governance. For creating a single index for governance (Z-GOVERN) we gave equal weighted to different aspects of governance and worked out a mean response. For infrastructure however, we found that the importance of water varied widely. We used the weighted average of units' perspective on water and gave equal weightage to all other provisions of infrastructure and combined them in a single mean value (Z-INFRAST). We found that the patterns indicated by the quantitative evaluation of these factors are similar to those yielded by our descriptive analysis.

For quantifying the status of overall infrastructure (D-INFRAST) we depended on Kumar (2003). He provides infrastructure indices for a number of developed and developing countries at three points of time 1982, 1984 and 1994. We found that the change in the overall infrastructure indices were very small . Therefore we used the figure for 1994 to approximate the quality of overall infrastructure in the rest of the economy across the three countries. For the overall governance (D-GOVERN) index on the other hand, we used the World Bank Institute Report on the Governance and Corruption (2003). This report provides separate indices for different aspects of governance. The series starts from 1996. We used a mean of four indices: Effectiveness of the government, rule of law, regulatory quality and control of corruption to create a single proxy for overall governance for each of the three countries.

Proxy for incentives was based on the theoretical discussion on incentives. Attractiveness of incentives implies the relative benefits enjoyed by EPZ units vis-à-vis the rest of the economy. Bangladesh offers the most attractive incentive package. EPZ units in Bangladesh are enjoying

huge relative benefits vis-à-vis domestic units. Sri Lanka also offered an attractive package till the late 1990s but the incentives were later withdrawn. India on the other hand enhanced its incentive package in the late 1990s and early 2000s. Until the early 1990s, Sri Lanka units were also enjoying high relative benefits but in the late 1990s, their relative benefits declined while in India they remained almost the same. We assigned numbers 1,2 and 3 depending on the attractiveness of the package.

In addition to these variables, we included country level per capital income (CPCY) and industrial culture (INDUSCUL) to examine the effect of overall investment climate in the country. INDUSCUL was measured quantitatively by the share of industry in total GDP. Earlier a World Bank study (Goswami et al. 2002) on the states' competitiveness in India has shown that better developed states have better investment climate. For examining the effect of labour cost, we included a variable of minimum wages at the country level. In Bangladesh and Sri Lanka these are specified by the apex bodies, BEPZA and BOI respectively. In India, however we have taken the average of state-wise minimum wages. Only those states are included in the exercise, which have zones. Finally, following the existing literature on FDI and exports we have included exchange rate (X-RATE) as a control variable in the model. Policy regime in standard literature is measured by the import to GDP ratio and FDI inflows. However, due to high correlation of these variables with other variables and limited degrees of freedom, we decided not to include them in our analysis.

Our country-level model there is as follows.

$$\text{Perform}_{\text{Zone}} = f(\text{Z-GOVERN}, \text{D-GOVERN}, \text{Z-INFRAST}, \text{D-INFRAST}, \text{CONCESSION}, \text{CPCY}, \text{WAGES}, \text{INDUSCUL}, \text{X-RATE}) \dots\dots\dots(2)$$

We also attempted an alternative model by using relative factors for governance and infrastructure i.e. Z-GOVERN relative to D-GOVERN (R-GOVERN) and Z-INFRAST relative to D-INFRAST (R-INFRAST). CONCESSION is already in relative terms. Thus the alternative model is ,

$$\text{Perform Zone} = f(\text{R-GOVERN, R-INFRAST, CONCESSION, CPCY, WAGES, INDUSCUL, X-RATE}) \dots \dots \dots (3)$$

Panel data of 14 years across three countries yielded 42 observations. To control for the time effect and unobservable country-specific effects, we used the panel data analysis. Generalised least square (GLS) methods were used to estimate the three models. Empirical results are presented in Table 9.7 and 9.8¹¹.

I-equation

Total investment is used as an independent variable in Model (2) and Model (3). To control for the total size of the zone sector, we included total employment as another control variable along with the exchange rate. The results are presented in Table 9.7.

Table 9.7 : GLS estimates explaining variations in I using country-level panel data

Variable	A	B	C	D
EMPLOYMENT	0.90 (30.26) ^a	0.87 (28.26) ^a	0.86 (28.0) ^a	0.88 (29.1) ^a
R-INFRAST	4.60 (5.17) ^a	1.42 (13.64) ^a	0.90 (12.12) ^a	
Z-INFRAST				-1.69 (-13.64) ^a
Z-GOVERN		0.21 (3.9) ^a		0.46 (6.60) ^a
R-GOVERN	0.02 (3.9) ^a			
CONCESSIONS			0.13 (3.6) ^a	
CPCY	0.26 (3.25) ^a	0.20 (3.24) ^a	0.25 (3.25) ^a	0.30 (4.7) ^a
CONSTANT	-3.27 (-8.18) ^a	-5.98 (-13.31) ^a	-6.01 (-13.17) ^a	-6.38 (-13.45) ^a
NO. of Observations	41.00	41.00	41.00	41.00
Wald chi2(5)	2971.75	2977.75	2972.75	2975.75
Log likelihood	54.55	55.09	53.28	53.58

^a significant at 1%

¹¹ One caveat : econometric exercise carried out in the analysis is subject to various limitations due to the nature of the variables and data availability and therefore results need to be interpreted with caution.

Wages were not found to be significant in any combination and hence was dropped. Thus labour cost after controlling for other variables is not significant in attracting investors. INDUSCUL was also insignificant/ significant with a wrong sign in the presence of CPCY and hence was dropped. Country level per capita income turns significant in all the above specifications. Country level I-climate is therefore an important factor attracting investment in the zones. Of the three key variables, CONCESSIONS emerged significant. Thus, the greater the advantages enjoyed by the zone units compared to the domestic units, the greater is the investment attracted by the zone units. Furthermore, zone governance turns significant both as an absolute variable (Z-GOVERN) and as relative to the overall governance index (R-GOVERN). It is therefore one of the most important variables explaining investment in the zones. However, the infrastructure variable yielded an interesting result. Z-INFRAST emerged significant with a wrong sign while R-GOVERN turns significant with a positive sign. It suggests that the more developed the infrastructure facilities within the zone relative to the rest of the economy, the greater is the attractiveness of the zones. Zone infrastructure alone does not explain investment inflows. X-RATE remained insignificant and hence was dropped from the analysis.

In sum, the significance of R-GOVERN, R-INFRAST and CONCESSIONS suggests that higher the relative benefits of the zone units as compared to the other domestic units, the greater will be the attractiveness of the zones after controlling for all other country specific factors. This is perhaps the reason why Bangladesh has been attracting massive investment. Sri Lanka attracted investments in the initial stages of development while India has remained a poor performer in attracting investment. Units in India had not been allowed to enjoy huge relative benefits until the late 1990s. There has been some momentum in the EPZ (SEZ) policy after 2000 and the effect of the change in the policy is reflected in investment expansion in the zones.

Export Equation

Table 9.8 presents findings for the export performance. Two dependent variables were used for the analysis namely total exports and export per unit of employment (export competitiveness). Model (2) worked well in explaining the export performance. This is in

contrast with the investment equation where model (3) was found to be more appropriate. Equations a and b are for the total exports while equation c and d are for the export

Table 9.8: GLS estimates explaining variations in zones' export performance using country level panel data

	TOTAL EXPORTS		EXPORTS/EMPLOYMENT	
	a	b	c	d
INVESTMENT	0.50	0.40	0.52	0.49
	(1.86) ^c	(1.80) ^c	(1.84) ^c	(1.83) ^c
EMPLOYMENT	0.73	0.71	-0.27	-0.24
	(2.91) ^a	(2.81) ^a	(-1.06)	(-1.05)
CONCESSIONS	0.69	1.19	0.61	1.09
	(3.53) ^a	(4.43) ^a	(3.23) ^a	(4.23) ^a
D-INFRAST	9.66		5.66	
	(6.77) ^a		(4.1) ^a	
D-GOVERN		2.88		2.25
		(6.21) ^a		(5.96) ^a
X-RATE	0.23	0.22	0.23	0.20
	(2.61) ^a	(2.60) ^a	(2.59) ^a	(2.51) ^a
CONSTANT	4.10	-6.60	4.12	-6.56
	(4.86)	(-3.60)	(4.66)	(-3.45)
no obs	40	40	40	40
Wald chi2(5)	2354.28	514.99	2352.28	510.21
Log likelihood	32.27	31.27	32.05	31.01

competitiveness. The size variables investment and employment are included to control for the zone expansion. Among the key variables, incentives are significant in all the equations. Interestingly, Z-INFRAST AND Z-GOVERN did not turn significant and hence were dropped. R-INFRAST and R-GOVERN also were insignificant. These were D-GOVERN and D-INFRAST that turned significant with a positive sign. This is another interesting finding of the study. This could explain why export competitiveness of Bangladesh was the lowest as compared with the other two countries even if they are attracting substantial investments in the zones.

Among the control variables, both INVESTMENT and EMPLOYMENT are significant in a and b for obvious reasons. In equations c and d however only investment remains significant. Thus export competitiveness increases with higher investment and not with higher levels of employment. This result is explored later at the zone level also through the inclusion of a capital intensity variable. Exchange rate another control variable is also significant with the right sign.

Our results reveals that the relative advantages enjoyed by the EPZ units vis-à-vis the rest of the economy attract investment in the zones while overall governance and infrastructure facilities in an economy determine the export competitiveness of the zones. This suggests that zones should not be treated as alternative to overall development at least in the long run. For a sustainable growth of the zones, infrastructure facilities and quality of governance external to the zones have to be improved. The analysis also suggests that one must make a clear cut distinction between different indicators of zone performance.

9.2.2. *Zone level Analysis*

At the zone level we have included the location specific variables in addition to zone specific characteristics. The model is

$$\text{Perform zone} = f(\text{RPCY}, \text{LOCINDEX}, \text{CONCEN}, \text{SIZE}, \text{CAPINT})$$

RPCY : per capita income of the region in which a zone is located and the share of industry in the region.

LOCINDEX: Multiplicative factor of distance of port from the zone, distance of airport from the zone and distance from a bigger city.

CONCEN : Herfindahl index of concentration (H).

SIZE : log of Land area in acres (LAND) for investment and,

Log of employment (EMPLOYMENT) for the export equation

CAPINT : Investment per unit of employment.

Panel data of 14 years across all the zones were pooled. To control for the time effect and unobservable zone-specific effects, we used the panel data analysis. Generalised least square (GLS) methods were used to estimate the models. Table 9.9 presents results for the investment equation while Table 9.10 presents results on variations in export performance.

I-equation

Two alternative measures of investment are used. These are : zone-wise total investment and zone-wise investment normalised by zone area. Equations I and II are for total investment while equations III and IV are for total investment per acre. For each variable two equations were estimated, one without country specific dummies (I and III) and one with country specific dummies (II and IV). CONCEN was dropped as it was insignificant in all the specifications. RPCY comes up significant with a positive sign while LOCINDEX is negative in all the specifications. The results suggest that the regional development makes a positive contribution to the investment flows. On the other hand, distance of the zone from the strategic positions such as the port, airport and bigger cities discourages investors. Apparently, location of the zones is an important aspect. A careful selection of zone location is the first step in ensuring the success of the zone. This is perhaps important in view of the fact that infrastructure facilities external to the zone are poor in these countries.

Finally, size is significant when total investment is used as a dependent variable. However once we normalise the dependent variable, this variable becomes significant with a wrong sign. Apparently, SIZE is not important for enhancing the attractiveness of the zones.

Table 9.9 : GLS estimates explaining variations in zones' investment inflows ng zone level panel data

	Total invest		Investment/ land area (Acre)	
	I	II	III	IV
RPCY	0.19	1.79	0.029	0.25
	(2.52) ^a	(7.70) ^a	(2.09) ^b	(7.49) ^a
SIZE	0.52	0.69	-0.0008	-0.0001
	(8.54) ^a	(9.67) ^a	(2.40) ^a	(2.01) ^b
LOCINDEX	-0.21	-0.12	-0.013	-0.009
	(-10.36) ^a	(-5.37) ^a	(-3.08) ^a	(-2.97) ^a
CONSTANT	1.50	-11.48	0.158	-1.45
	(1.97)	(-5.79) ^a	(1.30)	(-5.89) ^a
No obs	159	159	159	159
Wald chi2(5)	369.72	568.18	138.81	324.92
Log likelihood	-203.62	-186.29	112.42	141.44

^a Significant at 1% level

Export equation

For examining variation in the export competitiveness, we used export per unit of employment as our dependent variable. Panel data analysis was used to control for the time specific and zone specific effect. Table 9.10 presents 4 equations. Equations I and II are estimated without controlling the country specific effect while III and IV have controlled the country-specific effects as well. Regional development and strategic location of the zones are found to have a significant effect on the export competitiveness of the zones. In our primary survey, many respondents revealed that they did not consider proximity to the port or airport to be important. This was because, if infrastructure facilities are good then the distances do not matter. In South Asia however, poor infrastructure and transportation facilities make it important that zones be located in the vicinity of bigger cities, ports and airports. Furthermore, zones located in developed regions are likely to perform better. Clearly, the location of zones is an important issue both for attracting investment and ensuring export competitiveness.

Table 9.10 : GLS estimates explaining variations in zones' export per unit of employment using zone level panel data 1991-2000

	I	II	III	IV
CAPINT	0.93	4.78	1.960793	1.675836
	(1.01)	(3.80)	(2.31)	(1.37)
SIZE (EMPLOYMENT)	-0.02	-0.05	-0.00724	0.00752
	(-3.43)	(-3.89)	(-1.9)	(0.77)
CONCEN	0.05			0.046911
	(3.51)			(2.51)
RPCY	0.06	0.33	0.063339	0.034539
	(2.49)	(12.00)	(2.37)	(1.37)
LOCINDEX	0.00	-0.01	-0.00435	-0.00373
	(-2.94)	(-3.07)	(-2.64)	(-1.83)
CONSTANT	-0.47	-1.38	0.197067	0.4019
	(-2.56)	(-7.48)	(1.16)	(1.47)
No obs	88	154	154	88
Wald chi2(5)	42.79	147.73	324.05	228.47
Log likelihood	164.14	88.13	170.4394	164.008

Export competitiveness of the zones is not associated with the size variable. Total employment turned significant with a negative sign in all the four equations. Of these, it is

significant in three equations. Thus, the size of the zones is not a crucial variable either for investment or for export competitiveness. On the other hand, the extent of CONCEN is related positively with the export competitiveness. Our results suggest that zones should be developed as clusters of industrial activities. This would benefit the units and improve their export competitiveness. Finally, CAPINT (investment per unit of employment) also turns significant with a positive sign. This suggests that capital intensity of exports matter. Export competitiveness is higher the more capital intensive are the products produced by the zones. This combined with the earlier result suggest that zones need to be developed as clusters of capital intensive products.

In sum, the location of the zones is a significant determinant of the success of the zones as are incentives, infrastructure and governance. The size of zone however, does not play an important role in determining either the export performance or the investment inflows. On the other hand, composition of activities affect the export competitiveness of the zones. More focused and more capital intensive zones perform better.

10. Concluding observations

This study focuses on the EPZ performance in South Asia. It covers three South Asian countries, namely India, Sri Lanka and Bangladesh and examines the factors that are crucial for the success of the zones in South Asia. The study begins with exploring different perspectives on the economics of zones. It then briefly describes the evolution of the EPZ Policy in these countries and examines the quality of governance, incentive packages and infrastructure facilities offered by the zones across the three countries in a comparative analytical framework. It also provides a comprehensive analysis of the FDI inflows and export performance of the zones using the available information and finally examines the determinants of the variations in investment and export performance across countries and zones empirically within the theoretical framework provided by the new growth theories. While doing so, it uses both primary and secondary data.

The foregoing discussion can be summarised as follows.

One, traditionally, EPZs were created as open market within an economy that was dominated by distortionary trade, macro and exchange regulation and other regulatory governmental controls. However, new theories developed since the 1980s posit that EPZs play a crucial initiating role in the development of national industrial capacity by creating an environment conducive to promote investment and exports. As a result, many developing countries have been reverting to them in the early stages of their industrial development with the expectation that they provide the engine of growth to propel their economies into industrialisation.

Two, evolution of EPZs in India is associated with the traditional view while Bangladesh and Sri Lanka viewed them as platform for building industrial and export capabilities in the early stages of their industrial development. However, all the three countries are promoting the EPZ programme much more vigorously now than in the initial phases of their evolution.

Three, both Bangladesh and Sri Lanka created an elaborate institutional framework to govern the EPZs in the initial stages. Their vision was clear and resolutely pro-business. They enacted a legislation, created a focused administrative infrastructure to govern EPZs, offered highly attractive incentives and located zones in the best possible locations. In India on the other hand, EPZs policy suffered from a lack of vision. The first zone was established as early as in 1965 with multiple objective in a highly backward region. The second zone was set up in Santacruz with a different set of objectives. The management and operation of the zone was affected by the overall policy regime. Wide-ranging measures were initiated by the government for revamping and restructuring EPZs as late as in the 1990s. The SEZ policy announced in 2000 is the most significant thrust towards ensuring the success of export processing zones in India.

Four, zone units in Bangladesh are enjoying huge relative benefits compared to the domestic units in terms of incentive package, infrastructure facilities and the quality of governance. Sri Lanka also offers a highly focused administrative set up for the development of the zones and highly developed infrastructure facilities like Bangladesh. Besides, Sri Lanka also offered several incentives to the units in the initial phase of the evolution of the zones. However,

since the late 1990s, the government is cutting down the incentives offered to the units. In India, EPZs are managed by the government department. At the zone level, there is no fine tuning of the division of responsibilities along the lines that is seen in other two countries. However, one distinguishing feature of the Indian system is with regard to the custom services. In India, these services are directly under the jurisprudence of the zone administration. In Sri Lanka and Bangladesh, on the contrary, custom departments are controlled by the government. The incentive package had been highly restrictive till recently but now the government has announced a substantially improved set of incentives and facilities. Infrastructure facilities provided by the zones in India are comparable with Sri Lanka. However Bangladesh appears to have an edge here also due to direct interference of the EPZ authorities in providing major infrastructure facilities (water, electricity and telecommunication) to the zone units.

Five, clarity in vision and concerted efforts finally reflected in the expansion of the zones and participation by FDI in Sri Lanka and Bangladesh. In terms of over all export growth also the two countries scored over India. However, in terms of productive efficiency (Exports per unit of labour) India appears to have excelled. Even after controlling the effect of capital intensity, India's productive efficiency turned out to be the highest in the 1990s. During 2000-2003 however, Sri Lanka out performed India. Bangladesh did not perform as well. In our analysis of three countries, their productive efficiency was the lowest.

Six, our primary survey and econometric analysis revealed that countries wishing to take advantage of the opportunities provided by zones will have to put together a co-ordinated package of incentives, infrastructure and good governance. Our primary survey however suggested that some aspects of location, facilities and incentives are more important than the others. For instance, the presence of social infrastructure within the zones is considered less important than the physical infrastructure, tax benefits are more sought after than subsidies, relaxation in labour laws is stated to be more important than relaxation in other laws, locating the zones near bigger cities/ports is considered more important than locating them near airports or railway stations and availability of educated disciplined labour is regarded as more important and lower wages or skilled labour. Given the limited resources and options, the state must therefore

focus on those aspects of the zones that are crucial for their success. Less important issues may be relegated to the back seat.

Seven, our empirical analysis reveals that the relative advantages enjoyed by the EPZ units (in terms of incentives, infrastructure and governance) vis-à-vis the rest of the economy attract investment in the zones while overall governance and infrastructure facilities in a country determine the export competitiveness of its zones. Furthermore, location of a zone in a development region and / or near strategic positions such as bigger cities, ports and airports affect both the investment and export competitiveness. Composition of economic activities in the zones such as clustering and capital intensity also affects the export competitiveness. Size of the zones however, does not play an important role in determining either the export performance or the investment inflows

Four major policy implications follow.

One, the establishment of a successful EPZ programme does not require removing one or two obstacle, it requires removing all of them simultaneously. This is because EPZs offer a package of services simultaneously. In short, EPZs have a much higher probability of success when there is vision in the design, establishment and operations of the EPZ.

Two, overall investment climate (infrastructure, governance) in a country matters in the success of its zones in terms of competitiveness. Generally, it is argued that the EPZ concept is attractive because it is much easier to resolve the problems of infrastructure and governance on a limited geographical area than it is to resolve them countrywide (see Watson 2001, Mondol 2000). Our study reveals that in such a case, zones may attract investment due to relative advantages that the units enjoy here but they may not be efficient in terms of productivity. We therefore argue that zones cannot be insulated from the broader institutional and economic context of the country and that they cannot be treated as an economy within the economy. Zones are a part of the economy and require overall improvement in the investment climate to ensure success in the long run. They should not therefore be viewed as alternative to the overall

development model. This is perhaps the reason why EPZs failed to fulfil the role of engines of industrialisation in most countries on a sustainable basis.

Three, our analysis suggests that the zones tend to specialise in terms of economic activities depending on the availability of human capital, resources and infrastructure in the region. They thus tend to transform into horizontally-integrated industrial clusters, which includes industries that might share a common market for the end products, use a common technology or labor force skills, or require similar natural resources. It seems therefore that it would be desirable to develop zones as industrial clusters of specific products. This may encourage downstream industries also. For instance, in Bangladesh, textile units seem to have encouraged the growth of accessories' units as well.

Finally, zones in the long run, need to give way to industrial clusters of horizontally and vertically integrated industries in general, high tech industries in particular. This would not only help in jump-start the manufacturing processes but would also improve export competitiveness with greater return.

References

- Abeyratne, S. (1997) Trade Strategy and Industrialisation in W.D. Laxman ed. Dilemmas of Development Fifty years of Economic Change in Sri Lanka 341-385
- Aggarwal (2004 a) Export Processing Zones in india : Analysis of the Export Performance, ICRIER Working paper No. 148.
- Aggarwal (2004 b) 'The Influence of Labour Markets on FDI : Some Empirical Explorations in Export Oriented and Domestic Market Seeking FDI Across Indian States, Unpublished manuscript.
- Aggarwal, A. (2002) Liberalisation , Multinational Enterprises and Export Performance : Evidence from Indian Manufacturing (2002), *Journal of Development Studies*, Vol 38, No. 2, 119-137.
- Andersson T. and T. Freriksson (1995) 'International Organisation of Production and Variation in Exports from Affiliates, *Journal of International Business Studies* 27(2), 249-263.
- Armas E.B. and M. Sadni Jallab (2002) A Review of the Role and Impact of Export Processing Zones in World Trade : The Case of Mexico, *Working paper 02-07 Centre National de la Recherche Scientifique*
- Athukorala, P. (1997) Foreign Direct Investment and Manufacturing for Exports in W.D. Laxman ed. Dilemmas of Development Fifty years of Economic Change in Sri Lanka 386-422.
- Baissac Claude (2003) Maximising the Developmental Impact of EPZs: A Comparative Perspective in the African Context of Needed Accelerated Growth A Presentation at the Johannesburg EPZ Symposium October 15-16 2003
- Cling, J.P. and G. Letilly (2001) "Export Processing Zones : A threatened instrument for global economy insertion ?" *DT/2001/17 Paris: DIAL*
- Dunning [1998] ' Changing Geography of Foreign Direct Investment : Explanations and Implications in Nagesh Kumar et al. *Globalisation, Foreign Direct Investment and Technology transfers: Impacts on and Prospects for Developing Countries*, London and New York : Routledge.
- Dunning, J.H. (1980). Toward an Eclectic Theory of International Production: Some Empirical Tests, *Journal of International Business Studies*. 11(1): 9-31.
- Dunning, J.H. (1993) *Multinational Enterprises and the Global Economy*, Reading : Addison-Wesley

- Dunning, J.H. and Buckley, P. (1977) International production and Alternative Models of Trade. *The Manchester School of Economics and Social Sciences XLV*, Dec. 392-403.
- EXIM (2000) Export processing Zones in select countries : Critical Success factors' *Occasional paper 74*, Export Import Bank of India, 2000
- Ferrerrosa T, J.H. (2003) 'Free Zones as Logistic Platforms and Their Impact in the Development of Latin American Countries', www.iajbs.org
- Goswami et al (2002) 'Competitiveness of Indian Manufacturing : Results from a Firm Level Survey' A World Bank-CII study.
- Hinkle, L.E., A. Herrou-Aragon and K. Kubota (2003), "How Far Did Africa's First Generation Trade Reforms Go? An Intermediate Methodology for Comparative Analysis of Trade Policies", Africa Region Working Paper No 58, World Bank, Washington D.C.
- ICIR (1992) Review of Overseas Export Enhancement Measures, *The Industry Commission Inquiry Report, 1992*, Australian government, productivity Commission.
- ILO/UNCTC (1988) *Economic and Social Effects of Multinational Enterprises in Export Processing Zones*, Geneva, Switzerland.
- JOHANSSON H. [1994], 'The economics of export processing zones revisited', *Development Policy Review*, Vol.12, pp.387-402.
- Kankesu J. (2003) Benefit-Cost Appraisals of Export Processing Zones: A Survey of the Literature, *Development Policy Review* 21(1).
- Keddie, J. (1976) 'Adoption of Production Technique in Indonesia Industry', *Ph.D.Dissertation*, Harvard University
- Kumar , N. (2003) *Host Country Policies, WTO Regime and the Quality of Foreign Direct Investment : A Quantitative Analysis of the Role of Multinational Enterprises in industrialisation, Export orientation and Innovation in Host Countries*, Oxford University Press.
- Kumar Rajiv (1989) '*Indian Export porcessing Zones: An Evaluation*' Oxford University press, New Delhi, 1986.
- Kundra A. (2000) : '*The Performance of India's Export Zones : A Comparison with the Chinese Approach*,' Sage Publication., New Delhi.
- Loree, W.D. and S.E. Guisinger 1995 Policy and Non Policy Determinants of US Equity Foreign Direct Investment, *Journal of International Business studies*, 26(2), 282-299.

- Madani, D. (1999) *A Review of the Role and Impact of Export Processing Zones*. Washington, DC: World Bank.
- Mattoo, Aaditya, Devesh Roy and Arvind Subramanian (2003), "The African Growth and Opportunity Act and its Rules of Origin: Generosity Undermined?" *The World Economy*, Vol. 26, Issue 6, June, pp.829-851
- Mitra, A. et. al (1998) 'State Infrastructure and Productive Performance in Indian Manufacturing, *Technical paper 139, OECD Development Centre*.
- Mody A. and K. Srinivasan (1996) 'Japanese and United States Firms as a Foreign Investors : Do they march to the same tune? *World Bank Mimeo*, W.B. Washington.
- Mondal A.H. (2001) Role of the Export Processing Zones in the Industrialization Process of Bangladesh: Lessons for the Future" (published as Chapter 6, in Rushidan Islam Rahman (ed.), *Performance of the Bangladesh Economy: Selected Issues*, Bangladesh Institute of Development Studies, Dhaka, 2003, pp. 93 – 122)
- Mondal, A.H. (2003) Role of the Export Processing Zones in the Industrialization Process of Bangladesh: Lessons for the Future" in *Rushidan Islam Rahman (ed.), Performance of the Bangladesh Economy: Selected Issues, Bangladesh Institute of Development Studies, Dhaka, 2003, pp. 93 – 122*
- Nankani, G. (1979). "Development Problems of Mineral-Exporting Countries", *World Bank, Staff Working Paper, no. 354*, Washington.
- OTA, Tatsuyuki (2003) ' The Role of Special Economic Zones in China's Economic Development as Compared with Asian Export Processing Zones : 1979-1995' *Asia in Extenso*, March 2003
- Papanastassiou, M. and Pearce, R. D. 1990. Host country characteristics and the sourcing behavior of UK manufacturing industry. *Working Paper*. University of Reading, Department of Economics. Discussion Papers in International Investment and Business Studies, Series B, 2. No. 140.
- Porter , M. E. (1990) : '*Competitive Advantages of the Nations*'
- Reuber G.L. et. al (1973) *Private Foreign Investment in Development* Oxford, Clarendon Press
- Ryan, P.F., A.N.Savage and M.G.Willis (1993) Infrastructure of Private EPZs –Role of the state and the Private Zone operator in *R.L.Bolin (ed) Public Vs Private Free Zones*. Flagstaff Institute.
- Subramaniam, A. and D.Roy (2001) Who Can Explain The Mauritian Miracle: Meade, Romer Sachs or Rodrik? Working Paper No.01/116, The World Bank

TCS (1976) 'Techno-Economic Potential Survey of Tamil Nadu' Draft Reports Vol. III Case Studies (*mimeo*) Bombay. 1976.

Tekere M. (2000) Export Development and Export led growth Strategies : Export Processing zones and the Strengthening of Sustainable Human Development , ICTSD Globalisation Dialogues- Africa Windhoek, 10-12 may 2000, 37-55.

Tondon Committee (1982) 'The Committee on Free trade Zones and 100% Export oriented Units, *Apponited by the Ministry of Commerce, Government of India, September 1981.*

Tondon Committee (1982) 'The Committee on Free trade Zones and 100% Export oriented Units, *Apponited by the Ministry of Commerce, Government of India, September 1981.*

UNCTAD (1998) *World Investment Report 1998*, United Nations, New York

UNCTAD 1999 *World Investment Report 1999* UNCTAD

UNIDO (1995) *Export processing Zones : Principles and Practices* Vienna : UNIDO 1995.

Watson P. (2001) Export Processing Zones : has Africa Missed the Boat? Not yet! Africa Region Working Paper Series Number 17, 2001.

Watson P.L. (2001) 'Export Porcesing zones : Has Africa Mised the Boat? Not yet! Africa Region Working paper Series Number 17

WBI (2003) Worldwide Governance Research Indicators Dataset 1996-2002, World Bank Institute. <http://www.worldbank.org/wbi/governance/data.html>

World Bank (1992) 'Export processing Zones' *Industry and development division*. Washington DC, World Bank, 1992

Wells, L.T. (1973) 'Economic Man and Engineering Man: Choice in a Low-Wage Country, *Public Policy*, 21 (Summer), 319-342