Export Processing Zones in Sri Lanka
-- Costs, Benefits, Profits and Policy Issues

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CONTENTS

Executive Summary i

1. Introduction 1

2. The Social Rate of Return (SRR) - Has Sri Lanka Gained from the KEPZ? 2

3. An Understated or Overstated Social Rate of Return? 7

4. The Financial Rate of Return to EPZ Companies -- Is There Scope for Sri Lanka to Increase the SRR from the EPZs? 9

Appendix 12

References 18

Export Processing Zones in Sri Lanka -- Costs, Benefits, Profits and Policy Issues[1]

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Executive Summary

It is commonly argued that in the 1960s and 1970s manufacturing industry grew rapidly in the Newly-Industrialising Countries (NICs) of East Asia on the basis of an export-oriented trade policy. Furthermore, even though Foreign Direct Investment (FDI) played a small role in some of these countries (notably South Korea), it is argued that, for countries like Sri Lanka, FDI can, and should play a major role in developing export markets. This was certainly the policy followed after 1977, when the newly-elected United National Party (UNP) government set up an Export Processing Zone (EPZ) at Katunayake and offered generous incentives to companies setting up industries in the EPZ.[2]

Sri Lanka now has five EPZs, established since 1978. The July 1994 edition of the Economic Review of the People's Bank contained articles on "Foreign Investment and Export Processing Zones", including one on the "Socio-Economic Effects and Linkages of EPZs" and another on "Impact of the EPZs on the Economy". The former article pointed out that the linkages of the industries in the Zones to the local economy were negligible (see page 25) and implied that various departments in the government could play a role in promoting linkages (see page 27). The latter article analysed the employment generating effect of the Zones and claimed that the transfer of technology was taking place (see page 32) although no data were given to support this assertion.

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[2] Details of the incentives are given on page 11 of the July 1994 Economic Review. The incentives included a 100% tax exemption on corporate income for between 5 and 15 years, but in the early-1990s (about 15 years after liberalisation), this was modified to a preferential tax rate of 15%.

This article attempts to look in more detail at the Katunayake EPZ (abbreviated as KEPZ) and tries to answer two questions:

(i) is the EPZ strategy beneficial to Sri Lanka?

(ii) can Sri Lanka increase the net benefits from the EPZs and, if so, how?

The tentative answer to the first question on the basis of the (crude) data available (and on the basis of excluding the overhead costs of the government organisations[3] overseeing the EPZs) ***is that the EPZ at Katunayake has been a good investment by the Sri Lankan government. The internal rate of return in real terms has been close to 30% p.a., well above the 6% p.a. real return that government investments are expected to yield.***

The methodology used in this paper to carry out the cost-benefit analysis is similar to that used in the 1980s by Peter Warr, an Australian economist. Broadly speaking, this is to subtract from the value added retained in Sri Lanka (RVA), the opportunity (or shadow) costs of the domestic resources used in producing the RVA. Warr carried out cost-benefit studies on EPZs in four countries (Indonesia, South Korea, Malaysia and the Philippines) and estimated that in three of the four countries, the EPZs had generated net benefits, but in the Philippines there had been a net loss. The estimated internal rate of return from the KEPZ in Sri Lanka has been above that in South Korea but below those of Malaysia and Indonesia.

In his study, Warr concluded that although the EPZs had given reasonable social rates of return, they were not extraordinary in their development potential. He found that they were very much enclave developments with few linkages to the rest of the economy. The same can be said of the EPZ at Katunayake.

This was the end of Warr's analysis, but it seems to be important to estimate whether the government can increase the RVA in Sri Lanka either directly *(by, say, reducing the tax concessions given to the companies, by enforcing minimum wage legislation, by imposing a payroll tax to finance better hostel accommodation for labour, etc) or*

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[3] The government organisation responsible for setting up the EPZs was the Greater Colombo Economic Commission (GCEC). In the early-1990s the GCEC was transformed into the Board of Investment of Sri Lanka (BOI).

indirectly *(by taking steps to increase the linkages between the EPZs and the domestic economy).*

Any attempt to increase directly the RVA in Sri Lanka is likely to raise the question whether it will chase foreign direct investment away from Sri Lanka.

This is not a very easy question to answer. It is difficulty to assess how foot-loose foreign direct investment is, or to say what attracts it to Sri Lanka and what might deter it or frighten it away. There are likely to be many factors attracting and deterring foreign direct investment but an obvious factor will be the rate of profit obtainable in Sri Lanka, apart from other obvious factors such as the risk posed by political instability, etc. Clearly, the foreign investor is likely to be more worried about a reduction in tax concessions or about the enforcement of a minimum wage if an investment is yielding a "small" rate of profit (of, say, less than 10% to 20% p.a. in real terms) than if it is yielding a "high" rate of profit (of, say, more than 30% p.a. in real terms).

Therefore, the writer claims that an analysis of the rate of profit of the companies operating in Sri Lanka is an important piece of information to help the Sri Lankan government in its bargaining strategy with foreign investors. ***In this paper an attempt has been made to estimate the rate of profit on the investment by companies in the KEPZ. The rate of profit would appear to be well over 50% p.a. in real terms.***

This very high rate of profit would seem to suggest that there is scope for bargaining, but having said this, there are three points that need to be emphasised:

(i) ***the reliability of the data from which this rate of profit is estimated is questionable.*** *It has not been possible to obtain details of the 'other foreign exchange flows' (which is the difference between net exports and the net foreign exchange earnings). As Table 1 of the Appendix shows, these are not only large but also fluctuating. Furthermore, the net cash flows to companies in Table 2 of the Appendix are residual figures and it has not been possible to obtain an independent check on these figures,*

although data from a small number of other companies seem to support the conclusions of this study (see Edwards 1996);

(ii) ***the rate of profit is an apparent rate of profit and may be understated or overstated depending on the extent to which the companies are practising 'transfer pricing' -- that is, manipulating the prices at which they export to or import from linked companies.*** *To analyse whether transfer pricing is taking place requires direct price comparisons and/or an analysis of the international price profile for the exports from, and imports into Sri Lanka. Such an analysis is beyond the scope of this paper;*

(iii) ***in devising a bargaining strategy with the companies in the KEPZ (or anywhere else in Sri Lanka) it needs to be noted that an uncertain policy framework is likely to inhibit foreign direct investment. This poses a problem for policy formulation.*** *On the one hand, in order to provide a secure framework within which long-term fixed investment will take place, policies should not be changed too frequently. On the other hand, the government should govern and devise policies to maximise the value added retained in Sri Lanka. The net conclusion is that the government should drive a hard bargain but stick to it once driven. Businesses are likely to dislike 'inconsistent and weak' policies as much as 'consistent and hard' policies.*

However, in spite of these reservations about the data, it is clear that there is scope for the Sri Lankan government to increase the value added retained in the country without chasing foreign investors away. This increase in value added retained could be brought about by reducing the tax concessions or by increasing the rents and other charges levied on the companies operating in the Katunayake Export Processing Zone. The proceeds of the extra taxes or charges might usefully be used to improve the boarding conditions of the women working in the Zone and/or on the upgrading of their skills through training programmes. Certainly this is a course of action that the BOI could usefully investigate.

Export Processing Zones in Sri Lanka
-- Costs, Benefits, Profits and Policy Issues

1. Introduction

The development of Export Processing Zones (EPZs) or Free Trade Zones in Sri Lanka dates from the late-1970s. The first EPZ was started in 1978 at Katunayake (KEPZ), close to the international airport about 29 kms north of Colombo. Further EPZs have since been developed -- at Biyagama (BEPZ -- 24 kms north-east of Colombo), at Koggala (KGEPZ -- about 130 kms. south of Colombo or about 16 kms. from Galle), at Mihintale near Anuradhapura and at Pallekele near Kandy. Some details of Katunayake, Biyagama and Koggala are given in Table 1.

Table 1
The Major EPZs in Sri Lanka

Name	KEPZ	BEPZ	KGEPZ
Date of inception	1978	1983	end-1990
Area (hectares) developed as at end-1991	200	140	80
Number of factories in production as at end-1994	88	37	11
Number employed (000) as at end-1994	59	21	5
Contracted investment (Rs. bn. as at end-1994)			
- local	2.0	1.3	0.1
- foreign	7.1	4.5	0.8
- total	9.1	5.8	0.9

Sources: Interviews with BOI officials; Central Bank 1991, 62; and unpublished GCEC data.

Since the establishment of the EPZs, tax and duty concessions have been extended to investments outside the EPZs. Thus, there are companies both within and outside the three original EPZs which have been granted tax holidays and which carry out production in 'an EPZ environment' (that is, with not only tax holidays but also with negligible restrictions on trade and capital mobility). However, this paper restricts itself to an analysis of the oldest EPZ, namely, KEPZ (partly because the information, which is readily available, is more complete on KEPZ than the others).

There are two questions this paper sets out to explore:

(i) Has Sri Lanka gained or lost from the development of the EPZs?

(ii) How, if at all, can Sri Lanka increase its gains or reduce its losses from the EPZs?

The questions are focussed on the KEPZ only.

2. The Social Rate of Return (SRR) - Has Sri Lanka Gained from the KEPZ?

The first question is clearly important because if the Sri Lankan economy has suffered 'social losses' from the KEPZ, then the sensible policy decision is to attempt to change the losses into gains by increasing the value added retained in Sri Lanka (for example by taxing the companies). If this is impossible, and if there seems to be no way in which the losses can be transformed into gains, then the sensible decision would be to consider closing down the KEPZ. (In any such decision to close down an investment, sunk costs are irrelevant and only marginal costs should be considered).

How do we assess whether there have been gains or losses from the KEPZ? In answering this, it is helpful to start by laying out the arguments for and against EPZs in extreme form.

There are those who argue **against** EPZs, saying that:

(i) they are simply a vehicle whereby companies (mostly foreign-owned) can super-exploit a local (mostly female) labour force;

(ii) not only do they super-exploit the labour-force, but they do so using up scarce MFA quotas on exports of garments -- that is, they make exceptional profits from the use of the quotas.

Against these, there are economists and politicians who argue **in favour** of EPZs. They say that though they are far from perfect, they have certain advantages, namely;

(i) they generate scarce foreign exchange;

(ii) even though wage rates are low, employment is nevertheless generated, creating a benefit greater than the opportunity cost of labour. The opportunity cost of labour is low because, in the absence of the EPZ, these workers would be otherwise unemployed and producing nothing;

(iii) even though the demand is initially for unskilled labour, gradually skills are acquired and generated;

(iv) even though most of the technology ('know-how') is initially imported, gradually some technology is transferred into Sri Lanka; and

(v) they may provide a catalyst for further investment.

Thus, those in favour of the EPZs start by pointing to the very high level of the unemployment (estimated to be close to a million in the mid-1990s) in Sri Lanka. They then argue that without the EPZs unemployment would be even higher. Therefore, they ask, surely the opportunity cost of labour employed in the EPZs is well below its market wage? By contrast, those who oppose the EPZs argue implicitly or explicitly that the opportunity cost of the labour and other local resources is equal to or very close to the market prices because there are other ways of using those resources as productively.

There is no simple way of choosing between these views. Clearly, one useful starting point is to estimate the year-by-year flow of net foreign exchange and the domestic costs for companies and the government in the KEPZ. Then a cost-benefit analysis can be made using 'shadow prices' (the ratios of opportunity costs to market prices) for the inputs and outputs. Thus the setting up of the KEPZ can be analysed as a government project with the investment outlay being the infrastructure and administration cost associated with the KEPZ, and the benefits being the net foreign exchange flows less the opportunity cost of the domestic resources used to generate the net foreign exchange flows.

This was the approach used by Peter Warr, an Australian economist, to evaluate EPZs in a number of East Asian and South-East Asian countries in the 1980s [see Warr, 1983, 1984, 1987, 1987b and 1989 (see Box 1)]. Warr's studies looked at the costs and benefits stemming from the EPZs from 1972 to 1982 but then estimated and extended them to 1997 to cover a period of 25 years (see Warr 1989, 81, 82). These cost and benefit flows were then converted into 1982 US dollars and discounted to Net Present Values with the base-year being 1982. To make the estimates for the KEPZ comparable with those in Warr's studies, a similar approach, is used. Warr's method (as explained in Box 1) was to use the UNIDO (1972) approach to project analysis -- that is to value all the costs and benefits in terms of domestic prices (and to revalue the foreign exchange in terms of domestic prices)

whereas in this study, the Little Mirrlees (1974) approach is used, namely, to value all the costs and benefits at border or world prices. **As Box 1 shows, these are roughly equivalent. Any differences between them are likely to be much less than the differences due to errors in data collection.**

The year-by-year figures for the KEPZ are shown in Tables 1 to 6 in the Appendix:

* flows of foreign exchange in current prices ('money of the day') are shown in Table 1;
* domestic costs are shown in Table 2 again in current prices;
* Tables 1 and 2 are then converted into 1982 rupees in Table 4 using the price deflators shown in Table 3;
* since Warr's figures were expressed in 1982 dollars, the 1982 rupee values in Table 4 are then converted into US dollars at the average 1982 exchange rate of 20.8 rupees to the dollar (see Table 5);
* in Table 6 of the Appendix, shadow prices are applied to the 1982 dollar values to get the costs and benefits at opportunity costs which are then discounted back to a base year. To calculate the costs and benefits at opportunity costs in Table 6 of the Appendix, the shadow prices given in the Report on Shadow Prices of the Government of Sri Lanka (see GOSL 1991 in the list of references) have been used. Table 2 compares the shadow prices used in Warr's studies with those used in this study. It is clear that the shadow prices in Sri Lanka are similar, but in general slightly lower than those used by Warr in the studies on the other countries.

Table 2
Shadow Prices
The ratio of shadow prices (at border or world values) to domestic market prices.

	Indonesia	Korea	Malaysia	Philippines	Sri Lanka
Labour	0.75	0.84	0.75	0.51	0.72
Domestic raw materials	0.85	0.85	0.81	0.77	0.67
Domestic capital goods	0.85	0.91	0.82	0.77	0.78

Sources: For Indonesia, Korea, Malaysia and the Philippines, Warr 1989, 81 (each of Warr's shadow prices has been divided by the foreign exchange premia to get the shadow prices at world prices); and for Sri Lanka see GOSL, 1991, 59.

Box 1: A 'simple guide' to the methodologies used by Warr

Assume that we have the following transactions through an EPZ in a particular year..

	$mn.
exports	100
directly imported inputs	50
wages	20
profits	30

Assume that we wish to measure these in 'economic' or 'social' rather than financial terms. We can do the economic or social analysis in terms of domestic **prices or world prices**.

Using **domestic prices**, we have, $mn.

* the retained value added (RVA) valued in terms of domestic prices; this can be calculated by multiplying the direct foreign exchange earnings by a shadow price of foreign exchange. The direct foreign exchange earnings are 100 minus 50 minus 30 (if it is assumed that the profits are immediately remitted overseas) =20. If we assume that the shadow price of foreign exchange is 1.1 times the official exchange rate, then the net foreign exchange earnings (in terms of domestic prices) are worth 1.1
  * 20 = $22 mn. 22
  * from this we need to deduct the opportunity cost of labour using a shadow wage (of, say, 0.8) = 0.8 * 20 16
  * leaves a **net economic surplus** of 6

Note that this is not how Warr presents his figures. He presents them in the following way:

* 'premium' on foreign exchange (= 22 minus 20) 2
* plus the gain from employment (= the market price of 20 less the opportunity cost of 16) 4
* total = (as above) 6

Using **world prices** we have:

* net foreign exchange 20
* minus the opportunity cost of labour revalued at world prices; that is 20 * 0.8 * 1/1.1 = 14.55
  (Note that here the labour is being valued at a shadow wage and then converted into a world price equivalent using a 'standard conversion factor' of 1/1.1, that is the inverse of the foreign exchange premium
* the net sum of these is 5.45
  (multiplying this by the shadow price of foreign exchange of 1.1 gives us the net economic surplus in domestic prices = 5.45 * 1.1 = **6 as above**)

Thus the two methods give equivalent results.

Using these shadow prices, the net gains (or losses) in present value terms have been calculated. Table 3 below compares the gain for the KEPZ in Sri Lanka with the gains and losses from the EPZs in the four countries studied by Warr.

Table 3
The SRRs - the gains and losses from EPZs

	Net Present Values (mns. of 1982 dollars) (at 7.5% per annum)	Internal Rate of Returns (% per annum.)
Indonesia	15	26
South Korea	40	15
Malaysia	143	28
Philippines	-225	-3
Sri Lanka	80+	30

Sources: Warr 1989, 82, and for Sri Lanka, this study (from Table 6 in the Appendix)

Table 3 shows that the EPZs seem to have given good 'social returns' on the investments in Indonesia, South Korea, Malaysia and Sri Lanka, but have generated a 'social loss' in the Philippines. The Table shows that Sri Lanka rivals Malaysia (the Penang EPZ) for the highest social return. However, although the project has generated a good return on the investment in Penang, it is worth noting that the net benefits to Malaysia of US$143 mn. are equivalent to less than 1 per cent of Malaysia's GNP in 1982. Thus the net benefits over a period of 25 years are equivalent to less than 1 per cent of one year's GNP -- hardly a path-breaking development performance! Similarly Sri Lanka's net gain over 25 years of US$ 80 mn. in 1982 prices is equivalent to less than 2 per cent of the 1982 GNP. And it is worth repeating that Sri Lanka's gains have been calculated from data which seem quite shaky and without charging against the KEPZ the costs of administering and promoting the Zone.

Nevertheless the KEPZ, having provided almost 60,000 jobs by the end of 1994 out of a total for manufacturing industry in Sri Lanka of about 850,000 (see Edwards 1996,4) appears to have been a good investment. In Sri Lanka, where both unemployment and underemployment are very high, full-time jobs are scarce and valuable, even if exploitative. Nevertheless is worth seeing whether these gains can be increased. This is done in Section 4. Before that, in the next section, the data are examined in more detail to see if the social rate of returns has been overstated or understated.

3. An Understated or Overstated Social Rate of Return?

The rate of return was calculated on the basis of the infrastructure costs incurred to set up the KEPZ, which were obtained from the GCEC's Finance Department. These are shown in Table 4.

Table 4
Infrastructure costs at the KEPZ

	Rupees Million
Land	18
Site works	1
Roads	27
Water	74
Electricity	88
Sewerage	27
Telecommunications	122
Admin. buildings	26
Others	36
Total	**419**

Note that the expenditure given in this Table are those incurred only by the GCEC.

The GCEC costs charged to the project in the cost-benefit analysis (see Tables 2, 4 and 6 in the Appendix) are only the investment costs of setting up the KEPZ. **The costs of administering the KEPZ (whether incurred at the Zone itself or in Colombo) have not been included**, in spite of the fact that the number of staff employed by the GCEC in the early-1990s exceeded 1,000 and that the total promotion costs incurred by the GCEC between 1978 and 1988 totalled Rs.57 mn.[4]

All of the figures in Table 4 above are in money of the day (not constant costs). The expenditure figures cover the period from 1978 to 1992 but most of the expenditure was incurred at the KEPZ between 1978 and 1981. The year-by-year expenditure at the KEPZ is assumed to be a quarter of Rs. 419 mn. in each of the years from 1978 to 1981 inclusive. These expenditures have been converted into 1982 prices in Table 4 of the Appendix using the price index for capital goods shown in Table 3 of the Appendix.

All the figures for this study have been provided by the Board of Investment. No independent checks on the figures have been possible and to this extent the figures are uncertain. The foreign exchange figures seem to be particularly uncertain. In most years, the net foreign exchange flows appear to have been greater

[4] The promotion costs of the GCEC in 1980 alone were reported to be US$ 500,000 (see Insight, May 1981, page 30)

than the 'exports less imports' -- figures which seem surprising since it might have been expected that profit remittances overseas would have been considerable (the majority of the firms in the KEPZ are foreign-owned or joint ventures -- see Edwards 1996 and UNIDO 1995, 23). In this study the analysis of the social rate of return (SRR) has been carried out using the 'exports less imports' figures (see Tables 1 and 2 in the Appendix).

For the domestic expenditures incurred by the companies at the KEPZ, there are a number of data problems Some of the key detailed figures have not been obtained. The most important item by far is direct labour costs. The numbers employed in each year are available but the average wage has been estimated (see Table 2 of the Appendix). In addition, there are no separate data on rents paid, local taxes, nor on payments for electricity, water, etc. It is assumed that these are included in 'local purchases of raw materials'. Table 5 below compares the composition of domestic expenditures in the KEPZ (between 1978 and 1990) with those in Warr's study for Penang (between 1972 and 1982). It can be seen that the wages proportion is higher with the other payments being lower (assuming that local purchases include electricity).[5]

Table 5
The composition of local expenditures -- KEPZ and Penang, Malaysia

	% of domestic costs	
	KEPZ (1978-94)	Penang (1972-82)
- Local purchases of raw materials	22	16
- Electricity		13
- Labour payments	69	58
- Local capital goods	9	13
- Total	100	100

Sources: The data for KEPZ are derived from Table 4 of the Appendix. The data for Penang are derived from page 73 of Warr, 1989.

The year-by-year benefits and costs at their shadow prices have been discounted to net present values at various interest rates (6% is the real rate of discount recommended by the GOSL 1991 Report -- see page 93 -- and 7.5% was the rate used by Warr). The calculations are shown in Table 6 of the Appendix.

[5] It may be that some of the local purchases (incorrectly) include purchases from other companies within the KEPZ in which case local purchases will have been overstated.

Finally, it is worth noting that the results of the analysis are sensitive to the price indices used. In this version of the study, the foreign exchange flows have been converted into 1982 values using an average of the export and price indices shown in Table 3 of the Appendix.

In conclusion, it would seem that the social rate of return (SRR) from the KEPZ has been good but the figures on which the analysis is based are uncertain. In addition, it is worth noting that this study has not attempted to value any demonstration effects that may be imputed to the investments in the EPZs (see Johansson 1994, 396).

4. The Financial Rate of Return to EPZ Companies -- Is There Scope for Sri Lanka to Increase the SRR from the EPZs?

At the time of writing this paper, exemption from corporation income tax is offered to companies for 5 to 15 years under BOI regulation.[6] It has been argued by some economists that the Sri Lankan government has been too generous with these tax holidays (and extensions to them) and has given away too much to foreign companies setting up in the EPZs (see, for example, page 2 of the Financial Times Survey on Sri Lanka, September 1992). Clearly, there are a number of ways in which the gains accruing to Sri Lanka from the KEPZ might be increased. The retained value added (RVA) might be increased **directly** by:

(i) the government levying corporate taxes on, or by raising the land rents charged to companies in the EPZs;

(ii) the government raising its revenue from the EPZs by auctioning instead of allocating the MFA quotas on clothing (in 1994 about a quarter of all garment quotas for the main US market went to companies in the KEPZ -- see Edwards, 1996);

(iii) preventing leakages of value added through double-invoicing. Note that transfer pricing practices will be reflected in the foreign exchange flows. By contrast, double-invoicing will not be reflected in the foreign exchange flows;

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[6] It might appear that, under Double Tax Agreements, the tax holidays would merely be cancelled out for foreign companies by taxation levied on consolidated profits or profits remitted to the country in which the companies have their headquarters. However, this is not always the case. The tax situation varies, but in many Double-Tax Agreements there are 'tax-sparing clauses' such that the tax 'spared' through tax holidays in Sri Lanka is treated as paid in the country in which the foreign company has its head-quarters.

(iv) imposing a payroll levy on the companies to finance the training of workers, or to finance improved hostel accommodation, or by the imposition and enforcement of minimum wage legislation.

In addition, the government can **indirectly** attempt to increase the RVA by increasing the linkages between the companies in the EPZs and those in the 'domestic economy' (e.g. by 'match-making programmes', by offering incentives to local companies to invest in the supply of components and by inducing the companies in the EPZs to purchase locally through, for example, 'local content' regulations). According to Warr's studies, these linkages were few and far between (for Malaysia, see Warr 1987, 54), and the evidence is that in Sri Lanka the same is true (see Chandradasa, 1994). However, the **direct** method of increasing the RVA will be discussed here as this is the approach which is less commonly discussed.

All of the above (i-iv) are ways in which the government might directly increase the gains from the EPZs. **The obvious objection to these direct policy measures is that they will deter new investment and drive existing investors away from Sri Lanka. Thus it might be objected that the companies are highly foot-loose.**

A major problem is that it is difficult to assess how volatile investment is and how foot-loose companies are. Clearly this is a difficulty bargaining situation. However, the stakes are high and it seems worthwhile spending some analytical energy to assess the problem. Clearly there are likely to be a number of factors which determine the extent to which companies are attracted to Sri Lanka and how foot-loose they are. These will include the security of the investment from appropriation, the political stability of the country, the social conditions for senior management and many others, but one important factor will be the rate of profit. If companies at the KEPZ are making a very high rate of profit or financial rate of return (FRR) (of, say, more than 30% p.a. in real terms), then they are less likely to move out following the imposition of taxes than if they are making a relatively low rate of profit (of, say, less than 20% p.a. in real terms).

Thus the analysis of profits will be a useful tool in guiding the Sri Lankan government's policy towards concessions on investment in Sri Lanka (especially towards direct foreign investment). Thus it seems sensible to carry the analysis beyond that of Warr, and that it should incorporate an estimate of the rate of profit of

the companies in the KEPZ. I say 'incorporate' because fortunately the analysis of profits can be done using the same data as those used for the cost-benefit analysis.

Table 5 of the Appendix suggests that the annual rate of profit to the companies operating in the KEPZ has been more than 50 per cent a year in real terms. Again it is important to emphasise that the figures on which this estimate is based are uncertain.

However, if these figures are correct, it would seem that the profits are sufficiently high to give some scope for bargaining to the Sri Lankan government. This point is made subject to one important caveat, namely, that the profits may be understated or overstated because of 'transfer pricing'. Transfer pricing is defined as a method of valuing transactions between linked companies at prices different from those which would be negotiated in arm's length deals between independent companies. To estimate the effect of transfer pricing requires getting arm's length quotations directly, or deriving arm's length prices by doing an international price profile of the particular commodity.

Thus the profit figures derived from Table 5 of the Appendix are apparent profits. The real or true profitability of the companies in Sri Lanka may be hidden by transfer pricing, but an analysis of transfer pricing in the KEPZ requires much more data than have been available for this paper.[7] It is an analysis that presumably the BOI is undertaking.

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7 It should be noted that transfer pricing may operate to switch profits into or out of Sri Lanka. In Malaysia, in the 1980s, there is some indication that companies in the electronics industry switched profits into Malaysia while textile and garment producers seemed to be switching profits out of Malyasia. The direction of transfer pricing will depend on the incentives (differential tax rates, joint ventrue ownership, etc.) for it.

Appendix

Table 1
Katunayake EPZ -- Foreign Exchange Flows in current prices ('money of the day'); 1978-1994
(All figures are in Rs.mn. unless otherwise indicated)

Year	KEPZ Exports	Imports of materials		Total	Imports of cap. goods	Exports less imports	Other foreign flows (residual)	Net for exchange earnings
		Raw	Other					
1978	0	0	0	0	21	-21	21	0
1979	152	0	0	0	70	82	-52	30
1980	510	393	0	393	105	12	107	119
1981	1036	801	0	801	391	-156	381	225
1982	1439	936	0	936	162	341	-8	333
1983	2110	1343	0	1343	82	685	-60	625
1984	3096	1962	0	1962	106	1028	29	1057
1985	3280	2042	0	2042	88	1150	-81	1069
1986	4436	3177	0	3177	151	1108	64	1172
1987	6083	4292	0	4292	134	1657	-13	1644
1988	7642	5037	0	5037	734	1871	-280	1591
1989	8982	6311	797	7108	282	1592	164	1756
1990	11380	8953	173	9126	1110	1144	1548	2692
1991	13203	10327	570	10897	972	1334	1653	2987
1992	19868	10754	3750	14504	678	4686	-1199	3487
1993	21779	15110	1358	16468	782	4529	117	4646
1994	24941	18456	1653	20109	976	3856	1473	5329
Totals (Rs.bn.)	129.9	89.9	8.3	98.2	6.8	24.9	3.9	28.8
%	100	69	6	76	5	19	3	22

Source: See text.

Table 2
Katunayake EPZ - Domestic Costs and Net Cash Flows of KEPZ Companies in Current Prices ('money of the day'): 1978-1994

(All figures are in Rs.mn. unless otherwise indicated)

Year	Exports less imports (a)	Local raw mats.	No. of empl. (000s)	Annual labour cost (b)	Local/ capital intermed. goods	Domestic exps. by KEPZ cos.	Net cash flows of KEPZ cos.	Infrast. costs of the GCEC
1978	-21	0	0	0	0	0	-21	105
1979	82	0	5.9	30	0	30	52	105
1980	12	0	10.3	66	0	66	-54	105
1981	-156	54	19.1	135	0	189	-345	105
1982	341	82	21.5	161	22	265	76	0
1983	685	107	24.1	183	22	312	373	0
1984	1028	201	26.3	224	29	454	574	0
1985	1150	124	28.6	272	20	415	735	0
1986	1108	151	35.2	368	16	534	574	0
1987	1657	233	39.7	474	37	743	914	0
1988	1871	274	41.0	520	31	824	1047	0
1989	1592	333	42.5	664	29	1025	567	0
1990	1144	344	45.1	798	45	1187	-43	0
1991	1334	179	49.1	1051	209	1439	-105	0
1992	4686	99	52.1	1240	246	1585	3101	0
1993	4529	193	55.9	1374	202	1769	2760	0
1994	3856	382	58.9	1525	331	2238	1618	0
Totals (1978-1994) (Rs.bn.)	16	2.8	-	9.1	1.2	13.1	11.8	0.4
% of gross exports	19	2	-	7	1	10	9	0

(a) From Table 1.
(b) The annual labour cost has been estimated using a 1989 wage of Rs.1300 per month, and the nominal wage index from Table 26 of the Central Bank's Annual Report.

Table 3
Katunayake EPZ - Price Indices Used to Convert the Current Values into 1982 Prices: 1978-1994

Year	Export price index (Textiles and clothing) (i)	Import price index (Textiles and clothing) (ii)	Import price index (capital goods) (iii)	W'sale price index (Textiles and footwear) (iv)	W'sale price index (capital goods) (v)	Wage deflator (1982=1) (vi)
1978	0.62	(n.a.)	0.57	0.77	0.52	0.58
1979	0.72	0.65	0.80	0.80	0.60	0.60
1980	0.80	0.74	0.90	0.81	0.81	0.75
1981	0.90	0.88	0.91	0.90	0.94	0.90
1982	1.00	1.00	1.00	1.00	1.00	1.00
1983	1.10	1.21	1.07	0.94	1.13	1.13
1984	1.11	1.25	1.06	0.96	1.23	1.33
1985	1.27	1.47	1.20	0.98	1.25	1.35
1986	1.38	1.53	1.53	1.00	1.24	1,45
1987	1.70	1.69	1.67	1.05	1.22	1.57
1988	1.87	2.18	2.13	1.07	1.35	1.80
1989	2.33	3.39	2.33	1.11	1.55	1.99
1990	2.92	4.40	3.03	1.31	2.15	2.43
1991	3.33	4.90	3.35	1.38	2.36	2.73
1992	4.35	5.42	3.92	1.36	2.53	3.04
1993	4.76	5.92	4.49	1.46	2.88	3.38
1994	4.24	6.33	4.87	1.56	3.37	3.68

Source: Central Bank of Sri Lanka, Annual Reports (various, CBSLARs).

Notes:
(i) This price index is for minor export products for 1978, industrial products from 1979 to 1984 and textiles and garments thereafter (Table 34 in the 1993 and 1994 CBSLARs).
(ii) Import price index for textiles and clothing taken from Table 34 of the CBSLAR and linked to 1982.
(iii) From Table 34 of the CBSLAR linked to 1982.
(iv) From Table 24 of the CBSLAR linked to 1982.
(v) From Table 24 (for investment) of the CBSLAR linked to 1982.
(vi) This is the nominal wage index divided by the real wage index based on 1982. The nominal and the real wage indices are from Table 26 (for workers in ind. and comm.) of the CBSLAR.

Table 4
Katunayake EPZ - Foreign Exchange Earnings and Domestic Costs in 1982 Prices: 1978-1994
(All figures are in Rs. mn. unless otherwise indicated)

Year	KEPZ exports	Total imports of mats.	Imports of cap. goods	Exports less imports	Local raw mats.	Annual labour cost	Local cap./ interm. goods	Domestic exps. by KEPZ cos.	Net cash flows to KEPZ cos.	Infrast. costs of the GCEC
1978	0	0	35	-35	0	0	0	0	-35	18.5
1979	210	0	97	113	0	50	0	50	63	13.1
1980	627	483	129	15	0	89	0	89	-74	11.6
1981	1155	893	436	-174	60	149	0	209	-383	11.5
1982	1439	936	162	341	82	161	22	265	76	0
1983	1875	1193	73	609	114	162	20	295	314	0
1984	2714	1720	93	901	210	168	23	401	500	0
1985	2500	1556	67	877	126	201	16	343	534	0
1986	2995	2145	102	748	151	254	13	417	331	0
1987	3612	2548	80	984	222	302	30	554	430	0
1988	3706	2442	356	907	256	289	23	568	339	0
1989	3346	2648	105	593	299	334	19	651	-58	0
1990	3296	2643	322	331	263	328	21	611	-280	0
1991	3423	2825	252	346	130	385	88	603	-257	0
1992	4350	3175	148	1026	73	408	97	579	447	0
1993	4306	3256	155	895	132	407	70	609	287	0
1994	4846	3907	190	749	245	453	98	796	-46	0
Totals (Rs.bn.)	44.4	32.4	2.8	9.2	2.4	4.1	0.5	7.0	2..2	0.5
%	100	73	6	21	5	9	1	16	5	1

Table 5
Katunayake EPZ - Foreign Exchange Earnings and Domestic Costs at the 1982 rupee/dollar Exchange Rate of 20.8

Year	Exports less imports	Domestic exps. by KEPZ cos.	Net cash flows to KEPZ cos.
1978	-1.7	0.0	-1.7
1979	5.5	2.4	3.0
1980	0.7	4.3	-3.5
1981	-8.4	10.0	-18.4
1982	16.4	12.8	3.6
1983	29.3	14.2	15.1
1984	43.3	19.3	24.1
1985	42.1	16.5	25.7
1986	36.0	20.0	15.9
1987	47.3	26.6	20.7
1988	43.6	27.3	16.3
1989	28.5	31.3	-2.8
1990	15.9	29.4	-13.5
1991	16.6	29.0	-12.4
1992	49.3	27.8	21.5
1993	43.1	29.3	13.8
1994	36.0	38.3	-2.2

Net Present Values of the NCFs to the KEPZ cos. (i)	@10% p.a.	@25% p.a.	@40% p.a.	@70% p.a.	@80% p.a.
(1978-1990)	40.1	13.2	3.7	-1.3	-1.7
(1978-2002)	53.7	14.6	3.9	-1.3	-1.7
(1984-2002)	57.5	19.1	8.2	2.1	1.4

IRR of the NCFs to the KEPZ cos. (i)	
(1978-1990)	56%
(1978-2002)	56%

(i) The net present values and the IRR for 1978-2002 are calculated on the assumption that the net cash flows to the cos. for 1991-2002 would be equal to the average of the net cash flows for 1986-1990.

Table 6
Katunayake EPZ - Benefits and Costs in millions of 1982 dollars and in Shadow Prices, 1978-2002

Year	Local raw mats.	Annual labour cost	Local capital goods	Infrast. costs of the GCEC	Exports less imports	Net benefits/ costs
Shadow prices	**0.67**	**0.72**	**0.78**	**1.12**	**1.00**	
1978	0.0	0.0	0.0	10.0	-1.7	-11.7
1979	0.0	1.7	0.0	7.1	5.5	-3.3
1980	0.0	3.1	0.0	6.3	0.7	-8.6
1981	1.9	5.2	0.0	6.2	-8.4	-21.6
1982	2.6	5.6	0.8	0.0	16.4	7.3
1983	3.7	5.6	0.7	0.0	29.3	19.3
1984	6.8	5.8	0.9	0.0	43.3	29.9
1985	4.1	7.0	0.6	0.0	42.1	30.5
1986	4.8	8.8	0.5	0.0	36.0	21.9
1987	7.2	10.5	1.1	0.0	47.3	28.6
1988	8.3	10.0	0.9	0.0	43.6	24.5
1989	9.6	11.5	0.7	0.0	28.5	6.6
1990	8.5	11.4	0.8	0.0	15.9	-4.7
1991	4.2	13.3	3.3	0.0	16.6	-4.2
1992	2.4	14.1	3.6	0.0	49.3	29.2
1993	4.3	14.1	2.6	0.0	43.1	22.1
1994	7.9	15.7	3.7	0.0	36.0	8.8
1995	6.1	11.6	1.8	0.0	35.8	16.3
1996	6.1	11.6	1.8	0.0	35.8	16.3
1997	6.1	11.6	1.8	0.0	35.8	16.3
1998	6.1	11.6	1.8	0.0	35.8	16.3
1999	6.1	11.6	1.8	0.0	35.8	16.3
2000	6.1	11.6	1.8	0.0	35.8	16.3
2001	6.1	11.6	1.8	0.0	35.8	16.3
2002	6.1	11.6	1.8	0.0	35.8	16.3
Net present values (1978-2002)						
@ 10% p.a.	**34.2**	**63.7**	**8.0**	**23.8**	**199.4**	**69.7**
@ 20% p.a.	**13.2**	**25.3**	**2.6**	**19.8**	**76.8**	**15.8**
@ 30% p.a.	**6.4**	**13.1**	**1.1**	**16.9**	**36.5**	**-0.9**

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