



## Export Processing Zones in Asia: A Comparative Study

Jing-dong Yuan; Lorraine Eden

*Asian Survey*, Vol. 32, No. 11 (Nov., 1992), 1026-1045.

Stable URL:

<http://links.jstor.org/sici?sici=0004-4687%28199211%2932%3A11%3C1026%3AEPZIAA%3E2.0.CO%3B2-4>

*Asian Survey* is currently published by University of California Press.

---

Your use of the JSTOR archive indicates your acceptance of JSTOR's Terms and Conditions of Use, available at <http://www.jstor.org/about/terms.html>. JSTOR's Terms and Conditions of Use provides, in part, that unless you have obtained prior permission, you may not download an entire issue of a journal or multiple copies of articles, and you may use content in the JSTOR archive only for your personal, non-commercial use.

Please contact the publisher regarding any further use of this work. Publisher contact information may be obtained at <http://www.jstor.org/journals/ucal.html>.

Each copy of any part of a JSTOR transmission must contain the same copyright notice that appears on the screen or printed page of such transmission.

---

JSTOR is an independent not-for-profit organization dedicated to creating and preserving a digital archive of scholarly journals. For more information regarding JSTOR, please contact [jstor-info@jstor.org](mailto:jstor-info@jstor.org).

---

# EXPORT PROCESSING ZONES IN ASIA

## *A Comparative Study*

\_\_\_\_\_ Jing-dong Yuan and Lorraine Eden  
\_\_\_\_\_  
\_\_\_\_\_

By 1970, some twenty export processing zones (EPZs) had been established in less than ten developing countries (LDCs); by 1986, there were 175 such zones in more than fifty LDCs. Over this period, employment rose from 50,000 to 1.3 million, while the estimated value of EPZ exports increased from US\$150 million to US\$10 billion.<sup>1</sup> This rapid geographical spread represented an important policy change in the global economy and in North-South relations.

Normally, EPZs are seen as vehicles for outward-oriented economic growth, based on the theory that active participation in international trade is an engine of growth, and “a second-best type solution for a country wanting to profit from a greater and more efficient integration into the international division of labour without subjecting the entire economy to trade liberalization and deregulation.”<sup>2</sup> The enclave nature of the zones minimized the exposure of the domestic economy to any uncertainty, while their openness supplemented and facilitated the state’s overall outward-oriented development strategy. A variety of incentives were offered to attract foreign direct investment (FDI) to export processing zones. Customs duties were usually waived on imported materials, intermediate

---

Jing-dong Yuan is a doctoral candidate in the Department of Political Studies and a graduate fellow at the Centre for International Relations, Queen’s University, Kingston, Ontario, Canada. Lorraine Eden is Professor of International Affairs, Norman Paterson School of International Affairs, Carleton University, Ottawa. During the current academic year, she is at the Center for Business and Government, Kennedy School of Government, Harvard University. An earlier version of this article appeared in the working paper series of Asian-Pacific Resource and Research Centre, Carleton University. The authors wish to thank Paul Davidson, Sunder Magun, and an anonymous referee for helpful comments on earlier drafts of this article.

© 1992 by The Regents of the University of California

1. International Labor Organization (ILO), *Economic and Social Effects of Multinational Enterprises in Export Processing Zones* (Geneva: ILO, 1988), pp. 1–2.

2. D. Spinanger, “Objectives and Impact of Economic Activity Zones: Some Evidence from Asia,” *Weltwirtschaftliches Archiv* 120 (1984), p. 65.

components, and machinery used in the manufacture of exported products; tax holidays were granted and foreign exchange controls relaxed; foreign profits and incomes could be repatriated in hard currencies; infrastructure was sometimes provided; preferential rates for utilities and the lease of land and buildings could be given, and loans made at moderate interest rates; and finally, zone administration was usually "one-stop" in order to reduce the bureaucratic red tape involved in investment applications.

Given that most LDC governments had the same goals in adopting a processing zone strategy and that most EPZs offered the same incentives, one might expect zone performance to have been similar. However, evaluations of performance, concentrating on tangible parameters such as statistics on foreign investment, employment, exports and foreign exchange earnings, technology transfer, and domestic linkages, suggest that there have been both failures and successes.<sup>3</sup> If governments adopted the EPZ strategy for similar reasons and employed similar incentives, why has zone performance varied? The question is clearly an important one given the number of LDCs that are relying on the processing zone strategy to help them "up the development ladder." Three factors are normally cited as influencing the relative success of various EPZs: timing, location, and the quality of EPZ administration. In addition, it has been pointed out that the basic requirements for a successful EPZ probably also include proximity to international ports, a well-developed infrastructure, a pool of semi-skilled or nonskilled labor ready to accept relatively low wages, a minimum of bureaucracy and red tape, and a generous package of fiscal incentives.

However, these are simply lists of variables that could affect the performance of EPZs. Little work has been done at developing a political economy model that would relate zone performance in a predictable fashion to certain economic, political, and social variables. The purpose of this study is to develop such a model. We focus on three groups of exogenous variables: the international environment, domestic conditions, and the role of the state. The model is then used to compare performance in export processing zones in Taiwan, South Korea, and China. The first section of the article briefly reviews the literature on EPZs and develops a political economy model of zone performance; next we provide an overview of processing zones in Taiwan, South Korea, and China; and finally, we apply the model to the cases and offer policy implications.

---

3. Otto Kreye et al., *Export Processing Zones in Developing Countries: Results of a New Survey*, working paper no. 43 (Geneva: ILO, 1987).

## A Framework for Comparative Analysis of EPZs

The literature on export processing zones has concentrated in two areas: descriptive surveys, and theoretical models of EPZs and their welfare effects.<sup>4</sup> They provide the most comprehensive and up-to-date surveys of EPZs in developing countries, and discuss a variety of issues ranging from the conception, nature, and objectives of EPZs to their performance in terms of the volume and types of FDI attracted, employment created, exports and foreign exchange earnings, technology transfer, and domestic linkages. Efforts have also been made to develop theoretical analyses of EPZs.<sup>5</sup> These include discussions on how the establishment of EPZs can lower a host country's overall level of protection (using an international trade model) and encourage firms to exploit a country's comparative advantage; examination of the welfare effects of EPZs and the fact that the inflow of FDI can reduce welfare due to the misallocation of resources that results in the repatriation of profits; and arguments on how EPZs can be welfare-increasing since most developing countries use zones to attract FDI into labor-intensive industries in which they have a comparative advantage.

The clear limitation of the existing literature on EPZs calls for a more rigorous analytical framework. In other words, we must move beyond surveys and economic models to probing causal correlations that can provide answers as to the factors that underlie zone performance. In this section we briefly discuss the criteria for assessing the success of zones and develop a political economy model of EPZ performance. A general discussion of the criteria of success is predicated on the extent to which major zone objectives as set by LDC governments have been achieved. Although the objectives are almost identical for most LDCs setting up EPZs, and although emphases and priorities vary from country to country and from one phase of EPZ development to another within the same country, for our purposes three objectives are given more weight: the FDI inflows, net

---

4. General surveys are in J. Currie, *Investment: The Growing Role of Export Processing Zones* (London: The Economist Intelligence Unit, Ltd., 1979); Economic and Social Commission for Asia and the Pacific (ESCAP), *An Evaluation of Export Processing Zones in Selected Asian Countries* (Bangkok: ESCAP/UNCTC, 1985); ILO, *Economic and Social Effects*; and Kreye *et al.*, *Export Processing Zones: Results*.

5. V. N. Balasubramanyam, "Export Processing Zones in Developing Countries: Theory and Empirical Evidence," in *Economic Development and International Trade*, David Greenway, ed. (London: Macmillan, 1988), pp. 157-65; Koichi Hamada, "An Economic Analysis of the Duty-Free Zone," *Journal of International Economics* 4 (1974), pp. 225-41; Carl Hamilton and L. E. O. Svensson, "On the Welfare Effects of a Duty-Free Zone," *Journal of International Economics* 13 (1982), pp. 45-64; David Wall, "Export Processing Zones," *Journal of World Trade Law*, 10:5 (1976).

exports, and backward domestic linkages as they contribute to both local sourcing (and therefore help raise net exports) and technology transfer.

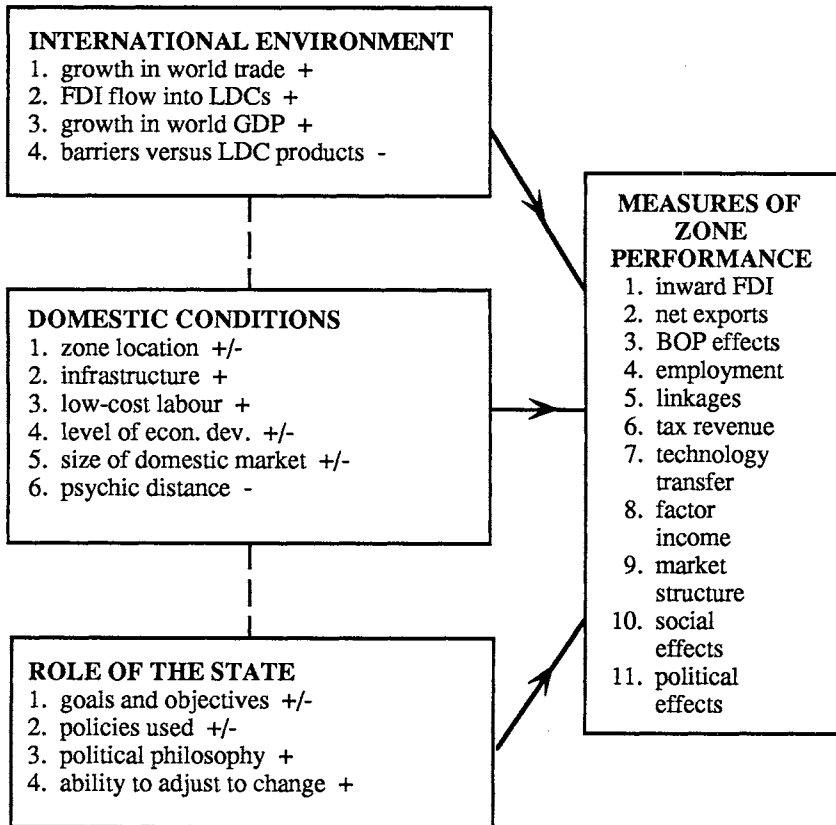
The political economy model is outlined briefly in Figure 1. We hypothesize that the dependent variable, EPZ performance, is affected by three sets of independent variables: the international environment, domestic conditions, and the role of the state. Zone performance is measured by comparing the various economic, political, and social impacts that the establishment of an EPZ can have on a country compared to the goals established by the state for the zone. As we have seen, most LDC governments expect EPZs to generate inward flows of FDI, net exports, positive balance of payments and employment effects, linkages to the domestic economy, technology transfer, and so on.

The international environment at the time an EPZ is established and developed is an opportunity for, as well as a constraint on the zone's development. Since one of the major purposes of setting up EPZs is to combine foreign capital with relatively low-cost labor to manufacture goods for export, a favorable international environment characterized by rapidly expanding world trade and a high volume of capital flow into LDCs certainly has a positive effect on EPZ development. A priori, we therefore hypothesize that the larger the growth in world trade, GDP, and FDI, the more successful will be an EPZ strategy. In addition, the higher the developed market economies' barriers against LDC exports, the lower the EPZ performance will be.

However, timing alone is only a contributing factor, not a determining one. Domestic conditions in terms of zone location and distance to foreign markets, infrastructure, labor costs, and level of economic development also count as a second constraint and opportunity.<sup>6</sup> Studies show that EPZ set-up costs can be very high if zones are located in isolated and underdeveloped areas. Land preparation and the construction of roads, ports, public utilities, factory buildings, and workers' dormitories all incur costs, but failure to provide sufficient infrastructure can delay a zone's start-up stage. In addition, the level of economic development in the host country can influence the scope for linkages with the local economy. We hypothesize therefore that domestic conditions affect zone performance in two ways, first, the particular domestic conditions within the processing zone, and second, the general economic and social conditions within the

---

6. Our model has certain similarities to Dunning's 1981 eclectic model of FDI where the location of FDI is influenced by economic, social, and political (ESP) factors in the host country. E and S factors are included as domestic conditions, while P is the state variable. Note also that we ignore natural resources, assuming that FDI in processing zones is normally cost reducing, not resource seeking. (John H. Dunning, *International Production and Multinational Enterprises* [Boston and London: Unwin Hyman, 1981.]

FIGURE 1 *A Model of Performance in Export Processing Zones*

NOTE: Plus and minus signs in boxes indicate the hypothesized positive or negative effect of an increase in a specific exogenous variable on zone performance. Variables with both signs indicate they can have both positive and negative effects on EPZs. A solid line linking the boxes indicates primary linkages among the variables while a dotted line indicates secondary linkages; arrows show the hypothesized direction of causation in the linkages. While we portray the three exogenous variables as independently affecting zone performance, in practice they are interconnected (e.g., the state can affect domestic conditions). In addition, in a general-equilibrium setting a feedback loop from zone performance to the three independent variables is necessary to complete the model. Our approach has the advantages of simplicity and parsimony but at the cost of a complete analysis of zone performance.

LDC. The overall level of economic development can have an ambiguous effect since FDI tends to flow to developed economies and backward link-

ages tend to be higher where the economy is better developed, but the higher wage rates associated with development can discourage entry by Multinational Enterprises (MNEs) engaged in a worldwide sourcing strategy. Similarly, a larger domestic market can attract market-seeking MNEs, but the domestic market is likely to be unimportant for multinationals engaged in FDI for export purposes.<sup>7</sup>

The state, observing changes in the international arena, makes decisions on national goals and priorities, taking into account the available resources at its disposal. It responds to constraints as well as opportunities and seeks to maneuver amidst changing global power relations to achieve its national interests. While the international economic structure at any given time sets the context in which a country operates according to its comparative advantage, the state can be instrumental in observing changes in the international arena and in domestic conditions, evaluating these observations against national goals and priorities, and formulating and carrying out policies to achieve optimal results within the context of these constraints and opportunities.<sup>8</sup> In the case of EPZs, the role of the state is first reflected in the specific objectives it sets for the zones and the specific policies used to achieve them. In Figure 1 we have given the goals and objectives of the state a plus or minus sign. A priori, the larger the number of goals, the more conflicting they may be, with subsequent negative impacts on performance. On the other hand, well-defined and explicit goals, which make it easier to design specific policies for the EPZs, are likely to be reflected in improved zone performance. The state chooses the sites for EPZs and provides the necessary infrastructure and legal framework for prospective investors. In addition, the state uses fiscal incentives and sets up screening criteria to induce and channel foreign capital into targeted sectors, encourage exports, require use of domestic components, and promote domestic linkages. States vary in their ability to respond to change. A more flexible government can adapt to changing international and domestic conditions and to the needs of investors in the EPZs; such flexibility is likely to improve zone performance.

Our political economy model of zone performance thus argues that the success or failure of EPZs as an export-oriented strategy can be traced to three interconnected but conceptually separate factors: the international environment, domestic conditions, and the role of the state. In the follow-

---

7. Gary Gereffi, "International Economics and Domestic Policies," in *Economy and Society: Overviews in Economic Sociology*, Alberto Martinelli and Neil Smelser, eds. (London: Sage Publications, 1990), pp. 231-58.

8. Raymon D. Duvall and John R. Freeman, "The State and Development Capitalism," *International Studies Quarterly*, 25:1 (1981), pp. 99-118.

ing section we provide brief accounts of the history of export processing zones in three Asian economies: South Korea, Taiwan, and China.

## The Case Studies

### *EPZs in Taiwan*

In the mid-1950s, the Taiwanese government began to reorient its existing industrial strategy from import substitution to export promotion. However, complex administrative procedures and bureaucratic red tape impeded progress. The establishment of Taiwan's first EPZ at Kaohsiung in 1966 was largely a response to these problems, as it provided the same fiscal incentives as elsewhere in Taiwan but was designed to reduce administrative procedures to the minimum and therefore make the site more attractive to foreign investors. Two more zones were established and all three performed quite successfully. As Table 1 shows, investment in the three EPZs recorded an average annual growth rate of 26.5%, with a 49.9% growth rate for the first four years and an annual peak of 80.84% in 1973; however, after the 1973 oil crisis and the ensuing world economic recession, the investment growth rate slowed to 10–26%.<sup>9</sup>

Expansion of exports was one of the major objectives of the Taiwanese EPZs. The performance of the three zones up to 1979 was quite satisfactory as Table 1 shows. From 1967 to 1979, the average annual growth rate of exports was 61.3%, from US\$8.2 million in 1967 to \$1.2 billion in 1979. Zone exports stabilized at 7–9% of national exports. Between 1966 and July 1980, the aggregate value of zone exports totalled \$6.4 billion compared to imports of \$3.8 billion, leaving a surplus of \$2.6 billion, and the foreign exchange earnings of the EPZs were nearly 70% of Taiwan's total foreign exchange earnings between 1967 and 1979. In terms of the trade balance (net exports) as a percentage of the national total, the performance of the three zones was even more impressive. From 1967 to 1979, the Taiwan economy as a whole incurred trade deficits in six years; the three EPZs, except for two deficit years initially, recorded ever increasing trade surpluses. On average, the three EPZs accounted for about 48% of Taiwan's trade surpluses annually during the 13-year period and 68.4% of the accumulated trade surpluses.<sup>10</sup>

The backward linkage effects of the three zones were reflected in the gradual growth of domestic components of finished products manufactured in the EPZs. In 1967, only about 2.1% of the inputs shipped into

9. Kwei-Jeon Wang, "Economic and Social Impact of Export Processing Zones in the Republic of China," *Economic Review* 200 (1981), p. 24.

10. George Fitting, "Export Processing Zones in Taiwan and the People's Republic of China," *Asian Survey*, 22:8 (1982), p. 733; Wang, "Economic and Social Impact," pp. 11, 20.



TABLE 1 *FDI and Trade Growth of EPZs in Taiwan, 1966–1986*  
(unit: US\$ million)

Year	FDI in KEPZ \$	FDI in NEPZ \$	FDI in TEPZ \$	Stock of FDI Rate \$	FDI Growth %	Exports \$	Imports \$	Net Exports \$	Net Exports as % of Taiwan
1966	11.0	—	—	11.0	—	—	—	—	—
1967	15.6	—	—	15.6	41.6	8.2	13.7	-5.5	3.3
1968	25.9	—	—	25.9	66.1	26.4	29.6	-3.2	2.8
1969	36.4	—	—	36.4	40.9	62.2	54.4	7.8	n.a.
1970	40.9	7.2	7.2	55.3	51.2	109.4	90.1	19.2	n.a.
1971	46.2	9.9	7.1	63.2	14.3	163.5	110.3	53.1	24.6
1972	50.7	18.0	9.2	77.9	23.2	241.1	165.4	75.8	16.0
1973	55.1	57.6	28.1	140.8	80.8	404.7	299.8	104.9	15.2
1974	64.5	63.0	29.3	156.8	11.3	511.3	309.9	201.4	n.a.
1975	72.4	71.6	32.6	176.5	25.4	459.0	270.6	188.4	n.a.
1976	78.4	85.2	45.3	208.9	18.3	676.0	373.3	302.6	53.4
1977	89.1	89.1	51.4	229.6	9.9	761.2	395.3	365.9	43.0
1978	95.8	104.8	54.8	255.4	11.3	937.6	564.7	372.9	22.5
1979	n.a.	n.a.	n.a.	n.a.	n.a.	1,204.7	610.1	594.7	44.8
1986	n.a.	n.a.	n.a.	n.a.	n.a.	2,403.0	1,232.0	1,171.0	n.a.

SOURCE: Kwei-Jeon Wang, "Economic and Social Impact of Export Processing Zones in the Republic of China," *Economic Review* 200 (1981), pp. 20, 24; Kuo-ting Li, *The Evolution of Policy Behind Taiwan's Development Success* (New Haven and London: Yale University Press, 1988), p. 98.

NOTE: KEPZ = Kaohsiung; NEPZ = Nantze; TEPZ = Taichung.

the zones were of local origin. This figure rose to 17% in 1973, and by 1980 about one-third of the inputs were domestically produced and supplied. More than a thousand local factories were set up, targeted mainly to the EPZ markets. Local suppliers were able to provide raw materials, parts, and equipment that had been imported.<sup>11</sup>

Technology transfer occurred mostly through on-the-job training, quality control, and marketing. From 1966 to 1979, more than 4,000 personnel were sent abroad to receive technical training. Management at various levels was transferred to local personnel as more and more Chinese technicians and managers replaced expatriates. Another form of technology

11. Ibid. (Fitting), pp. 733–34 (Wang), p. 12.

transfer was embodied in technical cooperation agreements with foreign enterprises—40 were signed from 1967 to 1979. Local procurement of raw materials and parts served to upgrade the technological levels of domestic producers, as EPZ enterprises demanded high quality inputs and posted experts at local factories to advise on quality control and improvement of production methods.

### *EPZs in South Korea*

South Korea established its first EPZ, the Masan Free Export Zone (MAFEZ), near the port city of Pusan in 1971. A second zone, the Iri EPZ, was set up in 1974. Like Taiwan, the decision to set up EPZs in South Korea was preceded by a transition in the early 1960s from import substitution to export orientation, and the major factor influencing Seoul's decision was the apparent success of free trade zones in Hong Kong, Singapore, and Taiwan at attracting export-oriented FDI. Reflecting old colonial trading and investment patterns, South Korea also faced the necessity of competing with Taiwan for Japanese investments once the Kaohsiung EPZ had opened.<sup>12</sup> Table 2 provides some statistics on FDI, foreign exchange earnings, and output in the two EPZs for the 1970–86 period. Accumulated investment rose from \$1.8 million in 1970 to \$149.9 million in 1986, and exports grew at an annual rate of 16.6% between 1975–85. In 1985, total exports of MAFEZ were \$809 million of which electronic and metal products represented 72.7%.

The foreign exchange earnings in MAFEZ also grew enormously from \$200,000 in 1971, representing 22.2% of gross exports, to \$412 million in 1985, or 51% of gross exports. Between 1971 and 1979, cumulative foreign exchange earnings were \$848.5 million, or about 50% of all South Korean export earnings. As Table 2 shows, MAFEZ was quite successful at achieving a high percentage of domestic value added relative to total gross export value. This increase was due to the high local material content of commodities produced in the zone, which stood at 24.6% in 1979 and rose to about one-third in 1985.<sup>13</sup>

The Iri EPZ, however, was less successful at attracting investment, as can be seen from Table 2. The accumulated investment in the Iri EPZ by

---

12. Peter Warr, "Korea's Masan Free Export Zone: Benefits and Costs," *Developing Economies*, 22:2 (1984), pp. 169–84; United Nations Industrial Development Organization (UNIDO), *Export Processing Zones in Transition: The Case of the Republic of Korea* (Geneva: UNIDO, 1988).

13. *U.N. Conference on Trade and Development* (UNCTAD), *Export Processing Free Zones in Developing Countries* (New York: U.N., 1985), pp. 21–24; Derek Healey and Wilfried Lutkenhorst, "Export Processing Zones: The Case of the Republic of Korea," *Industry and Development* 26 (1989), p. 24.

TABLE 2 *FDI and Trade Growth of EPZs in South Korea, 1970-1986*  
(unit: US\$ million)

Year	Cumulative Investment		FDI as % of Cum. Investment (both zones)	FDI Growth Rate	Foreign Exchange Earnings		MAFEZ Value Added as % of Gross Output
	in MAFEZ	in Iri EPZ			in MAFEZ	as % South Korean	
	\$	\$	%	%	\$	%	%
1970	1.8	—	86.1	—	—	—	—
1971	5.3	—	92.7	217.0	0.2	22.2	22.2
1972	36.9	—	94.6	610.5	3.0	30.9	20.6
1973	82.8	—	95.1	125.8	25.9	36.8	23.0
1974	88.9	2.3	92.5	4.3	70.1	38.6	18.1
1975	89.0	3.3	91.5	-1.0	72.0	41.2	17.6
1976	98.0	5.3	92.0	10.7	149.1	49.2	11.9
1977	n.a.	n.a.	n.a.	8.5*	180.9	49.2	13.9
1978	111.9	6.7	94.2	8.5*	251.2	51.8	9.0
1979	n.a.	n.a.	n.a.	-6.1*	311.0	51.8	12.3
1980	112.9	7.5	81.9	-6.1*	333.0	53.0	10.2
1981	117.2	11.9	72.5	-8.1	371.6	53.4	10.8
1982	116.2	11.8	86.9	18.8	324.5	54.0	14.0
1983	n.a.	n.a.	n.a.	-3.2*	373.7	52.9	12.1
1984	128.2	16.8	73.7	-3.2*	444.0	50.5	9.6
1985	125.9	14.3	74.1	-1.3	412.6	51.0	13.7
1986	132.4	17.5	73.9	4.8	n.a.	n.a.	n.a.

SOURCE: Authors' calculations based on U.N. Industrial Development Organization, *Export Processing Zones in Transition: The Case of the Republic of Korea* (Geneva: UNIDO, 1988), pp. 14, 19, 24.

\* Interpolated between years.

1986 was \$17.5 million, compared to \$132.4 million in MAFEZ. Textiles and garments were the major manufacturing industries of the Iri zone and textiles and leather products its export staples, accounting for over 86% of total exports in 1985. In that year, total Iri EPZ exports were \$89 million of which net foreign exchange earnings were \$31.2 million, about 39% of total gross export value.<sup>14</sup>

Technology transfer from MNEs to the South Korean EPZs was apparently less sophisticated than to the Taiwan EPZs, consisting mainly of learn-

14. UNIDO, *Export Processing Zones*, pp. 13-28.

ing-by-doing through accumulation of experience in quality control for international standards. In addition, more than 3,000 persons were given technical training either in the two EPZs or abroad, some 400 of whom later transferred out of the zones to join Korean electronics firms.<sup>15</sup>

### *SEZs in the PRC*

In 1980 the Chinese government announced the establishment of four processing zones, called Special Economic Zones (SEZs), to be established in Shenzhen, Shantou, and Zhuhai in Guangdong Province, and Xiamen in Fujian Province. Designated as primary vehicles for China's opening to the outside world, the four SEZs were intended to attract foreign investment, introduce advanced technology and managerial expertise, experiment with new economic management techniques, and develop export-oriented industries.

Coming fifteen years after the Kaohsiung zone in Taiwan and ten years after MAFEZ in South Korea, China modeled its SEZs largely after the EPZs in those two economies, but there were at least four fundamental differences. First, most Asian EPZs operated in market economies while SEZs were located in a socialist country with a centrally planned economy. Historically, developing countries have used processing zones as a way to partly liberalize and open an economy to international trade while still protecting traditional import-substitution sectors. In China's case, the SEZs were laboratories for experiments where Western technology and managerial methods were carried out, while China itself simultaneously retained its socialist domestic economy. Second, SEZs were designed to be more encompassing in the sense that they involved other economic activities such as property development, agriculture, and tourism in addition to the export processing function of most EPZs. Third, they were to function as "windows" through which China could acquire a better understanding of the global economy. Last, the SEZs were to serve as political and economic bridges to Hong Kong and Macau, demonstrating the validity of the "one country, two systems" concept under which Hong Kong, Macau, and possibly Taiwan are to be reunited with the mainland.

The SEZs were characterized by relatively liberal economic management and tax incentives, and the free market price mechanism rather than central planning dictated economic activities. Capitalist private ownership, such as sole foreign proprietorships, and state capitalism existed side by side with public ownership. Lifetime job security was replaced with

---

15. Byung Gil Van, "Economic and Social Impacts of the Masan Free Export Zone in the Republic of Korea," in *Economic and Social Impacts of Export Processing Zones in Asia*, F. A. Rabbani, ed. (Tokyo: Asian Productivity Organization, 1984), p. 70.

TABLE 3 *FDI and Trade Growth of the Shenzhen SEZ in China, 1979–1988* (unit: US\$ million\*)

	1979	1980	1984	1987	1988
Capital construction investment	13.5	33.9	n.a.	583.0	938.6
GDP	53.0	73.0	n.a.	1,283.5	1,988.4
Industrial and agricultural output (1980 prices)	16.5	22.7	n.a.	1,557.6	2,500.3
Total export value	9.0	11.0	265.0	1,414.0	1,849.0
FDI in use	15.0	33.0	n.a.	405.0	444.0
Cumulative value of signed FDI contracts	n.a.	n.a.	649.0	n.a.	5,000.0
Number of signed contracts with foreign businesses	170	303	n.a.	334	694

SOURCE: Adapted from *Beijing Review*, August 21–27, 1989, p. 12, and Chunlin He, "Eight Years of the Open Policy," *China Reconstructs*, 36:11 (1987), pp. 12–15.

NOTE: The format of this table differs from the others due to the difficulty of obtaining data on SEZs; data are provided only for Shenzhen.

\* Using the foreign exchange rate (Rmb 3.7/US\$1) established before the devaluation of the Chinese currency in late 1989.

labor contracts and remuneration systems. To attract FDI, generous tax incentives were offered.

Table 3 provides some statistics on the Shenzhen SEZ, the most successful of China's processing zones. Shenzhen recorded its fastest growth in the 1980–88 period; by 1984, it had signed 870 contracts with foreign investors, amounting to \$649 million. Cumulative contracted FDI came to over \$5 billion and realized FDI inflows amounted to \$2.3 billion by 1988. Over the period, Shenzhen realized a gross industrial and agricultural output value of \$2.5 billion, 42 times that of 1979; total retail sales reached \$1.38 billion and exports recorded \$1.85 billion.<sup>16</sup> Technology transfer into the four SEZs was generated through the importation of machinery and equipment, the transfer of managerial skills, and on-the-job training. In the initial stage (1979–83) of SEZ development, China was able to make use of foreign investment to introduce some 30,500 units of machinery and equipment of which 10% were advanced by international standards and 30% by Chinese standards.<sup>17</sup>

16. *Renmin Ribao*, September 11, 1989.

17. Tien-tung Hsueh and Tun-oy Woo, "SEZs in China," in *Challenges of Asian Developing Countries: Issues and Analysis*, Shimichi Ichimura, ed. (Tokyo: Asian Productivity Organization, 1988), p. 497.

However, there were serious problems with SEZ development, especially in the 1980–85 period. It has been estimated that due to the primitive state of infrastructure and labor inefficiency, SEZ productivity was 35% below the Chinese average; of the \$840 million of realized FDI in Shenzhen during this period, only \$300 million (36%) was industrial investment.<sup>18</sup> There were also problems with net export earnings. In 1983, for example, total exports from Shenzhen amounted to \$230 million, 1.3% of total exports from China, and only 10% of all the industrial output produced in Shenzhen in 1983 was exported. Exports generated less foreign exchange than was spent on imported foreign components. Shenzhen, for example, turned in only \$82 million to the Chinese state over the 1980–89 period. Since then, exports have increased; the three Guangdong SEZs realized about \$2.57 billion in total exports in 1988. However, it is difficult to determine net exports since China does not provide figures for SEZ imports.<sup>19</sup>

### Comparative Analysis

A rigorous comparative analysis of EPZs in the three Asian countries was impossible in our study due to the paucity of consistent and reliable data; nevertheless, the case studies illustrate the differing zone development trajectories and performances of the South Korean and Taiwan EPZs and China's SEZs.

The EPZs in Taiwan and South Korea realized their full occupancy and started manufacturing activities soon after establishment. FDI represented a high percentage of total zone investment and was almost exclusively in manufacturing. Most zone output was exported. Compared to the capital expended by Taiwan and South Korea, foreign exchange earnings were high. In addition, domestic linkages were established and domestic value-added increased over the years. We therefore conclude that the South Korean and Taiwanese EPZs achieved their intended goals and contributed to national economic objectives. SEZs in China on the other hand, five years after they were set up, had not even reached the takeoff stage of development. Over the 1980–85 period, although FDI in absolute terms was high, only one-third of it was in manufacturing sectors while the rest was concentrated in property development, hotels, and tourism. Ex-

---

18. David K. W. Chu, "China's Special Economic Zones: Expectations and Reality," *Asian Affairs: An American Review*, 14:2 (1987), p. 83; *Beijing Review*, 32:35 (1989), p. 28.

19. Michael Osborne, *China's Special Economic Zones* (Paris: OECD, 1986), pp. 136–38; Joseph Fewsmith, "Special Economic Zones of the PRC," *Problems of Communism*, 35:6 (1986), pp. 78–85; Yuanchen Dai and Liren Shen, "An Inquiry into the Developmental Strategy of the Shenzhen Special Economic Zone," *Renmin Ribao*, December 13, 1985, p. 5; *Beijing Review*, 32:52 (1989), p. 14.

port performance was poor and foreign exchange earnings meager compared to the huge investments by the Chinese government.

What were the reasons for the apparent differences in zone performance? Was it simply due to the time difference, i.e., by the mid-1980s was it too late for there to be more NICs? Was the state a key variable? Or was the time period covered here simply too short, and the Chinese SEZs have yet to reach their full potential? We now turn to the political economy model summarized in Figure 1 to examine possible reasons for the visible difference in zone performance among the three Asian economies.

### *The International Environment*

EPZs in Taiwan and South Korea were established in the late 1960s when the first wave of global industrial restructuring was taking place. A new international division of labor was created as MNEs in labor-intensive, non-complex, light industries began to move offshore to reduce production costs. Taiwan and South Korea were among the first LDCs to establish special zones to take advantage of this change in the international environment. There were few other countries with EPZs so they faced little direct competition. The 1963–73 decade was also a period when world trade grew at an annual rate of 8.5%. After 1973, trade expansion slowed to 4% and by 1980 had plummeted to 1%. FDI grew even more rapidly than trade in the EPZs. Moreover, few nontariff barriers were erected by developed economies against the labor-intensive exports, such as electronics, of developing countries. The firms in the South Korean zones even had difficulty meeting export demands and had to resort to subcontracting with nonzone enterprises in order to meet deadlines.<sup>20</sup>

China, on the other hand, adopted its open-door policy in the late 1970s when the international environment was less favorable. In spite of this, China was able to secure large volumes of foreign capital, and by the mid-1980s, it ranked among the largest LDC recipients of FDI.<sup>21</sup> Foreign investment into the four SEZs was also substantial in aggregate terms, surpassing investments in EPZs in both Taiwan and South Korea. The apparent aberration could be accounted for by two factors. As a country embarking on economic reforms and adopting an open policy, China was an attractive target for foreign investors aimed at gaining a foothold in serving the potentially huge domestic market. In addition, while the international environment as a whole was less favorable, conditions existed where NICs like Hong Kong were transferring their more labor-intensive

20. Healey and Lutkenhorst, "Export Processing Zones: Korea," p. 28.

21. United Nations Centre on Transnational Corporations (UNCTC), *Transnational Corporations in World Development* (New York: U.N., 1988), p. 84.

industries to LDCs to reduce costs. In fact, a huge proportion (more than 80% during 1980–85) of FDI in China's SEZs came from Hong Kong and Macau.

From this we conclude that the international environment represented a window of opportunity for Taiwan and South Korea and a nonbinding constraint for China. The international environment, therefore, cannot be the decisive factor in explaining the different outcomes of EPZs in the three economies.

### *Domestic Conditions*

A host of domestic conditions, some of which are listed in Figure 1, can affect the performance of processing zones: zone location and infrastructure, labor costs and productivity, the general level of economic development of the host country, the size of the domestic market, and psychic distance between the LDC and potential foreign investors. Both Taiwan and South Korea established their EPZs either in, or close to their major port cities where basic infrastructure was already in place. An abundance of low-cost, relatively skilled labor, mostly female, was readily available. Both countries had already achieved a measure of economic growth by the late 1950s so that labor-intensive industries were relatively well developed, making it possible for zone enterprises to establish linkages with domestic producers. With help from zone enterprises in quality control, domestic producers were able to supply an increasing percentage of zone inputs. Both countries had small domestic markets, and thus were forced to look outward to export markets once their import-substitution strategies had run out of steam. Lastly, Taiwan and South Korea were natural sites for Japanese FDI where the psychic distance was low. In both economies, as a legacy of many years of colonial rule by the Japanese, many local business people not only knew the Japanese language but also had knowledge of Japanese business practices.

The four SEZs in China, on the other hand, were all located in relatively underdeveloped regions away from industrial centers. Labor had to be recruited from neighboring rural areas or transferred from other parts of the country. Infrastructure was almost nonexistent in the zones so that the SEZs had to be built from scratch. The lack of infrastructure, both physical and human, was clearly one of the major obstacles to SEZ development during the early period. Poor performance was reflected in low productivity compared to traditional industrial centers on the east coast—Shanghai, Tianjing, Dalian—despite the fact that the SEZs had absorbed more funds, domestic as well as foreign, than any other part of China. Low productivity more than offset low labor costs and also affected the quality of products. A high proportion of zone products was sold in the large domestic



market rather than exported. In terms of psychic distance, more than 80% of FDI during 1980–85 came from Hong Kong and Macau, due to their proximity and cultural and ethnic ties with China, but most of this investment was in real estate and property development, which limited backward linkages and technology transfer.

The comparison of domestic conditions across the three economies shows noticeable differences. While conditions were conducive in Taiwan and South Korea, the performance of SEZs in China was clearly affected by poor location, lack of infrastructure, and less productive labor force.

### *The Role of the State*

The state is instrumental not only in setting EPZ objectives but also in formulating policies that shape EPZ development. It can affect zone performance by setting realistic and clear objectives, formulating specific policies to achieve these goals, and revising policies in response to changing international and domestic situations. In addition, the overall political philosophy and institutional structure of the state can affect its openness to foreign investment and Western methods and its flexibility in adapting to change.

Taiwan and South Korea introduced EPZs in the wake of major shifts in their developmental strategies from import substitution to export promotion. Their objectives for these EPZs were straightforward: attract foreign investment into labor-intensive but high value-added light industries; expand exports and secure foreign exchange earnings; and create employment opportunities. Both states offered incentives to domestic and foreign investors to develop export-oriented industries. FDI incentives in the EPZs included financial benefits such as exemptions from, and reductions in taxes and customs duties, simplified administrative procedures, ready infrastructure, and semiskilled or skilled labor. The choice of EPZ sites proved critical in facilitating rapid, early development of the zones. Kao-hsiung, Taiwan's second largest municipality and an important port city, combined the advantages of an industrial estate with those of a free port—an ideal site to host an EPZ. In South Korea, Masan was chosen because it was close to the industrial center of Pusan and it had existing port facilities in close proximity to Japanese ports, a necessity since the bulk of finished products would be exported to Japan.

However, the door was not simply open for FDI per se. Both states devised specific policies with regard to their EPZs that were designed to encourage development in certain sectors (manufacturing), while discouraging investment in others (hotels). Both states were selective in approving FDI applications, and either through government regulations or through special policy measures, they encouraged exports and induced

EPZ enterprises to establish domestic linkages. For example, until 1980 almost no consumer goods produced in Taiwan's EPZs were allowed in the domestic market. Regulations made it clear that EPZ enterprises were to produce a value-added of at least 25% of the f.o.b. price of an exported commodity. Shoddy products or export rejects, commonly treated as wastes or seconds and usually allowed to be sold at domestic markets in the case of many LDCs, had to be destroyed in the zones.<sup>22</sup>

In South Korea, project eligibility, foreign ownership, and investment scale for the two EPZs were strictly under the state's scrutiny. Two features stood out. First, the state was very selective in its eligibility criteria. Projects that competed in overseas markets with domestic firms or which sought to profit solely from land use were not admitted. Second, export requirements were very stringent and local sales were not envisaged. The South Korean state also used a number of policy measures to encourage or induce EPZ enterprises toward more local sourcing in order to create linkages with the domestic economy. In 1979 the government set up a Machinery Purchase Fund to finance the procurement by EPZ enterprises of machinery made in South Korea; it also used various rates on loanable funds to promote the purchase of local inputs.<sup>23</sup>

Constant efforts were made by the two states to revise investment policies and readjust targeted sectors to ensure that the development of EPZs complemented rather than contradicted overall development objectives. The switch of emphasis from labor-intensive to technology-intensive sectors and the establishment of the Science-Based Industrial Park in Taiwan reflected these adjustment efforts. Thus, although both Taiwan and South Korea were market economies that adopted export-oriented development strategies offering attractive incentives to foreign investors, both states also had clear, directed policies aimed at maximizing the contribution to overall economic growth of foreign direct investment in the EPZs. On the other hand, the initial objectives for the SEZs in China were all-encompassing and without clearly defined priorities. The SEZs were to perform the dual tasks of *waiyin* (introducing foreign investment and technology) and *neilian* (linking with other Chinese enterprises). The difficulties of meeting these two different objectives are demonstrated by the experience

---

22. Thomas B. Gold, "Entrepreneurs, Multinationals, and the State," in *Contending Approaches to the Political Economy of Taiwan*, Edwin A. Winckler and Susan Greenhalgh, eds. (Armonk, N.Y.: M. E. Sharpe, Inc., 1987), p. 195; Kuo-ting Li, *The Evolution of Policy Behind Taiwan's Development Success* (New Haven and London: Yale University Press, 1988), pp. 95-96; D. L. U. Jayawardena, "Free Trade Zones," *Journal of World Trade Law* 17 (1983), p. 430; Wang, "Economic and Social Impact," p. 11.

23. Healey and Lutkenhorst, "Export Processing Zones," p. 32.

of the Shenzhen SEZ.<sup>24</sup> At first, the zone was completely modeled on EPZs as a trade and export base. Soon after its official establishment, however, the objectives were broadened to make Shenzhen a comprehensive economic zone involving industry, commerce, agriculture, animal husbandry, real estate, and tourism. In addition, the Chinese government later complicated the SEZ development process by opening 14 coastal cities to FDI, and these cities have acted as competitors, reducing the potential investment in the zones.

The location of China's four SEZs may largely explain their inability to accomplish intended objectives within a short time span. The four zones (other than Xiamen) were themselves small towns without a sufficient infrastructural framework. Basic facilities had to be built from scratch. According to one study, as late as 1985, Shenzhen still lacked the roads, power, communications, and water supply that were required for manufacturing.<sup>25</sup> Another problem with location of the zones was lack of a sufficient supply of labor and well-trained professional management staff. David Chu estimated that because of the primitive state of infrastructure and low efficiency of labor, industrial productivity was 35% below the national average in the mid-1980s.<sup>26</sup>

Although China offered incentives to attract FDI into the SEZs, the investment incentives offered in the 1980–85 period were across the board and the state neither specified priority sectors, nor set up screening criteria for entry qualification, nor was explicit about export requirements. As a result, most of the early FDI was in real estate and property development, defeating other SEZ objectives such as producing for export. Many domestic firms took advantage of the special SEZ policies to import duty-free components for assembly, then sold the finished products on the domestic market. In effect, the SEZs became a conduit for Hong Kong and Macau imports to move through the SEZs into the nonmarket domestic economy to Chinese consumers. *Neilian* in fact became the real business of the SEZs.

One may speculate on the reasons why the Chinese state deviated from the apparently more successful policies adopted by Taiwan and South Korea. The SEZs were an entirely new experience for China after three decades of central planning. Further, the experimental nature of the zones made it difficult for the state to adopt clear, consistent policies and priorities. In this sense, the SEZs experiment served as a learning process. The choice of zone locations reflected the cautious approach of the state in

---

24. Dai and Shen, "An Inquiry into Strategy of Shenzhen SEZ."

25. ESCAP, *An Evaluation*, p. 50.

26. Chu, "China's SEZs," p. 83.

confining the practices of a capitalist, market economy to areas away from politico-economic centers and isolating any perceived negative impacts from other parts of the country. At the same time, the fact that the sites chosen for SEZs are in the home areas of many overseas Chinese, and that they were close to the potential capital sources of Hong Kong and Macau were also important considerations in the government's decision.

In summary, the differences in the roles of the three states are clear. The Taiwan and South Korean states set straightforward objectives, formulated specific policies to achieve these objectives, and adjusted these policies over time to increase the contribution of the processing zones to economic growth. The Chinese state, on the other hand, failed to clearly define its objectives and priorities, and as a result, did not devise sufficiently specific policies to monitor and direct SEZ development. The zones became conduits between Hong Kong, Macau, and mainland China, with most investments in real estate.

From this brief comparison of export processing zones in three Asian economies, we are led to conclude that both the domestic factors and the role of the state proved crucial to the success of EPZ performance. To the extent that the state can play a very important role in adjusting to the international environment and harnessing domestic conditions to achieve development objectives, it occupies a relatively more important position among the three groups of exogenous variables.

### Policy Implications

The major purpose of this paper was to develop a political economy model that could be used to explain variations in the performance of export processing zones in developing countries. We hypothesized that three sets of variables were likely to affect EPZ performance: the international environment, domestic conditions, and the role of the state. The findings in case studies of zones in three countries generally support our hypothesis.

Based on our case studies, the following policy implications are clear. For EPZs to contribute in a positive fashion to LDC development, the state can and should play an important role in several areas. First, the state should set clearly defined and realistic objectives for its processing zones, taking into account the international environment and domestic conditions. This involves observation and evaluation of opportunities and constraints set by the international division of labor, and a clear-headed assessment of the country's comparative advantage, state goals and priorities, and available domestic resources.

Second, the state should be instrumental in formulating policies to achieve the objectives set for processing zones. The selection of appropriate sites is a crucial basic requirement, as is the necessary physical infra-

structure. Entry qualifications and export requirements for prospective MNEs should be used to better mesh the demands of foreign capital with domestic economic needs. Policies can be developed that include screening criteria for selecting sectors in which to invite investment, requirements for export performance, and mechanisms to encourage domestic linkages. The state must also provide a legal framework to guarantee foreign investors' legal rights and commercial entitlements. In general, the more distance there is between the social, political, and economic systems of the host country and those of the investing country, the more is the need for a highly developed legal framework.

Third, the state must review both the international and domestic economic situations periodically and make policy changes if necessary. The objectives of EPZs need to be reevaluated and modified accordingly. The state should not only monitor the operation and development of zones but also coordinate its policies so that EPZ development contributes to, rather than contradicts the overall economic objectives of the country.