A Report on

PROTECTIONISM AND TRADE POLICY IN MANUFACTURING AND AGRICULTURE

SRI LANKA

by
Dr Chris Edwards
Institute of Policy Studies
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EXECUTIVE SUMMARY AND RECOMMENDATIONS

This Executive Summary and Recommendations contains two sections. The second summarises the 10 chapters of this report; the first synthesises these summaries and contains policy recommendations emerging from the study.

SYNTHESIS OF THE MAIN REPORT AND RECOMMENDATIONS

Synthesis

In the second half of the 1980s, Sri Lankan agriculture as a whole was not particularly heavily protected, as the following table shows.[1] The estimated EPC on agriculture was 1.6 compared to an average of 1.8 for manufacturing. In the past year, the average protection of the agricultural sector has remained at about the same level as in the second half of the 1980s while protection of the import-substituting manufacturing sector has fallen slightly.

The figures in the preceding paragraph are for the direct effects of protection. The presence of import tariffs and export subsidies has a further effect through the exchange rate - protection reduces demand for foreign exchange and so results in an appreciation of the currency compared to what it would be in the absence of protection. This study estimates that the removal of all trade protection would result in a real devaluation of between 10% and 20%.

Since the production of traded goods benefits from a devaluation, the protection coefficient allowing for the exchange rate effect is less than the direct effect alone. The direct nominal protection coefficient for both the main agricultural crops and manufacturing is 1.3 (see table). This figure falls between 1.1 and 1.2 allowing for the exchange rate effect. The effective protection coefficients are reduced to 1.3 - 1.5 for agriculture and 1.5 - 1.6 for manufacturing.

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1. The estimates in the table are crude and should only be treated as indicative (see the text of the Main Report for details).

Protection in Sri Lankan Agriculture and Manufacturing (1985-91 and 1992/93)

	Consumption weights (1980s)			Production weights		1985-91		1992/1993	
	Based on food	Based on all items	Based on items studied	Based on all items	Based on items studied	NPC	EPC	NPC	EPC
Food									
- rice	25	14	24	5	18	1.2	1.5	1.3	1.5
- wheat flour/bread	7	4	7	(*)	(*)	1.1	1.8	1.3	1.9
- SFCs	4	2	4	3	11	2.0	2.8	2.0	2.8
- sugar	7	4	7	1	4	1.3	1.6	1.4	1.7
- milk	5	3	5	1	4	1.0	1.0	1.0	1.0
- tea and rubber	1	1	1	3	11	0.8	0.6	1.0	1.0
- coconut	8	4	8	3	11	1.4	1.6	1.2	1.4
- sub-total	57	31	55	16	57	1.3	1.6	1.3	1.6
- other food/agric.	43	24	0	7	0				
Total food/agric.	100	55	55	23	57				
Manufacturing		25	44	12	43	1.4	1.8	1.3	1.7
- other non-food/ non-manufacturing		20	0	65	0				
Total		100	100	100	100	1.3	1.7	1.3	1.6

Sources:
- NPCs and EPCs from sections 4 to 10 of the Main Report
- Consumption weights from tables 3.8 and 3.9 of the Main Report
- Production weights from table 3.11 of the Main Report

(*) Production included in manufacturing

Recommendations

The level of protection is not particularly high in agriculture. The nominal protection coefficient for the agricultural sectors covered by this study averages about 1.3. The commodities covered by this study account for about 60% of all consumption. It is likely that the NPC on the excluded items would be lower than 30%. Thus the average NPC for agricultural consumption as a whole is certainly less than 30% - probably between 20% and 25% in direct terms and even less if a shadow exchange rate is used.

It is not the average level of agricultural protection that is a matter for concern. What is a matter of concern is the level of protection on some commodities (eg sugar and some of the subsidiary food crops) and the form that the protection takes. The licensing of agricultural commodities is widespread, notably for wheat, chillies, onions, potatoes and dhal. In addition, there are gazetted import duties but the practice is to give partial waivers of duty on some of the licensed imports, depending on changes in world market prices. The protection policy needs to be changed so that it becomes more transparent and more automatic.

As a policy priority the importing and distribution of the major agricultural commodities that are now (November 1993 - before the 1994 Budget) subject to

licensing should be opened up to competition. This form of liberalisation should be given the highest priority. Such a policy change should be accompanied by the renegotiation of the contract with Prima and the termination of Prima's milling monopoly.

However, an objection to a change to a simple ad valorem tariff on the major agricultural commodities is that volatility in world markets between one year and another and even between seasons will be reflected in volatility in domestic prices. From the points of view of welfare and efficiency, both consumers and producers need to be protected from the instability of agricultural prices on world markets being reflected in the domestic markets.

Thus it is clear that the Government's policy on trade in agricultural commodities needs to cope with the twin objectives of stabilisation and support of domestic agricultural prices. However, it would also be useful if these objectives could be considered separately.

There are various ways in which domestic prices of agricultural commodities can be **stabilised**. These include buffer stocks, the control of prices at farm-gate through state purchases or through trade measures. As far as the major agricultural commodities are concerned, the Government might usefully consider the imposition of a system of variable import duties which would be based on a moving average of past international prices. Such a system should be able to smooth out the effects on domestic prices of short and medium term fluctuations in world prices, and at the same time ensure that domestic prices do not get too far out of line with the long-run trend in world prices.

It is beyond the scope of this report to discuss such a system in detail but it is important that the present licensing system for the major agricultural commodities be abolished. If necessary, a combined system of specific duties, ad valorem duties and import duty waivers which is a less imperfect system of dealing with the twin objectives of stabilisation and support could be implemented as a transitional measure before introducing moving average tariffs.

It seems clear that the level and method of **support** of agricultural prices will become an even bigger policy issue in the near future than it has in the recent past. This is particularly true for rice for reasons given in section 5 of the Main Report: the 'protection' of rice will almost certainly have to be maintained at present levels for the foreseeable future.

The data available for assessing protection in Sri Lanka is generally poor, and at present the statistical data is insufficient to act as an adequate guide to policy. The question arises as to who within the Government should have the major responsibility for analysing the data on international and domestic prices, assessing the effects of dfifferences between these and for making recommendations on policy.

For the manufacturing sector, this role has been played by the Presidential Tariff Commission. This was first set up in 1980 and the Commission has since been renewed, but the present Commission's warrant is due to end in May 1994. The

mandate of the Commission is "to develop an appropriately flexible tariff structure to meet the needs of a liberalised and market-oriented economy" (PTC 1991, 1).

The policy issues that arise from a consideration of the role and powers of the Presidential Tariff Commission are:

- should the warrant of the Commission be extended beyond May 1994;
- if so, how should it be structured and what reponsibilities should it have?

These issues have been discussed with senior officials in the Government of Sri Lanka and differing views have been received. There are those who argue that the existence of the Presidential Tariff Commission encourages lobbying and rent-seeking. This argument is turned on its head by those who argue that the PTC acts as a safety-valve and outlet for the frustrations of industry. There are those who argue that there is an overlap between the responsibilities of the PTC and those of the Industrialisation Commission since one of the functions of the latter is to "inquire and report on the need to impose, remove, increase or reduce the duties on any goods imported into Sri Lanka" (see Industrial Promotion Act, No 46 of 1990, paragraph 10, sub-paragraph 5). Conversely there are those who argue that if the PTC is wound up, then there will be nobody to look systematically at the protection of agriculture. The assertion is commonly made that this role is not being played by the ARTI nor by the Department of Agriculture. In addition it is argued that the Fiscal Policy Division of the Ministry of Finance is at the moment geared to the administration and implementation of Fiscal Policy and not to its formulation.

Again, it is beyond the terms of reference of this study to consider in detail the institutional structure for protectionist policy-making. What does seem clear is that the present institutional structure is not providing the level of analysis necessary to guide policy effectively. If the warrant of the PTC is to be renewed then the training of the staff, and the resources (especially in the form of computer facilities) at the PTC will have to be developed. Even though the number of staff at the PTC is small, it is probably adequate. What is inadequate is their level of training.

Thus even if the PTC is wound up in 1994 and the staff are transferred to the Fiscal Policy Division, staff training will still be necessary. And if another government department becomes responsible for advising on protection policy for agriculture and industry, similar training will be needed.

SECTION-BY-SECTION SUMMARIES OF THE MAIN REPORT

Sections 1 and 2. The context of this report; author and objectives; timing and resources

The objective of this report is to analyse protectionism and trade policy in the agricultural and manufacturing sectors of Sri Lanka.

The initiative for this study came from the Presidential Tariff Commission in March 1993. Serious differences in the findings and conclusions of previous studies of

protection arising from the methods and calculation and coverage were giving cause for concern and a further study of protectionism in the manufacturing sector was proposed to the World Bank to help resolve these differences. The response of the World Bank was that a study of protectionism should be carried out but with the primary focus on the agricultural sector. It was felt that protectionism was high in agriculture and that little was known about protectionism in this sector compared to that in manufacturing.

Accordingly the emphasis in the terms of reference (see Appendix I) for this study was on protectionism in the agricultural sector. This report has been written after an input of 100 days by Chris Edwards, the author of the report and consultant. The consultant made two visits to Sri Lanka - one in April 1993 at the end of which a progress report (see Appendix II) was produced and a programme of work agreed for the research assistants at the Presidential Tariff Commission. The second visit to Sri Lanka was between September and November 1993 when the main bulk of the research was carried out on the agricultural sector and when this report was written.

Three members of staff at the PTC assisted the consultant[2] on the analysis of the manufacturing sector and of imports (but not on a full-time basis) and were involved in the research from May through to November 1993. Two members of staff at the Institute of Policy Studies assisted the consultant with the analysis of the agricultural sector for about a month.

3. Protectionism in Sri Lanka - past studies and the scope and methodology of this one

The economy of Sri Lanka has been liberalised since 1977 and a prominent part of this liberalisation has been the removal of restrictions (through quotas) and reduction of duties on both imports and exports. Over the same period the rupee has been devalued in real terms[3] by about 100% - but by about 10% since 1978.

There have been many past studies on protectionism in the manufacturing sector in Sri Lanka. The EPCs in the studies carried out between 1979 and 1988 have

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2 Chris Edwards, the author of this paper, is a Senior Lecturer at the University of East Anglia, Norwich, NR4 7TJ, UK. During this project he was attached to the Institute of Policy Studies, Colombo, Sri Lanka. In preparing this report, assistance was received from a large number of people in both the public and private sector. In particular the following are thanked for their help;

- the staff of the Presidential Tariff Commission, namely Ben Isaac, Ms Sesha Ariyatilake, Bandula Amarasiri and T. Ariyawansa (their assistance was on the manufacturing sector and on the analysis of import duties);
- Wimal Dissanayake (Director, Fiscal Policy (Tariffs) at the Ministry of Finance) (some assistance in the analysis of import duties); and
- Ms Charlotte Alderson and Ms Ramani Gunatilaka at the Institute of Policy Studies (for assistance in preparing the report and in analysing the agricultural sections of the report especially those on subsidiary food crops, sugar, milk and tree crops)

The help of David Dunham, Saman Kelegama and Howard White at the Institute of Policy Studies is also gratefully acknowledged.

3. Real devaluation here refers to the changes in the real exchange rate weighted by trading partners (see Edwards 1993, 25)

varied between 1.4 and 2.1, but there does not seem to have been a steady decline in the average EPC. This is almost certainly a reflection of the varying quality of the data rather than a reflection of the true state of affairs. In measuring the protection, not one of these studies has systematically carried out direct price comparisons and yet these are necessary because of the large numbers of waivers granted on import duties and because of the widespread licensing of major agricultural imports. In addition, they are useful to check for those situations in which the tariff is not fully utilised (that is, where there is tariff redundancy).

By contrast there have been few studies of protectionism in the agricultural sector and yet the quality of the analysis has probably been slightly better. Two studies are notable - one by Bhalla (in Krueger et al, 1991) covering rice and the tree crops between the 1950s and 1980s; the other in 1993 by Jytte Laursen of the World Bank covering rice, sugar, wheat flour, potatoes, onions, chillies, sugar and coconuts.

The main finding of Bhalla's paper was that rice producers in Sri Lanka were heavily subsidised (relative to world prices) from the 1950s through to the end of the 1970s but that in the 1980s they have not been subsidised to any significant extent (see table 3.5). Between the 1950s and 1970s, consumers of rice in Sri Lanka were subsidised but by a lower percentage than rice producers, the differential cost being financed by the government from very high export duties levied on the tree crops, particularly tea and rubber. In the 1970s, Bhalla argues, consumers were no longer being subsidised and were even paying slightly above world prices. With producers being paid well above world prices, the government was meeting the difference in the form of a large expenditure subsidy. However, through the early 1980s, Bhalla argued, both production and consumption prices of rice were close to the world market price (although the border prices used by Bhalla were not available from his paper).

By contrast the paper by Laursen (Laursen 1993) gives detailed sources and as a result it has been possible to modify, extend and update her study. The main conclusion of Laursen's study was that the poor do not gain from the protectionism of agriculture in Sri Lanka. She estimated that the poor paid a 59% excess over the world prices for a major part of their food expenditure in 1991. In fact the estimate of 59% was almost certainly too high, since she took an incorrectly high weight for the consumption of (heavily-protected) potatoes. Instead the correctly weighted excess was about 30%.

However in spite of the odd consumption data on which the conclusion was based, the paper by Laursen was commendable for its clarity and for setting out the data sources. This study has built on the foundations laid by Laursen.

The coverage of this report is about 60% in terms of the consumption basket and about 75% in terms of the production of traded goods. However the data for both the agricultural and the manufacturing sectors are crude and more research is required if policy is to be better-informed. In doing direct price comparisons for the agricultural sector, there are particular problems associated with ensuring that the price comparisons allow for quality differences and for seasonal variations (see section 3.4). These problems are particularly severe for subsidiary food crops (see section 7).

The approach adopted in this report has been to estimate the direct protection at official exchange rates and then to estimate the indirect protection (the change in the exchange rate which would result from the liberalisation of trade) so as to estimate the total protection.

The following summaries of the sections of the Main Report discuss the direct protection for consumers and producers at the official exchange rates. The first part of this Executive Summary, Synthesis and Recommendations has brought these summaries together, estimated the indirect protective effect (that is, contained a discussion of the extent to which the exchange rate is likely to change with the liberalisation of the agricultural or manufacturing sectors), and made some policy recommendations.

4. The manufacturing sector

There have been a number of studies of effective protection in the Sri Lankan manufacturing sector between 1979 and 1988. The average EPCs estimated by these studies vary considerably and no discernible trend is evident. It is probable that the average rate of protection has been declining over this period but that this is not reflected in the estimates because of methodological and data differences between the studies.

In analysing the present level of protectionism in the manufacturing sector, this study relied on input-output coefficients at world prices derived from the PTC report (1991) which collected data in respect of 1988. The NPCs for 1993 were then applied to these coefficients and the new EPCs estimated for 37 'large' industries (where an industry is defined at the 4-digit ISIC level). The largest industries were identified from the data collected by the DCS for 1990.

Thus the 1993 estimates were derived from the PTC report and if the data collected for the 1991 PTC report is incorrect, then the data for this study will also be wrong. Unfortunately there were certain deficiencies in the 1991 PTC report which means that it provides a weak foundation for further studies. Section 4.2 discusses the deficiencies of the PTC report, the major one being that no direct price comparisons were carried out.

Section 4 covers what the Central Bank calls 'factory industry' with export crop processing being covered in section 10. This study covers about 90% of value added in 'factory industry'. The production weights for deriving the average EPC were derived from the Annual Survey of Industries for 1990 (see table 4.4).

The average EPC in 1993 is estimated as 1.7 compared with an average for 1988 of 1.8 (see table 4.8). Thus there seems to have been a small reduction in the average EPC in the manufacturing sector over the past five years. Nevertheless, the Net Subsidy Equivalent (NSE) is running at about Rs 11.5 bn (at 1990 prices) for the manufacturing sector - equal to about 4% of GDP. The NSE per job is about Rs 65,000 compared with an annual labour cost per employee of Rs 30,000.

Thus the present level of effective protection is high. This is reflected in a mixture of high costs and high profits (see table 4.9). But unless the profits are treated as costs (on income distribution grounds or because they are remitted overseas), the ratio of real resource costs to foreign exchange earnings is around 1.0 - this assumes shadow prices for both labour and 'other non-traded inputs' of 70% of market prices.

What would happen with total liberalisation (that is if the protection were removed)? In the absence of protection, assuming the same depreciation, wages and other non-traded costs, and assuming that a 15% devaluation[4] accompanied the liberalisation, the manufacturing sector as a whole would be making a very small profit (estimated from table 4.9).

The effective protection in existence at present enables the protected companies to make a gross profit on capital employed of over 30%. However this is a gross rate of profit and should be viewed in the context of the very high interest rates in existence in Sri Lanka over the past three or four years - with the rediscount rate on Treasury Bills being over 15% per annum for the whole of this period.

At present the PTC uses a benchmark effective protection coefficient (EPC) of 1.5. This is higher than the indicative figures put forward by many trade economists, and the analysis of section 4 suggests that the maximum figure should be 1.4.

There has been political pressure for a compression of the tariff structure from the present 4-band to a 3-band system with the top rate being 35% as opposed to the present 55%. Since the top rate at present includes an EDB cess, the compression would mean an elimination of the cess, a move called for in a recent World Bank report (May 1993, 18). Interestingly, a reduction in the top rate of duty from the present 55% to 35% would not reduce the EPC on the manufacturing sector by very much. Estimates by the staff at the Presidential Tariff Commission show that the the EPC would be reduced only a little - from 1.6 to about 1.5. This is because many of the commodities carrying the highest rate of import duty are not only major outputs but also major inputs.

However, the statistical base for the manufacturing sector in Sri Lanka is weak with widely-varying estimates of value added by industry. This weak statistical base would seem to suggest that an effective, selective policy on protectionism is impossible. In other words, the information base for 'picking winners' is not there. In addition many government officials and advisers in Sri Lanka have warned that the bureaucracy in Sri Lanka is insufficently distanced from the industrial sector to be able to apply the mixture of support and discipline that was so characteristic of the successful South Korean industrial policy through the 1960s and 1970s. Thus in South Korea exports were encouraged by offering protection in the domestic market conditional on export performance. The application of such a policy in Sri Lanka requires inter alia a much better statistical base than is available at present.

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4. The devaluation (the shadow exchange rate) that would accompany liberalisation is discussed in the first part of this Summary, Synthesis and Recommendations and in Appendix viii to the Main Report.

The present trend in industrial policy in Sri Lanka seems to be away from a case-by-case analysis. Nevertheless, even without a case-by-case analysis, a better information base is needed to handle the transition towards a more open, liberalised economy. This has implications for the institutional structure - for the PTC, the Industrialisation Commission, the Fiscal Policy Division of the Ministry of Finance and the Ministry of Industry, Science and Technology which have been considered briefly under Synthesis and Recommendations.

5. Rice

Rice accounts for approximately 25% of the consumer basket, about three-quarters of total grain consumption and 45% of calorie intake in Sri Lanka. It also 'employs' about half the labour force. Rice area has doubled in size and output has increased more than fivefold since 1953. As Bhalla has put it; "Whether in terms of rice subsidies for consumers, protection for producers, or massive irrigation programmes, rice has been central to the affairs of the nation" (Bhalla in Krueger et al 1991, 197).

As already stated, rice production in Sri Lanka was heavily protected (relative to world prices) in the 1960s and 1970s and rice consumption was heavily protected (again relative to world prices) in the 1960s but not in the 1970s. In the early 1980s rice protection was low and between 1985 and 1991 it averaged about 20% for consumers. It is about 35% at the moment.

Protection policy on rice is posing, and will continue to pose a major problem in Sri Lanka. Over the past decade the real price of rice on the world market has declined by about 40% while the real price of paddy received by the farmer in Sri Lanka has declined by about 20%. Over the same period the average paddy yield has risen by about 5%, so that gross incomes per hectare to the paddy farmer have fallen by about 15%.

Thus slowly rising yields have failed to keep pace with the rapid decline in the real price of rice on the domestic market. The World Bank's forecast for the year 2000 is of a continuing decline in the world price from $288/MT for Thai 5% broken in 1990-1992 to $255/MT in the year 2000 - all at 1990 prices. Thus the prospect is of a further fall in the real price of about 12% over the next 8 years.

With a complete liberalisation of rice imports, the farm gate price in the year 2000 (at 1990 prices) would be Rs 5.6/kg, or about 10% below the actual farm-gate price in 1990. Thus, with a continuing decline in the world price of rice, declining labour incomes from paddy are inevitable unless yields per hectare increase, non-labour costs are cut or paddy production is protected.

At the likely future price of Rs 5.6/kg. and at the average yield of 3.4 MT/ha, the ratio of domestic resource costs (DRC) at market prices (of about Rs 24,000 per hectare - see Edirisinghe 1991, 158) to 'net foreign exchange earnings' is about 1.8. Edirisinghe's figures suggest that at market prices and at official exchange rates, rice production is only likely to be 'efficient' (that is, give a DRC ratio of one or less) for yields of over 4 MT/ha; over 60% of Sri Lankan production has a yield of less than 4

MT/ha. Even using a 60% shadow wage and a premium on foreign exchange of 10%, the 'break-even yield' is still as high as 3 MT/ha and about a third of production is below this.

It seems politically inevitable that protection of the paddy sector will continue into the future. It is likely that tariff protection on rice (recently raised to 35%) will have to be (at the very least) maintained over the next decade if the real world price trend is downward, as is implied by the World Bank's forecast price of $255/MT in the year 2000. But then such a high rate of protection will raise real wage costs since rice accounts for something like a quarter of total food expenditure in Sri Lanka. Furthermore, since the rural landless and urban households are net consumers of rice a subsidy to paddy producers is not necessarily progressive in income distribution terms.

However, there is of course a gearing up element in the structure of protection so that a particular percentage level of protection on rice translates into a higher percentage subsidy on paddy labour incomes. Thus a 20% nominal protection rate on rice is approximately equivalent to a subsidy to labour incomes of about 40%. Thus the recent rise in the NPC on rice to 1.35 implies a subsidy of something between 60% and 70% to labour incomes, compared to a free market alternative .

6. Wheat and Wheat Flour

Almost all of Sri Lanka's flour and wheat requirements are met through imports (an annual average of over 600,000 MT of wheat per annum between 1987 and 1991). The average nominal protection coefficient on wheat flour was about 1.1 between 1985 and 1991. The average expenditure in Sri Lanka on wheat flour and bread is about 7% of total expenditure on food, so that the protection represents about 0.7% of total consumer expenditure on food.

At the time of writing (a few days before the 1994 Budget), the import of wheat and the distribution of flour is monopolised by the Government of Sri Lanka through the government-owned Cooperative Wholesale Establishment with the Food Commissioner's Department acting as a storage and distribution sub-contractor.

A consultancy study by Borsdorf in 1993 was critical of the flour distribution system, but there are major obstacles to the liberalisation of wheat and wheat flour markets in Sri Lanka. One is the provision of wheat through the PL480 aid programme of the US government; the other is the contract between the Government of Sri Lanka and Prima under which Prima is guaranteed an annual minimum of 435,000 MT of wheat to process into flour at its mill at Trincomalee. The contract with Prima is due to run until the year 2004 and under it Prima undertakes to provide 74 MT of flour for every 100 MT of wheat supplied. The rest it keeps as payment for its milling services.

The system of importing, milling and distribution currently in operation gives rise to the following issues:

(i) is it worthwhile, and is it possible to renegotiate the Prima contract? There are conflicting views as to whether it is beneficial for Sri Lanka;

(ii) even without the renegotiation of the Prima contract, it is worth investigating whether a second flour mill on the west coast of the island is viable to mill the excess of the annual consumption over the amount currently guaranteed to Prima;

(iii) there is a case for liberalising the non-PL480 imports of wheat and the distribution of flour. The necessity of centrally coordinating the supply of wheat because Prima has limited storage capacity for wheat at Trincomalee has been used as an argument against the liberalisation of imports.' With respect to liberalising flour distribution, losses in the present distribution system are alleged by Borsdorf to amount to approximately Rs 210 mn a year. In addition he has argued that transport costs are excessive so that the liberalisation of the flour distribution system might lead to reduced distribution costs.

However it is clear that the contract with Prima is the main obstacle to the liberalisation of the wheat and flour trade into and within Sri Lanka. Renegotiation of that contract should be urgently investigated.

7. Subsidiary Food Crops

In terms of the value of gross output, the major SFCs are cassava, maize, chillies, red onions, potatoes, big onions and the pulses. Statistics on the domestic prices and outputs of these crops in Sri Lanka are very shaky indeed and need improvement if policy is to be better-informed. Information on import prices of SFCs is even more uncertain.

It seems as though the value added by SFCs is about 20% of value added by 'other agriculture' in Sri Lanka (see table 7.3). There are high gazetted import duties on most SFCs and most (potatoes, red onions, big onions, black gram, chillies and maize) are also subject to import licensing - again note that this report is being written a few days before the 1994 Budget, which may well change the situation.

The SFCs which are important in terms of consumption are more or less the same as those important in production (see table 7.6). Table 7.12 shows that the average NPC for SFCs (weighted by consumption) between 1985 and 1991 was about 2.0. Thus Sri Lankan consumers would seem to have paid about double the world prices for these crops in recent years, but Laursen's conclusion that the poor are particularly badly affected by this price 'excess' is unjustified.

The effect on producers is uncertain, again because of the shaky statistical base and the short time within which this study has been done. For recent years, the effective protection on SFCs has averaged about 2.8 and it is likely that the incomes per labour day for potatoes and red onions would be very low without protection.

Another way of putting this is to say that, for these crops, the ratios of real resource costs to foreign exchange earnings are well above one. This is true even if a shadow wage is used and even though these crops are labour-intensive relative to most others. By contrast big onions and chillies would seem to continue to be attractive with liberalisation.

The conclusions of the section on SFCs are:

- protection on SFCs is generally high for both consumers and producers;
- it is desirable to abolish the licensing of imports of SFCs and replace the licensing with duties which are based on moving averages of CIF prices. In a transitional period, the licensing could be replaced by a combination of specific and ad valorem duties.

Thus it is desirable to replace the present system of protection with one which is more transparent and competitive. However it seems, from most of the studies on diversification in Sri Lanka, that changing the form of protectionism and even reducing the level of protection on SFCs is unlikely to transform the Sri Lankan countryside. In view of the localised production of SFCs (particularly potatoes and red onions), the regional effects would of course be considerable. However the constraints to diversification are not, it seems, only, or even mainly, due to price distortions. Land tenure arrangements and the lack of extension services and infrastructure are alleged to be important obstacles to diversification.

8. Sugar

In recent years, imports of refined sugar have accounted for about 85% of Sri Lanka's sugar consumption. Therefore domestic sugar production accounts for about 15% of consumption. This is heavily protected with the NPC facing the consumer averaging about 1.3 between 1989 and 1992.

In 1992 the domestic wholesale price of sugar exceeded the border price by nearly 40%. Given that expenditure on sugar accounts for about 7% of total food expenditure in Sri Lanka, the import protection accounts for something like 3% of total food expenditure.

This study also derives a NPC of 1.4 facing the Sri Lankan producer of sugar in recent years. This has been calculated by using appropriate quality discounts in order to compare the prices of domestically-produced 'plantation white' and brown sugar with imported white refined sugar.

The market for world sugar is 'thin' and therefore highly volatile. However, at the price forecasts of the World Bank for the immediate future, most of the Sri Lankan sugar industry would find it difficult to survive liberalisation. For the areas with low yields (between 50 and 70 MT/ha) such as Pelwatte and Hingurana, the domestic price of sugar needs to be at least 40% above the equivalent long-run border price in order to give a level of producer income competitive with other crops (most notably paddy).

It is only on the basis of yields of over 100 MT of cane per hectare (as at Sevanagala) that sugar production in Sri Lanka is competitive. These estimates have been derived without charging full-cost irrigation fees. With these included, the conclusions would be reinforced.

Thus it is difficult to support a NPC for sugar of more than about 1.2 or 1.3, which on long-run price projections for refined sugar of about $330/MT is equivalent (on the basis of an exchange rate of Rs 50/US$) to a specific duty of between Rs 3/kg and Rs 5/kg compared to the much higher import duty (including a surcharge but after deducting the waiver given in return for local purchases) at the time of writing (November 1993) of Rs 6.75/kg.

9. Milk

This sector has been studied as the result of a specific request by the Presidential Tariff Commission. The milk industry was looked at in a study on the livestock sector by Brown Copeland in 1992. While recognising that the imposition of a tariff runs counter to the general thrust of government policy, the study recommended that the import duty on whole milk powder should be set at 20% or even as high as 35% to encourage the local dairy industry.

In 1990 and 1991, local milk supplied about 20% of total milk consumption (on a liquid milk equivalent basis) in Sri Lanka with the rest being supplied by imported milk powder. In the past two years the duty on imported milk powder has been low - at about 10% - and protection of the milk industry in Sri Lanka is low compared to most other Asian countries with the result that domestic prices in Sri Lanka are lower than those in the other countries. However, prices are much higher in Sri Lanka than in New Zealand.

Over the past decade, the farm-gate price of milk in Sri Lanka has declined by about 5% in real terms, and Brown Copeland argue that it is this decline which has caused liquid milk production in Sri Lanka to grow only very slowly. For 1992, the NPC on milk is estimated to be less than one (in spite of the import duty).

World prices of milk seem to have been constant in real terms over the past decade, although there are indications that in the near future a rise is likely, particularly if the GATT Uruguay Round is completed. However even if the future CIF price (in 1992 prices) hovers around US$1800/MT, it is unlikely that milk production in the high-cost Hill Country, Mid-Country and Coconut Triangle areas will be competitive or provide incomes of much above Rs 50/labour day. To give them a reasonable income per labour day would seem to require a NPC of at least 1.2. By contrast the 'production cost' of the Low Country milk producers is about 25% below that of the Up Country producers and they are competitive with imported milk, even without protection.

10 Tree Crops Sector

There has been a sharp decline in the importance of this sector in the Sri Lankan economy over the past decade. A major contributory factor to this decline has been the high export duties, and NPCs for this sector have been heavily negative over the past 30 years.

Following the recent reduction in export duties as part of the re-structuring of this sector, negative protection for tea and rubber is now quite small. The DRC ratios for tea and rubber are low despite Sri Lanka's yields being low relative to those in other countries (World Bank 1993). Therefore Sri Lanka has a strong competitive advantage in producing these two crops.

The case of coconut is somewhat different. Unlike either tea or rubber which can be treated unambiguously as exportables, only desiccated coconut (of coconut products) can be regarded as an exportable. At least 79% of all coconut oil and copra produced in Sri Lanka is consumed domestically. The domestic market is protected; hence the entire market is segmented and the average NPC facing the producer is different from the average NPC facing the consumer. This study derived an overall NPC of 1.2 for producers and of 1.4 for consumers, for the sector as a whole for the period 1990-1992. The latter implies that consumers faced a price for coconut products in the domestic market which is at least 40% above the border price. Given that coconut products account for approximately 7% of total expenditure on food, approximately 3% of total food expenditure seems to have been due to protection of the coconut industry. Since January 1993, a lower import duty of 20% has been levied on the import of coconut oil to Sri Lanka. Also, export duties on coconut products were abolished in December 1992. So the NPC for consumers is about 1.2 while that for producers is a weighted average of about 1.1.

The low DRC on this sector, despite low yields relative to other producers, indicates that Sri Lanka has a strong competitive advantage in the production of coconuts (World Bank 1993). However, these DRC ratios have been calculated on the basis of data for 1988, which was an unusually good year in terms of weather conditions (absence of drought). Therefore, it would seem that even though coconut production would offer attractive incomes even with a lower level of protection, the risk factor involved encourages a cautious approach to formulating policy.

Main Report

1. The context of this report (terms of reference etc.)

This report discusses whether, and in what specific areas, there should be free trade or protectionism (through tariffs, quotas/licences etc.) in the manufacturing and agricultural sectors of Sri Lanka. To understand this report, it is necessary to understand the background to it.

In November 1992, Chris Edwards, the author of this report submitted a paper to the Presidential Tariff Commission (PTC) on protectionism in manufacturing in Sri Lanka. This contained an appraisal of the present situation and some suggestions for procedures which might be followed by the PTC in appraising protection. Following the submission of that paper, Mr K Shanmugalingam, Additional Deputy Secretary to the Ministry of Finance and Chairman of the PTC, proposed to the World Bank that Chris Edwards carry out a study of protection in the manufacturing sector of Sri Lanka. Subsequently, on behalf of the World Bank, Orsalia Kalantzopoulos of the World Bank agreed to a study of protectionism but stated it should concentrate on the agricultural sector. This emphasis was felt to be desirable because a number of studies of the manufacturing sector have been carried out in recent years, whereas relatively little was known about protectionism in the agricultural sector.

The World Bank had started a study on agricultural diversification in 1992 (see Hunt and Hentschel 1992) and in a report dated May 21st 1993 had expressed concern with the level of protectionism (through both tariff and non-tariff barriers) in the agricultural sector (World Bank May 1993,12). Thus the feeling of some advisers in the World Bank was that, in Sri Lanka, agricultural protectionism is a more serious problem than protectionism in the manufacturing sector.

Thus, on the initiative of the World Bank, the terms of reference for this study were revised after a meeting between Chris Edwards, Orsalia Kalantzopoulos and Patrick Low of the World Bank on April 8th 1993. The revised terms of reference placed an emphasis on agriculture (see Appendix I), although it also retained the emphasis on counterpart collaboration, clarity, coordination and consequences - that is on:

- the training of Sri Lankan research assistants;
- the clear presentation of the findings of this report in terms which can be understood by senior government officials;
- coordinating the research with other bodies doing similar and related research; and,
- the consequences - making clear the implications of the research for government policy.

Subsequently the terms of reference were discussed at meetings of the PTC and an agreement was reached for the provision of some research assistance from the staff of the Presidential Tariff Commission. A progress report to PTC was presented and discussed on 24th April 1993 (see Appendix II).

2. Author and objectives; clients; resources and timing

2.1 Author and objectives

This report has been written by Chris Edwards. The objectives of this report have been threefold:

(i) to update the studies of effective protection in the manufacturing sector and to highlight the major issues;
(ii) to study the effects of protectionism in the agricultural sector and to highlight the major issues;
(iii) to make recommendations for government policy.

These objectives have been achieved, although much more research on some of the issues is desirable. The areas in which more research and data collection is desirable are highlighted in the Executive Summary and Recommendations.

2.2 Clients

The report has been prepared for the Presidential Tariff Commission of the Government of Sri Lanka and the World Bank.

2.3 Resources and Timing

The research for the report was financed through the World Bank at a budgeted cost of $56358 (see revised progress report) under the Public Manufacturing Enterprises Adjustment Credit (PMEAC). The research for the report was done during the period between April 1993 and mid-November 1993, but neither Chris Edwards nor the research assistants worked on the project for the whole of this period. The principal input was from Chris Edwards over a period of 100 days (of which 90 days was in Sri Lanka). The research assistance of the staff of the Presidential Tariff Commission (Sesha Ariyatilake, Bandula Amarasiri and T. Ariyawansa) was provided during the period between April 1993 and October 1993, although by no means on a full-time basis. Ben Isaac and Wimal Dissanayake did not work directly on the project but did attend some of the meetings, and were available for consultation and advice between April and November 1993. Chris Edwards worked on the project in Sri Lanka between April 4th and 29th 1993 and between September 9th and November 11th 1993.

As stated earlier, Chris Edwards wishes to acknowledge the assistance and cooperation of a large number of people working in both the private and public sectors in Sri Lanka. To assist in the development of the data and analysis in this report, detailed sources are provided except where confidentiality has been was insisted upon. All references are given in detail at the end of this main report and a list of abbreviations is given in Appendix III. A list of the conversion rates used is given in Appendix IV.

3. Assessing Protectionism in Sri Lanka - Protectionism Past and Present, Past Studies and the Methodology and Scope of This One

3.1 Protectionism in Sri Lanka Instruments

This report discusses protectionism. It discusses the effect of protectionism and the possible costs and benefits of protectionism. What is meant by protectionism and trade policy? This will be clear from the text, but in general it refers to those areas of government intervention which drive a wedge between the import (cif), export (fob) and domestic prices of goods. This includes import duties (ad valorem and specific), excise duties (but only if levied only on domestically-produced goods and not on imports) and licences and quotas.

Trade policy is of course only one among many possible instruments of government policy and needs to be considered alongside other instruments. Other closely-related instruments at which this study does not look in detail are the following:

- government policies on corporate and income taxes and on tax incentives and holidays;
- government policies affecting the financing of industry and agriculture, especially the controversial area of interest rates;
- government policies on exchange controls and the regulation of the exchange rate;
- government policies on labour conditions and remuneration.

Nor does this study look in detail at competition policy on which a number of reports have been produced recently in Sri Lanka (see Kelegama and Chitty, August 1993 for a survey). And for a broader discussion of industrial policy issues, see Edwards 1993.

In Sri Lanka, the period since 1977 has been a period of liberalisation in which protection has been reduced. Tariff levels have been reduced, quota restrictions relaxed and a multiple exchange rate system has been converted into a unified one. As a result, the revenue from export and import duties combined has declined as a proportion of total government revenue between 1983 and 1993, as is shown in table 3.1 below.

Between 1983 and 1993 import duty revenue has risen as a proportion of government revenue. It has also risen as a proportion of imports - from about 10% in 1983 to about 12% in 1992. But of course this does not mean that the overall level of protectionism has risen over the same period. Imports may be completely cut off by high duties or by import quotas.

In addition, the incentive to import (and export) is influenced by the exchange rate, and over the period between 1983 and 1991 there was a rise of about 20% in Sri Lanka's trade-weighted real exchange rate index (that is a real devaluation against trading partners - see Edwards 1993, 25).

Table 3.1:
Government Revenue 1983-1993

Item	1983 (Rs bn)	1983 %	1993(a) (Rs bn)	1993 %
Income taxes	3.4	13	12.4	12
Sales and turnover taxes	6.2	25	31.9	30
Selective sales taxes				
- Tobacco	1.4	6	8.4	8
- Defence Levy	0	0	5.7	5
.-Other	1.8	7	6.8	6
Import duties	4.8	19	24.3	23
Export duties	2.5	10	0.5	1
Other current revenue	4.9	19	14.1	13
Capital Revenue	0.2	1	2.2	2
Total	25.2	100	106.3	100

Source and Notes:
Central Bank of Sri Lanka Annual Report 1992, table 59
(a) Approved estimates

The structure of protectionism in Sri Lanka has been simplified over the past 15 years as the liberalisation of trade (and the exchange rate) has been effected. The present structure (note that this is being written just before the Budget for 1994), consists of a four-band tariff with the 4 bands being 10%, 20%, 35%, and 50% (the latter 55% with the inclusion of the 10% EDB cess which applies to the top rate). However, specific duties are still levied on a number of items, although the situation changes rapidly. For example in April 1993 specific rates on textiles were converted into 100% ad valorem duties.

In addition the picture is blurred by three other factors:

(i) the incidence of marking-up import values before turnover taxes and the defence levy are applied;
(ii) the large number of import waivers and exemptions that are given; and
(iii) the import licences that are required for a number of important commodities.

The following paragraphs look at each of these problems in more detail.

(i) After import duty (and the EDB cess if applicable) has been applied to the CIF price of a good, the CIF-plus-duty is marked up by as much as 25% before the Business Turnover Tax, defence levy and, where appropriate, excise duty are applied. (It has not been possible to determine how widespread this practice of mark-up is.) For most of the agricultural products covered in this report, direct price comparisons have been made so that the problem of markup will not apply, but it will be applicable to the manufacturing sector where the gazetted duty rates have been used. To the extent that marking-up on imports is common, the effective protection coefficients (EPCs)

estimated for the manufacturing sector in section 4 will be understated.

(ii) Import duty waivers and exemptions for goods entering the Principal Customs Area are numerous in Sri Lanka so that the gazetted or listed duties are not the same as those actually levied. Obviously many imports which are inputs into exports produced in bonded or duty-free zones do not have duties imposed on them, but in addition duty waivers are given on many imports coming into the 'domestic' economy. In this study, an analysis of a large sample of the 1992 import duties was carried out. Details are contained in Appendix V.

In 1992, there were over 8,000 consignments on which import duty waivers were granted. These have not yet been gazetted by the Government and it was beyond the scope of this study to look at them one-by-one. However, the analysis of the 1992 imports and import duties suggests that the import duty waivers and exemptions on imports coming into the 'domestic economy' were at least Rs 3.9 bn., compared to a total of import duties paid in 1992 of about Rs 21.4 billion (see tables 2 and 3 of Appendix V).

This estimate is based on a sample of 1408 Harmonised System (HS) codes out of the total of about 6,000 HS codes. Information on the value of imports and actual import duties was analysed for all HS codes for which the 1992 value of imports exceeded 10 million rupees. For each of these HS codes the actual duty paid was compared with the duty payable if the gazetted rate had been paid. The difference between the actual duty and the gazetted duty for the sample of 1408 HS codes totalled Rs. 42 bn. This difference consists either of those duties which are not paid because the imported goods are going into exports or they are not paid because they are explicitly waived or exempted even though the goods are being 'consumed' in the domestic economy. This distinction was difficult to make on the basis of the data available to this study and the allocation of the Rs 42 bn. is extremely crude (see table 2 of Appendix V). The estimate of Rs 3.9 bn. (say, Rs 4 bn) in this study compares with other estimates of Rs 4 bn. and Rs 5 bn. (again see Appendix V).

What is clear is that the number and value of waivers is large and this underscores the need for direct price comparisons in assessing the levels of nominal and effective protection. Thus, the analysis in Appendix V gives useful data on the actual import duty rates paid in 1992.

(iii) In addition to import and export duties, there are a number of imports for which licences are required. These were examined in February 1993 by the Presidential Tariff Commission (PTC) which recommended the retention of some of them. Table 3.2 below lists those items subject to licences in February 1993 and also shows the items for which licensing retention was recommended by the PTC and the reasons given by them for retaining licensing.

Table 3.2:
Commodities subject to licensing - Sri Lanka - February 1993

HS Chapter Code	Item description	Abolition (A) or retention (R) of licensing recommended by the PTC report ... and reason for retention
AGRICULTURAL COMMODITIES AND FOODSTUFFS		
07	Potatoes - seed	R (quality control)
07	Potatoes - other	A
07	Red onions	A
07	B'onions	A
07	Red Lentils (Masoor Dhal)	A
09	Chillies	A
10	Wheat and meslin	R (Prima contract)
10	Rice	R (price maintenance, food security)
11	Wheat or meslin flour	R (Prima contract)
11	Cereal groats, meals and pellets of wheat	R (Prima contract)
12	Seeds for sowing	R (quality control)
17	Molasses	R (monitoring for excise duty)
OTHER COMMODITIES		
25	Blue asbestos	R (health)
25	Arsenic sulphate	R (health)
26	Uranium ores	R (health)
27	Mineral fuels, oils and gases	R (strategic)
28	Various chemicals	A some, R some
29	Various chemicals	A some, R some
30	Various pharmaceutical products	R (health)
36	Powders and explosives	R (security)
37	Cinematographic film	A
38	Insecticides	R (health)
40	Retreaded tyres	R (quality)
48	Newsprint	Remove, partially
68	Cement blocks encasing industrial waste	R (health)
71	Gold	R (prevent 'hoarding')
84	Nuclear reactors and certain internal combustion engines	R (health security)
85	Transmission apparatus	R (security)
87	Kerosene operated tractors	A
87	Motor vehicles	A some, R some
87	Dumpers for off highway use	A
88	Balloons/dirigibles/aircraft	R (security)
90	Photo-copying apparatus	R (security)
91	Watch straps	A
93	Arms and ammunitions	R (security)

Source:
PTC February 1993

Licensing is most significant for agricultural commodities, but many of the recommendations on agricultural commodities made in the February 1993 PTC report were not accepted. In addition black gram and maize were brought under licence control in May 1993, so that as of September 1993 the agricultural commodities and foodstuffs subject to import licensing were as set out in table 3.3 below. In addition to listing the commodities, the table shows the authority recommending the issuance of the licences as at September 1993 (note that all licences are issued by the Controller of Imports and Exports).

Table 3.3:
Import licensing of agricultural commodities and foodstuffs
September 1993

HS Code	Description	Recommending Authority	Listed import duty rate (%)
0701.10	Potatoes, seed	Dept. of Agriculture	10
0701.90	Potatoes, other	CWE	50
0703.10.01	Red oinons	CWE	10
0703.10.02	B'onions	CWE	10
0713.39.01	Black gram	CWE	50
0713.40.01	Red lentils	CWE	Rs. 10 /kg
0904.20	Chillies	CWE	10
1001	Wheat and meslin	Food Commissioner	20
1005.10.01	Maize seed imported for animal feed	Ministry of Rural Ind. Devt.	10
1005.10.09	Other (maize)	CWE	50
1005.90.01	Other mazie imported for animal feed	Ministry of Rural Ind. Devt.	10
1005.90.09	Other (maize)	CWE	50
1006	Rice in the husk, husked rice and semi-milled rice	Food Commissioner	20
1006	Broken rice	CWE	20
1101.00	Wheat or meslin flour	Food Commissioner	35
1103.11	Cereal groats, meals, and pellets of wheat	Food Commissioner	35

Although table 3.3 shows the gazetted import duty rates, these may well not be applicable on these licensed commodities and the differences between the import (cif) prices and the domestic wholesale prices may well be more or less than this listed import duty. The widespread use of import waivers and licences in Sri Lanka underlines the need for direct price comparisons. In this study such direct price comparisons have been carried out for the agricultural sectors (see sections 5-10) but it has been beyond the scope of this report to do the same for the manufacturing study (see section 4).

3.2 Protectionism in Sri Lanka - Past Studies

In recent years, there have been a number of studies of protectionism in the **manufacturing** sector of Sri Lanka, but there have been few systematic studies of protectionism in the **agricultural** sector.

The nominal and effective protection coefficients estimated by the studies on the **manufacturing** sector are shown in table 3.4 below.

Table 3.4:
Average EPCs for the Manufacturing Sector in Sri Lanka
1979-1988

Year	EPC	Source
1979	1.50	PTC quoted in Wignaraja, 1992
1981	1.61	PTC quoted in Wignaraja, 1992
1983	1.56	PTC quoted in Wignaraja, 1992
1985	1.97	Walton, 1987, 47-49 quoted in Edwards 1989,3
1985	1.35	Edwards 1989, 10
1987	2.07	Walton, 1987, 47-49 quoted in Edwards 1989,3
1987	1.40	PDP Consultants, April 1990, 4 (based on 1985 input-output coefficients see PDP page 3, fn.2)
1988	1.77	PTC 1991, 57

Note: For detailed references, see the end of the report.

It can be seen that there are considerable differences between these reports in terms of their estimated average EPCs. In view of the alleged reduction in not only tariffs but also other protectionist instruments in Sri Lanka in recent years, a steady decline in the average level of effective protection (as measured by the EPCs) might have been expected. In fact the data does not reveal such a systematic decline in the level of protection. This is partly because some studies have quite clearly overstated the level of protection. This is true of the Walton 1987 study which did not take account of excise duties and therefore overstated the average level of protection in Sri Lankan manufacturing (see Edwards 1989). This overstatement was confirmed by the 1987 PDP Consultants study.

However there are severe deficiencies in the more recent PTC study. The weights from which the average EPC was calculated were derived from the sample of industries looked at and no direct price comparisons were made, so that tariff redundancies due to domestic competition and/or duty waivers were not taken into account. These shortcomings are discussed in more detail in section 4 on the manufacturing sector.

As stated, there have been few studies of protectionism in the Sri Lankan **agricultural** sector. The systematic studies which have been used for this report are those by Bhalla (published in Krueger, Schiff and Valdes, 1991) and Laursen (unpublished but carried out in 1993). Other reports comment on the price differences

for particular crops; these have been used and are referred to in the relevant sections. A study on diversification and protection is also (it seems) being carried out by Bob Hunt of the World Bank, but at the time of writing this report, this is not available. It is understood that it will be completed at the end of 1993.

In addition it seems that for some time a large study has been underway within the Agrarian Research and Training Institute (ARTI) looking at the costs and efficiency of agricultural production in Sri Lanka. One report on rice produced as part of this study has been made available (see Edirisinghe et al 1991) and has been used extensively in writing section 5 of this report. In addition, a paper (undated but seemingly published in 1991) has been used for some of the Subsidiary Food Crops in section 7 (see Sharmini et al 1991). It seems that the bulk of the ARTI study is not due to be published until early in 1994 and unfortunately none of the data collected by the ARTI for their study could be made available for this study [1].

Thus, studies on price comparisons and the international efficiency of Sri Lankan agricultural production seem to be surprisingly few.

The study by Bhalla on Sri Lanka was part of a larger, 18 country study on agricultural protectionism which was published under the general authorship of Krueger, Schiff and Valdes in 1991. Bhalla's study looked at the major forms of intervention in agricultural markets in Sri Lanka between the 1950s and 1985. The central theme of the study was that high taxation of the exported tree crop sector was used to finance subsidies to rice producers, especially from 1955 to 1977. The protection of the rice and tree crop sectors was calculated in both direct and indirect terms. The direct protection was computed by comparing the border and domestic prices while the total protection was assessed by comparing the actual relative prices and free trade relative prices. Thus Krueger et al (see the Appendix of Krueger et al 1991) made three adjustments, namely:

1. correcting agricultural prices for direct protection in the form of tariffs/subsidies;
2. correcting non-agricultural prices for tariffs/subsidies; and
3. correcting the exchange rate for overvaluation resulting from trade distortions.

Thus the first correction is for direct protection, while 2 and 3 correct for indirect protection. The total protection is the sum of these [2].

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1 The exceptions are Edirisinghe et al 1991 and Sharmini 1991).

2. However it is worth noting that in the Krueger et al volume, the total protection was calculated by taking the direct protection, adding to it the indirect protection and then adding a further term which was the direct protection multiplied by the indirect protection. There seems to be little rationale for the third (interactive) term and yet it makes a large difference to the total protection. (The help of Howard White in clarifying the Krueger et al methodology is gratefully acknowledged).

Bhalla estimated that the direct protection on the tree crops sector was negative for the whole of the 1950s to 1980s period, with the 1953-85 averages being -27% for tea, -21% for rubber and -23% for coconuts (see page 214, Krueger et al 1991), but it is worth noting that Bhalla makes these estimates on the basis that Sri Lanka is a 'small country' in the technical sense, that it is a price taker for tea, rubber and coconuts. This assumes that no part of the export duty on the tree crop sector is passed on to the foreign consumer in the form of higher prices. This may be a reasonable assumption for coconuts (because of close substitutes), and possibly even for rubber (where Sri Lanka's share of the world market is and has been small), but it is less reasonable for tea where Sri Lanka's share of the world market over the 1950s to 1980s period has averaged more than 20% and where the world price elasticity of demand has been estimated to be as little as -0.33 (see Godfrey 1985 and Lipton 1987).

However, this objection does not affect the direct protection for rice, for which Bhalla's estimates are summarised in table 3.5 below.

Table 3.5:
Rates of protection/subsidy for rice - 1950s-1980s

Years	Rate of Nominal Protection on Rice Production (%)	Rate of Subsidy on Rice Consumption (%)
1951-55	47	16
1956-60	105	20
1961-65	88	46
1966-70	64	25
1971-77	81	-14
1978-85	4	5
1951-85	60	14

Source: Krueger et al 1991, 208

For this study, the most interesting points which come from this table are:

(i) the average nominal protection to rice producers was 60% or more for all periods except 1951-55 and 1978-85;
(ii) there were large subsidies to consumers of rice in the 1960s; but that...
(iii) the end of food subsidies came not with the liberalisation of the 1980s but with the SLFP of 1971-77 since consumer prices were on average about 20% above the import prices between 1973 and 1977.

Later in this section and in section 5 of this report (the section on rice), further use is made of Bhalla's study, but here it is also worth noting the results of the Laursen study done in 1993.

The Laursen study, entitled "Sri Lanka; the Poverty Impact of Trade Liberalization", is a World Bank study which became available in September 1993 and which has provided valuable data for this study. It was based on information collected during a short visit to Sri Lanka in February 1993. Broadly the conclusions of this study are:

- on balance the 'poor' (seemingly the 24% of the population consuming less than 80% of the required calorie intake - see Laursen 1993, 1) in Sri Lanka do not gain from agricultural protectionism;
- the cost of the poor's consumption basket is something like 59% higher with protection than it would be without;
- the average consumption of major food items by the poor household in 1991 was estimated as Rs 291 a month or about Rs 3,500 a year (at wholesale prices). Therefore the 59% 'excess' represents something like Rs 1300 a year (again at wholesale prices) and this would be the gain from free trade;
- this gain would be offset to some extent by a loss on the income (production) side. The paper estimated that "less than a fifth of poor households, the poor households producing import substitutes such as rice, are likely to experience a decline in their income" (Laursen 1993, 10);[3]
- the paper concluded that "it emerges from the above considerations, contrary to what is often believed, that on balance the poor do not gain from (the) protection of agricultural commodities, even in the short run" (Laursen 1993, 10), but that "Government intervention in the market for foodstuffs is found in many countries and is based on arguments concerning welfare as well as food security. It is beyond the scope of this note to discuss these arguments but it raises the concern that the poor are paying a high price for such intervention. A country with a per capita income as low as Sri Lanka can hardly afford to let its poor pay such a price" (Laursen 1993, 10).

The Laursen paper seems to have arrived at the 59% weighted excess by looking at the major sources of calories for the poor and applying the percentage 'excess' in prices for each of these major sources for 1991. The calculations are shown below in table 3.6.

3. The paper noted that about half of the poor households get their main income directly from agriculture but it conceded that many of the other half may be 'employed' in activities closely related to farming.

Table 3.6:
The burden of protectionism on the 'calorie consumption basket' of the poor - 1991

Food item Weighted	Weight in 'Consumption Basket' of the poor - for major food items	% 'Excess' (of the domestic price over the import (CIF) price)	Weighted 'Excess' (%)
Rice	69	34	23
Wheat flour	4	51	2
Potatoes and yams	18	187	34
Coconuts	5	neg.	neg.
Sugar	4	neg.	neg.
Total	100	-	59

Source: Derived from Laursen 1993

The weighted percentage excess seems to be considerably overstated since the weight of potatoes in the whole food consumption basket of the poor is more like 2 to 3% rather than 18% (see Central Bank December 1990, table 4.37) - and even when considered within the limited group of commodities shown in table 3.6, potatoes are less than 5% of the total and certainly nothing like 18%. The commodities that are most **understated** in the above table are sugar (should be 15% within the limited group shown above) and coconuts (should be 20% within the group). Thus, with more accurate weights (with rice at 57% and flour at 4%), the weighted average is very much smaller - applying Laursen's NPCs to the commodities given, about 30% or half of the 59% given above.

The nominal protection coefficients (NPCs) obtained for the various commodities in the study by Laursen 1993, are summarised below in table 3.7.

Table 3.7:
Differences between CIF and Domestic Prices for some Agricultural Commodities and Foodstuffs - 1985-1991

NPCs	1985	1986	1987	1988	1989	1990	1991	Av. 1985-91
Rice	1.5	1.8	1.4	1.1	1.2	1.5	1.3	1.4
Wheat flour	1.2	1.4	1.4	1.1	0.8	1.3	1.5	1.2
Potatoes	2.7	2.5	1.7	2.3	1.6	2.0	2.9	2.2
Lentils	0.9	1.0	1.4	1.8	2.2	1.4	1.1	1.4
Chillies	2.1	1.3	1.3	1.7	1.5	1.2	1.6	1.5
Big Onions	1.9	2.0	2.1	2.1	1.7	2.6	2.2	2.1
Sugar	2.0	1.9	1.6	na	1.3	1.2	na	1.6
Coconuts	neg.	neg.	neg.	neg.	neg.	neg.	neg.	neg.

Source: Laursen 1993

As is implicit in the table, the Laursen paper focused only on what Bhalla referred to as direct protection, but it is a valuable source which has been used extensively in this report, modified where necessary and updated where possible. Furthermore, the scope of the Laursen paper has been somewhat extended in this report. In particular more analysis of production costs has been done. **It is hoped that in the same way as this study has built on the Laursen study, so others will build on this study.**

It is worth noting here that the average rate of import duty paid on livestock and agricultural products (HS chapter codes 01-23 inclusive) in 1992 was 19% - Rs 4.4 bn.of import duty revenue on an import value of Rs 23 bn. for the sample (see Appendix V) - but of course this is not necessarily the same as the nominal protection on all agricultural commodities consumed or produced. The reasons for this are that firstly, the weights in consumption and production are likely to be different from those in the import bill and secondly, the protection is likely to be higher than the average import duty because of the import licence system.

3.3 The Scope of This Report

It is useful to look at the effects of protectionism on consumption and production separately; this is the method of this report.

Table 3.8 shows that food and clothing consumption in Sri Lanka account for almost two-thirds of total expenditure for all income groups in Sri Lanka.

Table 3.8:
Patterns of Expenditure in Sri Lanka 1963-1981 (all income groups)

Item	Percentage of total expenditure		
	1963	1973	1981/82
Food	56	55	57
Clothing	10	8	7
Housing	7	7	6
Medical	3	2	2
Other	24	28	28
Total	**100**	**100**	**100**

Source: Central Bank of Sri Lanka 1984, 222

Clearly, any significant change in the price of food as a result of liberalisation is likely to have a major effect on the welfare of the 'average' Sri Lankan. Table 3.9 shows the breakdown of expenditure on particular food items by all income groups in Sri Lanka, for various years between 1963 and 1986.

Table 3.9:
Expenditure on Food in Sri Lanka (1963-1986)

Item	Expenditure as a % of the total on food			
	1963	1973	1981/82	1986/87
Rice	19	27	28	24
Wheat flour and other cereal	4	5	4	3
Bread and Confectionary	7	6	6	6
Meat,Fish and Eggs	16	11	11	13
Vegetables	11	8	7	7
Condiments	5	15	8	9
Coconuts and Cooking oil	9	9	8	8
Milk and Milk products	5	3	4	5
Sugar	10	7	6	7
Fruits and beverages	6	4	3	5
Other	8	5	15	13
Total	100	100	100	100

Sources: Central Bank of Sri Lanka 1984, 223 and Central Bank of Sri Lanka, December 1990, table 4. 37

In this report an analysis is made of protection on rice, wheat flour, the major 'subsidiary food crops', sugar, milk and tree crops, including coconuts. Thus this report covers protectionism on commodities which represent about 60% of total expenditure on food.

Clearly rice is the major item of food expenditure of all income groups and is even more important for the 'poorest' groups. A comparison of the composition of food expenditure for a 'poor' and a 'rich' group for 1986/87 is given in table 3.10 below.

Table 3.10:
The composition of food expenditure
for the 'poor' and the 'rich' in Sri Lanka - 1986/87

Item	Percentage of total food expenditure by income group (Rs. per month)	
	201-400	3001-5000
Rice	26.3	20.7
Flour, bread	5.7	5.6
Starchy food	2.5	2.2
Vegetables	6.2	6.7
Pulses	2.7	3.4
Sugar	6.6	6.4
Milk and milk products	3.7	6.3
Coconuts and oil	9.0	6.9
Other	37.3	41.8
Total	100.0	100.0

Source: Central Bank December 1990, table 4.37

It can be seen from the table that the poor spend (proportionately) more on rice and coconuts but significantly less on milk and milk products. Thus in terms of consumption, this report covers about 50-60% of total food expenditure and about half of all expenditure - and of course a much higher proportion of total expenditure on traded goods.

In terms of **production**, the report covers most of the manufacturing sector and over half of the total value added of the agricultural sector. Thus the report covers about 75% of the 1992 value added of these two sectors which in turn represented (in 1992) more than 35% of all the value added (or Gross Domestic Product) of Sri Lanka as is shown in table 3.11 below.

Thus, given the time available, the scope of this study has been considerable. However although the coverage is considerable, the statistical base in Sri Lanka is extremely weak and if policy-making is to be well-informed, the statistical base badly needs improvement. To facilitate further development of the data and analysis in this report, all sources are given wherever possible. The data has been given in as much detail as possible and as simply as possible. Where the source has been verbal, it has been given unless anonymity has been requested - which, given the apparently non-confidential nature of the information, has been surprisingly often.

Table 3.11:
Value Added in Sri Lankan Agriculture and Manufacturing
1982 and 1992

Sector	1982		1992	
	Rs. bn.	(%)	Rs. bn.	(%)
Agriculture				
Tea	2.4	2.5	1.8	0.5
Rubber	0.8	0.8	1.8	0.5
Coconut	3.3	3.5	9.7	2.5
Paddy	5.5	5.8	19.1	5.0
Other	8.8	9.3	46.6	12.1
Total	20.8	22.0(*)	82.5	21.5
Manufacturing				
Tea, rubber and coconut processing	2.8	3.0	7.3	1.9
Factory industry	8.8	9.3	45.0	11.7
Small industry	0.8	1.3	1.3	0.8
Other	1.2	1.3	1.3	0.3
Total	13.6	14.4	56.5	14.7
Other	60.3	63.7	245.4	63.8
Total GDP	94.7	100.0 (*)	384.4	100.0

Source: Central Bank, Annual Report 1992, table 2
Note: * Does not sum due to rounding

3.4 The Methodology of this Report

The basic objective of this study is to do a with and without analysis of protectionism in Sri Lanka. This applies to both consumption and production, but in explaining some of the problems in the analysis, it is useful to distinguish between consumption and production.

As far as **consumption** is concerned, the analysis is limited to protection on the finished good - that is on the nominal rate of protection only. For the commodities analysed here (most of which are subject to licensing) this requires a direct price comparison - a comparison of the border-price equivalent with the domestic price. To be meaningful the comparison has to be for the same commodity in terms of location, quality and time. Each of these poses problems.

(i) Location - This is not so much a problem in Sri Lanka as it is in, for example, India, because of Sri Lanka being a smaller country and transport costs from the port to the point of consumption being lower. Thus by contrast with the Indian study carried out by Pursell and Gulati 1993 which split the country into a number of regions, this has not been done for Sri Lanka in this study due to lack of time. One wholesale price has been taken for the whole country. It is unlikely that making allowances for the regionalisation of markets would have significantly altered the results for Sri Lanka .

(ii) Quality - Allowing for quality variations has been a much more serious problem. It is serious for rice, a number of the SFCs (maize, chillies and red and big onions), sugar, milk (because of fat content) and coconut oil.

(iii) Time - This is an even more serious problem than that posed by quality differences. It is a particular problem for the SFCs since the month-by-month fluctuations of their prices is considerable. Figure 3.1 below shows the seasonal regional price indices for rice, dried chillies, red onions, and potatoes, as calculated by Bogahawatta (1987, table 1). It seems that the annual wholesale prices for commodities quoted in Sri Lanka are simple averages of monthly prices, whereas in fact it is likely that the consumption of vegetables will be much higher when the price is lower. Thus, a weighted average of the price to consumers is likely to be lower than the (simple) average monthly price. This does not matter if the border price moves in tandem with the domestic price so that the differential is more or less constant and if a simple average of the border price is taken; unfortunately these conditions are not known but are thought unlikely to apply.

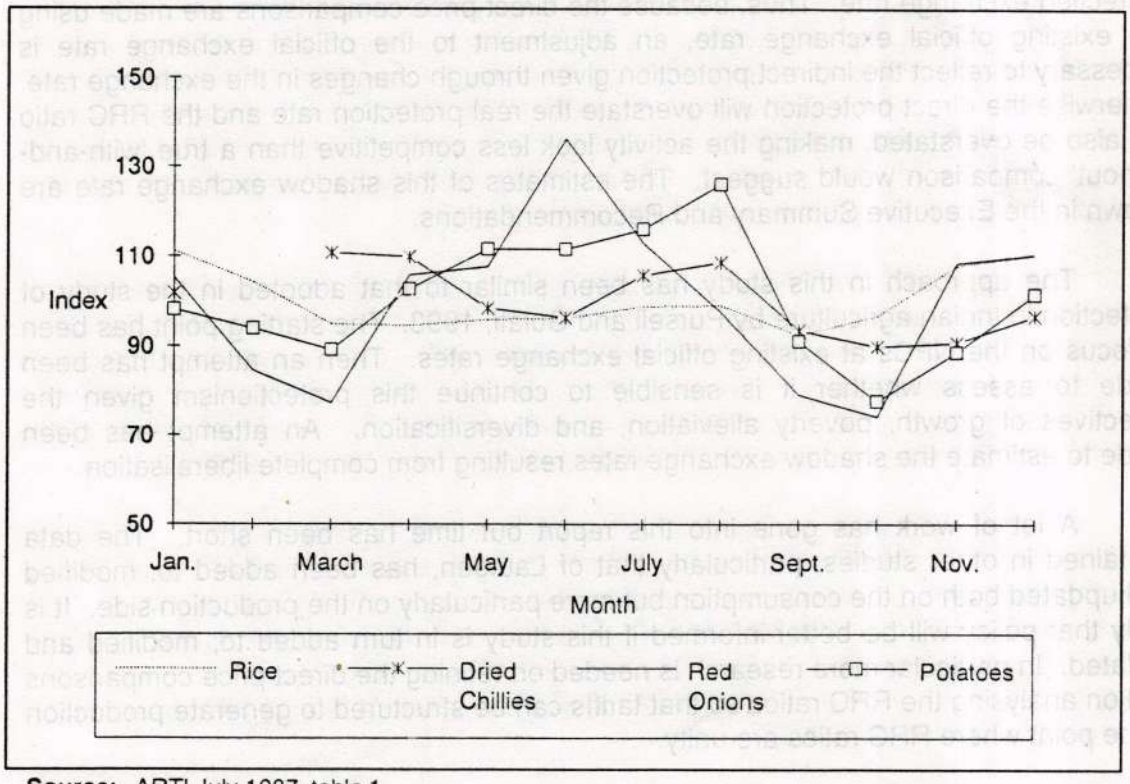
Thus the major problems in making the price comparisons for consumption are those related to quality and time (or seasonality). One issue which is **not** a problem in Sri Lanka is a possible variation in the border price with the quantity **consumed**, whereas for India the Pursell and Gulati study took this as a possible problem for some commodities (such as edible oils - see Pursell and Gulati 1993, 12).

From the **production** side, the analysis of protection focuses on the incentive and resource allocation effects. The incentive effect can be measured by looking at the Effective Protection Coefficient (EPC). The resource allocation effect can be examined by analysing the domestic resource cost of producing the foreign exchange saving. This is usually referred to as the DRC ratio. The domestic resources can be measured at market prices or at shadow prices (that is in terms of opportunity costs). If the domestic costs are valued at shadow prices, then it is sensible to refer to the adjusted ratio as the real resource cost (RRC) ratio.

For many agricultural commodities, the EPCs are very close to the NPCs since the traded inputs are often quite small. This contrasts with the position in the manufacturing sector where the differences between the NPCs and EPCs are often considerable.

For this study an attempt has been made to estimate the DRC and RRC (real resource cost) ratios for the manufacturing and agricultural sectors, but the data on costs of production for some crops have not been sufficiently consistent to estimate the DRCs and RRCs. Nevertheless where it has been possible to estimate the DRCs and RRCs, they have served as a guide to tariff policy.

Figure 3.1:
Seasonal Retail Price Indices for Selected Commodities in Sri Lanka



Source: ARTI July 1987, table 1
Note: No figure for chillies for February

For Sri Lanka, it seems particularly important to apply a shadow wage which makes allowances for the opportunity cost of labour, since Sri Lanka is a labour surplus economy. All surveys since the 1960s have shown unemployment in Sri Lanka to be above 10% of the labour force (see Korale 1992, 30) and underemployment is extensive. The Government of Sri Lanka's study on shadow prices in 1991 recommended the use of 0.72 as the shadow price of surplus labour.

On the production side, there are similar problems to consumption as far as NPCs are concerned - location, quality and timing or seasonality. As far as the latter is concerned, the domestic prices should again be calculated on a weighted average basis but, in this case, with the month-by-month weights being based on production.

For the commodities looked at here, there is no need to analyse the effect on the world price of increased production. Sri Lanka can be treated, in a technical sense, as a 'small country' or price taker. The probable exception to this is tea. Some proportion of the export duties on tea is likely to be passed on to foreign consumers. However since, at the end of 1992, export duties were more or less abolished in Sri Lanka, this complication disappears when assessing the average levels of nominal and effective protection .

For both the consumption and production effects, an adjustment needs to be made for **indirect protection**. In moving towards the liberalisation of trade, it is reasonable to assume that the exchange rate would change as a result of the trade liberalisation. The with-protection exchange rate will be different from the without-protection exchange rate. Thus, because the direct price comparisons are made using the existing official exchange rate, an adjustment to the official exchange rate is necessary to reflect the indirect protection given through changes in the exchange rate. Otherwise the direct protection will overstate the real protection rate and the RRC ratio will also be overstated, making the activity look less competitive than a true 'with-and-without' comparison would suggest. The estimates of this shadow exchange rate are shown in the Executive Summary and Recommendations.

The approach in this study has been similar to that adopted in the study of protection in Indian agriculture by Pursell and Gulati, 1993. The starting point has been to focus on the NPCs at existing official exchange rates. Then an attempt has been made to assess whether it is sensible to continue this protectionism given the objectives of growth, poverty alleviation, and diversification. An attempt has been made to estimate the shadow exchange rates resulting from complete liberalisation.

A lot of work has gone into this report but time has been short. The data contained in other studies, particularly that of Laursen, has been added to, modified and updated both on the consumption but more particularly on the production side. It is likely that policy will be better-informed if this study is in turn added to, modified and updated. In particular more research is needed on refining the direct price comparisons and on analysing the RRC ratios so that tariffs can be structured to generate production to the point where RRC ratios are unity.

The layout of the report is as follows. The next section looks at the manufacturing sector. Section 5 looks at rice and section 6 at the closely-related wheat

flour sector. Section 7 looks at the major subsidiary food crops, excluding sugar which is covered in section 8 and milk which is covered in section 9. Finally section 10 looks (briefly) at the tree crop sector and particularly at coconuts. The 'Executive Summary and Recommendations' has provided a brief summary of each section, a synthesis of the study, and made recommendations on policies.

4. Manufacturing sector

4.1 How to and why measure protectionism

As stated above an important measure of protection in the manufacturing sector is the effective rate of protection (ERP). It is a particularly important concept in the manufacturing sector (as compared with the agricultural sector) because the ratio of traded inputs to gross outputs in the manufacturing sector is usually greater than in agriculture. Thus the ERP is useful in that it emphasises the structure of protection.

The effective rate of protection is usually defined as the difference between the value added at domestic prices (vadp) and the value added at world prices (vawp) expressed as a percentage of the value added at world prices.

Thus ERP(%) = (vadp - vawp)/vawp

Sometimes, instead of the ERP, the Effective Protection Coefficient (EPC) is used. The EPC is defined as:

EPC = vadp/vawp

... that is EPC = ERP + 1

The EPC is used in this report in preference to the ERP since the latter does not clearly distinguish between cases of gross inefficiency, and heavy distortions in the protective structure against a particular industry which operates efficiently. In both cases the ERP will be negative, whereas the EPC will be negative only in the case of gross inefficiency and positive (but between 0 and 1) in the case where there is a disincentive to production. The reasoning is as follows.

A grossly inefficient industry has a negative value added at world prices i.e. where the border price of its inputs exceeds the border price of its output. Both ERP and EPC as apparent from the definitions given above, are negative.

Suppose, on the other hand, that value added at world prices is positive, but that the structure of protection - by heavy protection on important inputs - is such that value added at domestic prices is less than value added at world prices (Vadp < Vawp). From the above definitions it is clear that ERP is still negative whereas the EPC is positive. Moreover, the EPC will be less than one - showing that protection discriminates against the industry in question. Because of this advantage and also because the EPC has been used as a measure of protection in past studies of the Sri Lankan manufacturing sector, the EPC has been used in this report as the measure of effective protection.

In addition to measuring the incentive effects of the protectionist structure, policy makers find it useful to measure the efficiency effects. This is usually done by using the domestic resource cost (DRC) ratio. This is the ratio of domestic resources used in each industry to produce the foreign exchange saving (the value added in world prices).

The DRC ratio can be re-expressed in terms of a real resource cost (RRC) ratio by attaching shadow prices to the costs and to foreign exchange to reflect the opportunity cost of those resources and exchange earnings.

For policy purposes, the DRC and RRC ratios are more useful than the EPC because, as will be evident later in this section (and in the sections on agriculture), they give some indication of the international competitiveness and efficiency of the production activity being considered. As a result, they are especially useful in the formulation of trade policy as will be evident in section 4.4.

4.2 Past studies of effective protection in Sri Lankan manufacturing

The results of past studies

There have been a number of studies of protectionism carried out on the Sri Lankan manufacturing sector in recent years. The EPCs estimated by these studies were summarised in table 3.4 and are repeated in table 4.1 below:

Table 4.1:
Average EPCs for the Manufacturing Sector in Sri Lanka

Year	EPC	Source
1979	1.50	PTC quoted in Wignaraja, 1992
1981	1.61	PTC quoted in Wignaraja, 1992
1983	1.56	PTC quoted in Wignaraja, 1992
1985	1.97	Walton, 1987, 47-89 quoted in Edwards 1989, 3
1985	1.35	Edwards 1989, 10
1987	2.07	Walton, 1987, 47-49 quoted in Edwards 1989, 3
1987	1.40	PDP Consultants, April 1990, 4 (based on 1985 input-output coefficients - see PDP page 3 fn 2)
1988	1.77	PTC 1991, 57

Note: for full references, refer to the end of the report [1]

It can be seen that there are considerable differences between these EPCs. In view of the alleged reduction in not only tariffs but also other protectionist instruments in Sri Lanka in recent years, a steady decline in the average level of effective protection (as measured by the EPCs) might have been expected. In fact the data does not reveal such a systematic decline in the level of protection. This is partly because some studies have quite clearly overstated the level of protection. This is true of the Walton 1987 study which did not take account of excise duties, which at the time of his study were levied only on production and not imports. As a result, Walton's study overstated the average level of protection in Sri Lankan manufacturing (see Edwards 1989, 10).

1. There are more recent references to effective protection in Sri Lankan manufacturing (see Cuthbertson et al 1992 and Maxwell Stamp 1993) but the Cuthbertson study used the data in the 1991 PTC report (see Cuthbertson et al 1992, 6) and the detailed calculations were not given in the Maxwell Stamp report. It was not possible for this study to obtain access to the Annexes to the Maxwell Stamp report. The annexes contain detailed reports on 56 companies but these reports are treated as highly confidential by the Government of Sri Lanka.

The 1985 Walton report was later revised by the PDP Consultants' study and the average EPC was revised downwards.

For 1987 the EPC in the manufacturing sector was estimated to be 1.40 but by the following year (1988) the PTC report (published in 1991) suggested that the average EPC had risen to 1.77. Thus there is considerable variation in the estimates of the EPCs over time. Does this mean that the EPC has actually been fluctuating in this way or is it more a reflection of the quality of the data used? Regrettably, it seems likely to be largely the latter - that is, most of the variations are explained largely by variations in data coverage from study to study. However, if a comparison is made of the PTC and the earlier PDP report, all the EPCs estimated by the PTC report for 1988 at the two-digit ISIC level were higher than the EPCs estimated by PDP consultants for 1987, with the exception of ISIC 34 (see table 4.2).

Table 4.2:
EPCs Estimated for 1988 by PTC 1991 Compared with EPCs Estimated by PDP Consultants for 1987

Sub-sector	EPC (1988)	EPC (1987)
31 Food, beverages and tobacco	1.62	1.39
32 Textiles and clothing	2.27	1.88
33 Wood and wood products	1.87	1.21
34 Paper and paper products	2.82	6.47
35 Chemicals	1.64	1.27
36 NMMPs	1.76	1.39
37 Basic metal industries	2.21	1.14
38 Fabricated metal products	2.29	1.70
39 Other	2.22	0.95
All industries	1.77	1.38

Sources:
1988 - PTC 1991, 54-57
1987 - PDP Consultants, 1990, 13

The PTC report did not explain the differences so one cannot be sure whether they are due to changes in the tariffs, changes in the composition of output within each 2-digit ISIC category or errors in the estimates for 1987 or 1988 - or a mixture of all these. In terms of presentation, the PTC report left a lot to be desired.

Unfortunately, when the terms of reference for this study were modified to place the emphasis on the agricultural sector, it was clear that a questionnaire survey of the manufacturing sector would not be possible and that past reports would have to be relied upon to derive the input-output coefficients. It was decided to use the input-output coefficients implied by the PTC and PDP studies and to estimate the EPCs for each industry on the basis of these input-output coefficients. Thus the research assistants at the PTC were asked to calculate these input-output coefficients from the PDP and PTC studies.

This has proved to be extremely time-consuming in respect of the 1991 PTC report and impossible for the PDP study. The information available on file at the PTC

office proved to be insufficient to reconstruct the PDP data so that reliance has had to be placed on the 1991 PTC report. Even here, there were considerable problems since the data held on computer files at the PTC did not always match the data in the PTC report. Nor did the data held on computer files always match the data collected from the company questionnaires. Since, in this report, a heavy reliance has been placed on the data collected for the PTC report, it is necessary to explain the characteristics of the PTC data and the problems experienced with that study.

The 1991 PTC study - data characteristics and deficiencies

The PTC report was deficient in a number of important respects, with some of the deficiencies only becoming apparent on closer investigation.

The PTC report was presented in November 1991. It attempted to estimate the EPCD - Effective Protection Coefficient Domestic (see PTC 1991, 34) - that is the EPC for sales in the domestic market only (i.e. excluding exports). The EPCDs were given separately for public and private sector enterprises in each manufacturing sub-sector with the average EPCD being lower for the public sector (see PTC 1991, pages 37 and 39). The EPCDs were given for the whole manufacturing sector on page 40 of PTC 1991. For the whole of the manufacturing sector, the Nominal Protection Coefficient Domestic (NPCD) on output was given as 1.44, the protection coefficient on inputs as 1.34 and the average EPCD as 1.77 (PTC 1991, 40). These protection coefficients (for outputs, inputs and value added) were given for 4 digit sub-sectors on pages 54 to 57 of the PTC report and NSEs were given at the two-digit level on page 59.

The PTC Report gave figures for gross output at domestic prices for each of the sub-sectors covered by the survey (see page 30). The data used in PTC 1991 were derived from a survey of manufacturing industry carried out by the PTC and covering 1988 (see PTC 1991, 29). The value of gross output of the 1430 firms in the survey totalled Rs 38.7 bn. and was stated to be about 72% of the total gross output of the manufacturing sector (PTC 1991, 29). The EPCs were derived from 451 firms accounting for 78% of that survey output, or 78% x 72% = 56% of the total output of the manufacturing sector (see PTC 1991, 29). One problem with the study is that the EPCs were estimated from the sample of companies analysed and not in accordance with the value added in the industrial sector as a whole. A major industry (flour milling) was not looked at at all and thus a question that arises is: how representative is the PTC sample? Later in this section, an attempt is made to answer this question by weighting the industry EPCs in the PTC report by the value added by each industry in Sri Lanka in 1990. In fact a similar overall average EPC is derived by the PTC report from the weighted figures as was estimated from the sample figures.

In spite of the PTC report being 187 pages long, it did not give the detailed input-output coefficients which provided the basis of the EPC calculations. The input-output coefficients had to be derived from the computer file and this proved to be a surprisingly difficult task for the research assistants at the PTC. The reason for this seemed to be that some changes had been made between the compilation of the computer file and the production of the final report.

However after much effort, the research assistants did manage to reconstruct the data which was the basis of the PTC report. This task was essential in order to derive the input-output coefficients for each industry.

However, there is a major problem in deriving the input-output coefficients in this way, namely that if the PTC data is wrong then the data in this report will be wrong. And, unfortunately, the data in the PTC report has to be treated with suspicion. One problem already mentioned above is that the report was based on a sample which was not the same for each industry. A second (and potentially more serious) problem is that the PTC study did not carry out any direct price comparisons in estimating the NPCs for each output and input. The NPCs seemed in every case to be based on the percentage ad valorem tariffs (or the tariff equivalent where the tariff was specific) which means that in so far as the tariff was not fully utilised,[2] the NPC will be overstated. This has serious implications for the 1993 estimates in this study because the input-output coefficients at world prices used for estimating the 1993 EPCDs were derived from the 1991 PTC report. They were derived by deflating the input-output coefficients at domestic prices and in so far as the NPCs are wrong then so will the input-output coefficients at world prices.

Thus the method used here is:

- to start with the input-output coefficients (IOCs) at domestic prices for 1988 collected by the PTC report;
- to derive the IOCs at world prices by deflating the IOCs at domestic prices by the 1988 NPCs;
- to check that the EPCs derived for the 4-digit industries match those in the PTC report;
- to apply the NPCs for 1993 to the IOCs at world prices derived from the PTC report to calculate the 1993 IOCs at domestic prices;
- to derive the EPCDs for 1993 by comparing the value added at domestic prices with the value added at world prices.

Thus, for this study heavy reliance has been placed on the data derived for the PTC study and the limitations of the PTC data should be borne in mind when reading this section and when interpreting the EPC estimates done by this study for 1993.

The purposes of the analysis in this section are:

(i) to estimate the present (1993) levels of Effective Protection and to compare them with the levels in 1988;
(ii) to explore the effects of changes in the structure of protection;
(iii) to make recommendations about tariff policy.

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2. For fairly obvious reasons, this problem (where the tariff is not fully utilised) is known as 'tariff redundancy'. The opposite problem (where the tariff is 'swamped' and where the difference between the domestic price and the world price is greater than the ad valorem tariff) may occur where there are quantitative restrictions but such restrictions have been rare in recent years in the Sri Lankan manufacturing sector.

Objectives (ii) and (iii) have been difficult to achieve because of the poor quality of the data, but the main issues are discussed in section 4.4. Before that, in section 4.3, the EPCDs for 1993 are estimated.

4.3 Protection and efficiency in the manufacturing sector of Sri Lanka - EPC estimates for 1993

The choice of industries and weights

In estimating effective protection coefficients for the manufacturing sector, data were needed on the industry-by-industry value added in order to:

(i) decide on which industries to select for estimates of effective protection. It is not worthwhile calculating EPCs for very small industries, so some method was needed to select the 'major' industries; and,

(ii) provide a means of weighting the industry-by-industry estimates to obtain a weighted average of EPCs for the industrial sector as a whole.

Unfortunately, the statistical base of the manufacturing sector in Sri Lanka is extremely shaky. This is true even if attention is restricted to what the Central Bank of Sri Lanka calls the 'factory industry' sector. From the figures published in the Central Bank's Annual Report for 1992 (see CBoSL AR 1992, table 2), the 'factory industry' sub-sector accounted for 80% of the value added in the manufacturing sector in 1992. A further 13% was accounted for by the processing of tea, rubber and coconuts which are looked at briefly in section 10 of this report. This report does not look at trade policies and protectionism affecting the 'small and other industries' which, in 1992, accounted for the remaining 7% of value added in the manufacturing sector. But, by covering the 'factory industry' and the processing (of tea, rubber and coconuts) sub-sectors, this report covers over 90% by value added of, what the Central Bank defines as the 'manufacturing sector'.

However even if attention is restricted to the 'factory industry' sector, there are major differences in gross output and value added between the statistics of the Central Bank (as revealed by the Annual Report) and those of the Department of Census and Statistics (as revealed by the Annual Survey of Industries).[3] In its published data, the Central Bank gives gross output broken down by 2-digit ISIC but value added is given only for all 'factory industry'. However, information was obtained from the Central Bank on the 2-digit breakdown and table 4.3 below shows the Central Bank's breakdown of value added by the 2 digit sub-sector for 1990 alongside the data given for 1990 by the ASI.

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3. In addition to the industrial data collected by the Central Bank and the Department of Census and Statistics, data is also collected by the Industrial Economics Division of the Ministry of Industries. In September 1993 this was based on data from 148 firms but at the time of writing (November 1993) is due to be expanded to about 500 firms. This collects gross output at the 3-digit level (see Ministry of Industries 1993)

Table 4.3:
Gross output and value added in the manufacturing sector of Sri Lanka for 1988 - a comparison of data from the Central Bank and the ASI

	1990 (Rs. bn.)			
	Gross output		Value added	
	CBoSL	ASI	CBoSL	ASI
31 Food, beverages and tobacco	22.0	34.1	12.1	17.8
32 Textiles, wearing apparel and leather products	27.9	23.4	7.2	11.0
33 Wood and wood products	0.7	0.5	0.5	0.3
34 Paper and paper products	1.9	2.5	1.0	1.3
35 Chemicals, petroleum, coal, rubber and plastic products	21.2	22.6	2.4	7.8
36 NMMP (exc. petroleum and coal)	7.6	4.6	4.7	1.6
37 Basic metal products	1.0	1.3	0.2	0.4
38 Fabricated metal products, machinery and transport equipment	4.2	5.2	2.7	2.1
39 Other manufactured products (NES)	0.3	3.3	0.1	0.4
Total (*)	66.6(*)	97.5	30.9	42.5(*)

(*) Does not sum due to rounding
ASI = Annual Survey of Industries 1991 (note that the 1991 Survey year relates to 1990 data)
CBoSL; data obtained directly from the Central Bank

It is clear from the above table that the ASI figures (for both gross output and value added) are very much higher for the food, beverages and tobacco sub-sector, and very much lower (for gross output) for the textiles and garments sub-sector. The ASI figures include, within ISIC 3121, all coconut products and all tea (including bulk tea). By contrast, the Central Bank's figures for the garments industry are very much larger than those of the Department of Census and Statistics (DCS) because, it seems, their coverage is more complete. There are also very large differences for ISIC sectors 35, 38 and 39. Within ISIC 35, the DCS includes the processing of rubber into sheet form whereas the Central Bank includes this separately under 'rubber processing'.

The net result of all this is that it is difficult to derive the weights which are needed for this study. These weights are needed for two reasons - firstly, to select the major industries for estimating the EPCs, and secondly, to provide weights for estimating the weighted average EPCDs. Here reliance has had to be placed on the Annual Survey of Industries data since data at the 4-digit level was not available from the Central Bank. Thus an 'industry' has been defined at the 4-digit level and the size of an industry is taken to be indicated by its value added at domestic prices. The latest available figures from the Annual Survey of Industries are those relating to 1990. The data collected by the staff at the Presidential Tariff Commission from the DCS are shown in table 4.4. The table lists the gross output figures for the 37 'industries' studied in this report.

EPCDs have not been calculated for 4 'major industries', namely ISICs 3420, 3821, 3901 and 3903. An EPCD makes little sense for industry 3420 (printing and publishing) which for the most part is likely to be producing non-traded goods, and

information was not available for 3821 (Engines and Turbines), 3901 (Jewellery) and 3903 (Sporting and Athletic Goods).

Table 4.4:
Major Industries in Manufacturing - 1990
(Compiled by staff of the Presidential Tariff Commission from data supplied by the Department of Census and Statistics)

ISIC	Industry Description	Gross output (Rs.bn)
3112	Dairy products	2.4
3115	Vegetable, animal oils and fats	0.8
3116	Grain mill products	8.5
3117	Bakery products	1.6
3118	Sugar factories and refineries	1.5
3119	Cocoa, chocolate and confectionery	0.3
3121	Food products	11.0
3131	Distilling, rectifying spirits	4.1
3133	Malt liquors and malt	0.3
3134	Soft drinks and carbonated waters	0.8
3140	Tobacco manufactures	7.2
3211	Spinning,weaving and finishing	4.9
3212	Made-up textile goods	0.1
3213	Knitting mills	2.5
3220	Wearing apparel	15.3
3240	Footwear (except rubber and plastic)	1.5
3311	Sawmills and woodmills	0.6
3411	Pulp, paper and paperboard	1.0
3412	Containers, boxes and paper board	0.2
3511	Basic industrial chemicals	0.2
3512	Fertilizers and pesticides	0.4
3523	Soap, perfumes and other toiletries	2.1
3530	Petroleum refineries	16.0
3551	Tyre and tube industries	2.3
3559	Rubber products NEC	1.4
3560	Plastic products NEC	0.9
3610	Pottery, china and earthenware	1.2
3620	Glass and glass products	0.3
3691	Structural clay products	0.6
3692	Cement, lime and plaster	1.0
3699	NMMP NEC	1.8
3710	Iron and steel basic industries	1.0
3720	Non-ferrous metal industries	0.4
3819	Fabricated metal products	1.6
3831	Electrical industrial machinery	0.2
3839	Electrical apparatus/supplies NEC	0.4
3841	Ship building and repairing	1.4
	Sub-total	97.8
	Others	1.9
	Total for classification 3	99.7

Thus, in this report, EPCs have been estimated for 37 industries covering, it is estimated, at least 90% of total value added at domestic prices for the manufacturing sector as defined by the DCS.

Thus, to summarise, EPCs have been estimated for 37 industries which accounted (on the basis of the ASI data, as analysed by the PTC staff) for most of total value added by 'factory industry' in 1990. Having selected the industries to be analysed and used for providing weights for deriving the average EPCs, the next stage was to derive the input-output coefficients at world prices.

Estimating the 1993 EPCs - deriving the input-output coefficients at world prices

As stated earlier, this study had neither the time nor the resources to do a questionnaire survey of the manufacturing sector in Sri Lanka. Instead the input-output coefficients (IOCs) at world prices were derived for 1988 from the 1991 PTC study. This was done by deflating the domestic input-output coefficients by the nominal protection coefficients for each industry.[4]

Table 4.5:
Input-Output Coefficients, NPCs and EPC
1988 Data for 1991 PTC Report
3115 Vegetable, Animal Oils, and Fats

	IOCs at Domestic Prices (Rs.mn.)	NPCs and EPC	IOCs at World Prices (Rs.mn.)
GROSS OUTPUTS	427		
	%		%
- Margarine	88	1.35	65
- Coconut Oil	12	1.55	8
Total gross output	100	1.37	73
INPUTS:			
- Coconut Oil	65	1.55	42
- Copra	1	1.55	1
- Other	1	1.10	1
Traded components of:			
- Electricity/water	0	1.15	0
- Fuel	1	1.00	1
- Other	2	1.17	2
Total traded inputs	70	1.52	46
'VALUE ADDED':	30	1.12	27
- Labour	4		
- Depreciation	2		
- Other	24		

4. As stated earlier in this section, it had been hoped to use both the PDP and PTC reports to derive the input-output coefficients at world prices but the research assistants could not reconcile the available PDP data with the EPCDs given in the PDP report. Furthermore the coverage within each 4 digit industry varied between the PDP and PTC reports.

Table 4.5 provides an example of how the IOCs at world prices were derived. The example shown is for ISIC 3115 - vegetable, animal oils and fats.

The IOCs at domestic prices were those collected from the questionnaires by the PTC study. Here it is important to note that, for each industry, the inputs of electricity and water and other non-traded inputs were split into traded and non-traded elements. Of the total electricity and water inputs, 13.6% was taken as being traded, with the rest being taken as non-traded. Thus the IOC at domestic prices shown for electricity and water in table 4.5 is not the total cost of electricity and water used in industry ISIC 3115 but 13.6% of the total cost. Similarly, only a proportion (52.4%) of other non-traded inputs were treated as traded. All fuel inputs were treated as traded.

The centre column of figures in the table shows the NPCs for each output and input. The NPC (for the traded component) of the electricity and water input was estimated as 1.15[5] in the PTC report while that for the traded component of other non-traded inputs was taken as 1.17. From these NPCs in the centre column and from the IOCs at domestic prices in the first column, the IOCs at world prices have been derived in the last column.[6]

Estimating the 1993 EPCs - applying the NPCs for 1993 to the 1988 IOCs at world prices

It is these IOCs at world prices which have been multiplied by the NPCs for 1993 to estimate the IOCs at domestic prices for 1993 (see the example of ISIC 3115 in table 4.6 below).[7] In general, the NPCs have been derived from the listed or gazetted tariff rates. There are two problems which arise from the use of the gazetted duties. One is that the duties listed are not those which are necessarily applicable. As noted in Appendix V, there are many partial or complete waivers given on the duties. Secondly, even where the duty as listed is applicable, it may not be fully utilised. Again, as noted above, the price in the domestic market may not be the same as the world price plus the duty because of domestic competition (and note that tariff 'redundancy' can occur even under conditions of monopoly pricing). As noted above, no direct price comparisons were done by the PTC study. It is then hardly surprising that, in this study, there has not been adequate time to carry out a fresh industrial survey nor to make direct price comparisons. On the other hand, many direct price comparisons have been carried out for the agricultural studies - see later sections.

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5. From the report done on shadow pricing for the Government of Sri Lanka in 1991, it would seem that the domestic price of electricity was well below its 'foreign exchange cost'. The report suggested that the foreign exchange cost in 1988 was 57% above the domestic price (see Government of Sri Lanka 1991, 59) so that the NPC should have been taken as 1/1.57 = 0.64 (see Appendix vi) whereas, as pointed out, the PTC report took the NPC on the traded component of electricity and water as 1.15.

6. The tables showing the IOCs for 1988 for all the industries studied in this report are with the staff at the Presidential Tariff Commission.

7. The tables showing the input-output coefficients for 1993 and the NPCs for 1993 for all the industries studied in this report can also be obtained from the staff at the Presidential Tariff Commission.

Table 4.6:
NPCs and EPC for 1993
Using 1988 Input-Output Coefficients
3115 Vegetable, Animal Oils & Fats

	IOCs at Domestic Prices	NPCs and EPC	IOCs at World Prices
GROSS OUTPUTS			
	%		%
- Margarine	88	1.35	65
- Coconut oil	12	1.55	8
Total gross outputs	100	1.37	73
INPUTS			
- Coconut oil	65	1.55	42
- Copra	2	1.55	1
- Other	1	1.10	1
Traded components of:			
- Electricity/water	0	1.00	0
- Fuel	1	1.20	1
- Other	2	1.20	2
Total traded inputs	71	1.54	46
'Value added'	29	1.07	27
- Labour	4		
- Depreciation	2		
- Other	23		

The IOCs at world prices in table 4.6 are those derived from the data for 1988 (as in table 4.5). Because of the sharp rise in the price of electricity in July 1993 the NPC on the traded component of electricty and water is assumed to be 1.0. The NPC on fuel is assumed to be 1.2 and the NPC on the traded component of other 'non-traded inputs' is assumed to be 1.2 (in 1988, for the economy as a whole, domestic prices were 27% above world prices - see GofSL 1991, Summary - but since then this difference has probably decreased).

The other NPCs entered in table 4.6 are generally the NPCs implied by the import duties as gazetted. The IOCs at domestic prices are derived by multiplying the IOCs at world prices by these NPCs and the EPC estimated from the value added coefficients. Once again it is worth noting that it is the IOCs at world prices which have to be derived in order to recalculate the EPCs for 1993, since the IOCs at domestic prices are themselves changed by the nominal protection. **However in doing so, it has to be assumed that the NPCs in the 1991 PTC Report are accurate. If they are not, then the IOCs at world prices which are derived will be inaccurate.**

Thus the EPC figures given in this report, like those given in the PDP and PTC reports, can, at best, be considered as indicative. The methodology is useful and the

IOCs and EPCDs given provide some indications of the situation, **but a fresh industrial survey with direct price comparisons is required if policy is to be well-informed. The following section 4.4 discusses the policy issues on protection in the manufacturing sector.**

4.4 An assessment of protectionism in the Sri Lankan manufacturing sector and related policy issues.

Protection in 1993 - comparisons with 1988

Table 4.7 compares the NPCs and EPCs for each of the 37 industries (4-digit ISIC) for 1988 (as given in the PTC report) and for 1993 (as estimated here).

All of the figures derived for the 37 industries agreed with the data on pages 54-57 of the 1991 PTC report with the one (small) exception of ISIC 3691 where the average NPC applicable to the output seems to have been 1.7 and not the 1.5 shown in the 1991 PTC report.

Table 4.7 suggests that the EPCDs have risen for some industries and fallen for others over the five years between 1988 and 1993. What is the change (if any) in the weighted average? This is shown in table 4.8 which estimates the average EPCDs using the 1990 domestic sales weights derived from the 1990 gross output figures of the Annual Survey of Industries. Export figures are estimated using the 1990 External Trade Statistics.

Table 4.8 shows that there has been a reduction in the average EPCD for 1993 compared with 1988. The average EPCD is 1.6 (excluding flour milling since this was not covered in the 1991 PTC study) compared with 1.8 in 1988. If flour milling is included, then the weighted average EPCD is 1.7.

Thus, there seems to have been a slight reduction in the average level of the EPC over the past five years. This has coincided with a considerable simplification in the tariff structure. Formally (that is if the import duty waivers are ignored), the present structure of protection consists of a four-band system.[8] The adoption of a 4-band structure was announced in the 1988 Budget as 5%, 15%, 30% and 50% (PTC 1991, 5).

8. A history of the earlier tariff structure in Sri Lanka (from 1948 onwards) is given in PTC 1991, 1-6

Table 4.7:
Protection in the Manufacturing Sector - Sri Lanka
(A Comparison of 1988 and 1993)

ISIC	Industry	1988 PTC Data			1993 Estimates		
		NPCs		EPC	NPCs		EPC
		Output	Inputs		Output	Inputs	
3112	Dairy products	1.5	1.5	1.9	1.6	1.2	2.4
3115	Oils and fats	1.4	1.5	1.2	1.4	1.5	1.1
3116	Flour	na	na	na	1.3	1.1	1.9
3117	Biscuits etc	1.6	1.4	2.0	1.6	1.4	2.0
3118	Sugar	1.6	1.5	2.7	1.4	1.2	2.1
3119	Chocolate etc	1.6	1.5	1.8	1.6	1.3	2.0
3121	Coffee,tea bags	1.5	1.3	2.3	1.4	1.3	1.7
3131	Distilling	1.3	1.2	1.5	1.3	1.1	1.5
3133	Beer	1.4	1.2	1.6	1.4	1.2	1.6
3134	Soft drinks	1.6	1.4	1.7	1.6	1.3	1.8
3140	Cigarettes	1.5	1.4	1.5	1.6	1.4	1.6
3211	Spinning,weaving	1.4	1.1	2.4	1.9	1.2	3.9
3212	Towels etc	1.6	1.2	3.2	1.7	1.2	4.3
3213	Sweaters,socks	1.6	1.3	2.5	1.6	1.2	1.9
3220	Garments	1.6	1.4	2.4	1.6	1.7	1.1
3240	Footwear	1.6	1.4	1.9	1.6	1.4	1.6
3311	Sawmills	1.4	1.1	1.8	1.5	1.2	1.9
3411	Pulp, paper, etc	1.5	1.2	2.8	1.4	1.1	1.7
3412	Cartons, boxes	1.6	1.1	3.0	1.6	1.2	3.3
3511	Ind. chemicals	1.1	1.3	0.8	1.1	1.1	1.1
3512	Fertilisers etc.	1.1	1.1	0.9	1.1	1.1	1.0
3523	Soap, etc	1.5	1.3	2.4	1.6	1.3	2.4
3530	Petrol, etc	1.3	1.5	1.3	1.3	1.3	1.3
3551	Tyres and tubes	1.6	1.3	2.3	1.6	1.2	2.3
3559	Rubber prods. NEC	1.5	1.4	2.3	1.6	1.3	2.0
3560	Plastic products	1.5	1.2	2.7	1.6	1.1	2.8
3610	Pottery, china	1.5	1.2	3.0	1.6	1.2	2.6
3620	Glass	1.4	1.1	1.8	1.6	1.2	1.5
3691	Bricks tiles etc	1.5	1.2	2.8*	1.6	1.2	2.2
3692	Cement	1.1	1.2	1.1	1.2	1.1	1.4
3699	NMMPs NEC	1.4	1.3	1.5	1.2	1.1	1.3
3710	I/S products	1.4	1.1	1.6	1.2	1.1	1.4
3720	Aluminium foil	1.6	1.1	3.9	1.6	1.1	4.4
3819	Welded mesh etc	1.5	1.1	2.7	1.5	1.1	2.8
3831	Electrical industry	1.6	1.1	2.1	1.6	1.1	2.1
3839	Batteries, cables	1.6	1.2	2.6	1.6	1.2	2.6
3841	Boat buildiNEC	1.4	1.1	1.7	1.4	1.1	1.8

* See text for comments on ISIC 3691

Sources: 1988 PTC data - simulated for this study and agreed with PTC, 1991, 54-57
1993 estimates done for this study by the PTC staff based on IOCs at world prices derived from PTC data for 1988 (see text)

Table 4.8:
Protection in the manufacturing sector - Sri Lanka - 1988 and 1993
(All figures are in Rs. bn. unless otherwise stated)

(1)	[2]	[3]	[4]	(5)	[6]	[7]	[8]	(9)	[10]	[11]	[12]
Industry	Gross Output (1990)	Exports (1990)	Dom-estic Sales (1990)	Value Add-ed as % of GO at dp in 1988	1988 value added (VA) figures and EPCs at 1990 production weights			Value Added as % of GO at dp in 1993	1993 value added (VA) figures and EPCs at 1990 production weights		
					VA dp	EPC	VA wp		VA dp	EPC	VA wp
3112	2.4	0.0	2.4	45	1.1	1.9	0.6	47	1.1	2.4	0.5
3115	0.8	0.3	0.5	30	0.2	1.2	0.1	29	0.2	1.1	0.1
3116	8.5	0.0	8.5	na	na	na	na	33	2.8	1.9	1.5
3117	1.6	0.0	1.6	35	0.6	2.0	0.3	38	0.6	2.0	0.3
3118	1.5	0.0	1.5	32	0.5	2.7	0.2	29	0.4	2.1	0.2
3119	0.3	0.0	0.3	44	0.1	1.8	0.1	46	0.1	2.0	0.1
3121	11.0	0.0	3.0	28	0.8	2.3	0.4	24	0.7	1.7	0.4
3131	4.1	0.0	4.1	33	1.4	1.5	0.9	31	1.3	1.5	0.9
3133	0.3	0.0	0.3	65	0.2	1.6	0.1	64	0.2	1.6	0.1
3134	0.8	0.0	0.8	51	0.4	1.7	0.2	55	0.4	1.8	0.2
3140	7.2	0.0	7.2	77	5.5	1.5	3.7	80	5.8	1.6	3.7
3211	4.9	1.0	3.9	48	1.9	2.4	0.8	55	2.2	3.9	0.6
3212	0.1	0.1	0.0	35	0.0	3.2	0.0	43	0.0	4.3	0.0
3213	2.5	2.2	0.3	58	0.2	2.5	0.1	60	0.2	1.9	0.1
3220	15.3	15.2	0.1	26	0.0	2.4	0.0	12.	0.0	1.1	0.0
3240	1.5	0.3	1.2	60	0.7	1.9	0.4	58	0.7	1.6	0.4
3311	0.6	0.4	0.2	57	0.1	1.8	0.1	62	0.1	1.9	0.1
3411	1.0	0.0	1.0	38	0.4	2.8	0.1	35	0.4	1.7	0.2
3412	0.2	0.0	0.2	25	0.1	3.0	0.0	33	0.1	3.3	0.0
3511	0.2	0.1	0.1	29	0.0	0.8	0.0	33	0.0	1.1	0.0
3512	0.4	0.0	0.4	23	0.1	0.9	0.1	26	0.1	1.0	0.1
3523	2.1	0.0	2.1	40	0.8	2.4	0.3	39	0.8	2.4	0.3
3530	16.0	0.0	16.0	23	3.7	1.3	2.9	23	3.7	1.3	2.9
3551	2.3	0.6	1.7	45	0.8	2.3	0.3	45	0.8	2.3	0.3
3559	1.4	0.6	0.8	47	0.4	2.3	0.2	44	0.4	2.0	0.2
3560	0.9	0.4	0.5	47	0.2	2.7	0.1	50	0.3	2.8	0.1
3610	1.2	0.4	0.8	47	0.4	3.0	0.1	43	0.3	2.6	0.1
3620	0.3	0.0	0.3	62	0.2	1.8	0.1	58	0.2	1.5	0.1
3691	0.6	0.2	0.4	54	0.2	2.8	0.1	47	0.2	2.2	0.1
3692	1.0	0.0	1.0	36	0.4	1.1	0.3	42	0.4	1.4	0.3
3699	1.8	0.2	1.6	48	0.8	1.5	0.5	42	0.7	1.3	0.5
3710	1.0	0.0	1.0	22	0.2	1.6	0.1	19	0.2	1.4	0.1
3720	0.4	0.0	0.4	32	0.1	3.9	0.0	35	0.1	4.4	0.0
3819	1.6	0.3	1.3	45	0.6	2.7	0.2	45	0.6	2.8	0.2
3831	0.2	0.2	0.0	61	0.0	2.1	0.0	61	0.0	2.1	0.0
3839	0.4	0.0	0.4	46	0.2	2.6	0.1	46	0.2	2.6	0.1
3841	1.4	0.0	1.4	47	0.7	1.7	0.4	47	0.7	1.8	0.4
Other	1.9	0.0	1.9								
Totals/Averages											
Inc. 3116	99.7	30.5	69.2		23.8				26.9	1.7	15.4
Exc. 3116	91.2	30.5	60.7		23.8	1.8	13.4		24.1	1.6	14.9

Notes:
dp is domestic price; wp is world price

Column (1) - the industry descriptions for the ISIC 'industries' were given in tables 4.4 and 4.7;
Column (2) - the Gross Output figures were derived from the Annual Survey of Industries for 1990;
Column (3) - the Exports figures were derived from the External Trade Statistics for 1990;
Column (4) - Domestic sales were derived from column (1) minus column (2);
Column (5) - derived from the data for the 1991 PTC report - for the example of ISIC 3115, see table 4.5;
Column (6) - the figures for value added at domestic prices were derived from columns (4) and (5);
Column (7) - the EPC figures are from table 4.7;
Column (8) - the value added figures at world prices were derived from column (6) divided by column (7);
Column (9) - derived from the data for 1993 - for the example of ISIC 3115, see table 4.6 where the value added is 29% of the Gross Output at Domestic Prices;
Column (10) - the figures for value added at domestic prices were derived from columns (4) and (9);
Column (11) - the EPC figures are from table 4.7;
Column (12) - the value added figures at world prices were derived from column (10) divided by column (11).

The PTC was assigned to classify all existing tariff items into these 4 bands,[9] and in November 1990 a significant move towards achieving a 4-band tariff structure was made, when over 2000 items with tariffs greater than 50% were reduced to 50%. In its 1991 report the Presidential Tariff Commission recommended that the 13 bands, in the (then) existing tariff structure, be reduced to 4, and a 4-band structure was gazetted in November 1991. This incorporated an import surcharge and the 4-band structure then adopted was:

10% (capital goods and raw materials);
20% (components and parts);
35% (chemical products); and,
50% (finished goods).

An Export Development Board cess of 10% had been introduced on the top rate in 1990 (PTC 1991, 25).

Thus there has been a continuing simplification of the tariff structure and, over the past 5 years, some reduction in the average level of protection. Nevertheless, the level of effective protection (on domestic sales) would seem to be as high as 1.7, and it should be noted that an EPC on value added of 1.7 implies an EPC on profits which is very much higher (see Maxwell Stamp 1993, 15). It should also be noted that the Maxwell Stamp report found itself in agreement with the 1991 PTC estimates, except those for steel bars and biscuits, for which the Maxwell Stamp estimates of the EPCs were higher, and for bicycles, where the Maxwell Stamp estimate was lower (Maxwell Stamp 1993, 51).

9. Note that Sri Lanka acceded to the convention of the Harmonised Commodity Description and Coding System in 1988. This came into effect in July 1989 (PTC 1991, xii). As a result the number of tariff items increased from 2500 (CCCN) to about 7,000 (see PTC 1991, 20).

Another way of expressing protection is to say that the net subsidy equivalent (NSE) to industry through the tariff structure is running at about Rs 11.5 billion (at 1990 prices). In 1988 the NSE was about Rs 10.4 bn (at 1990 prices - calculated from the value added figures in the last row of table 4.8).[10] These NSEs are equivalent to about 4% of GDP (also at 1990 prices).

A more significant way of expressing this is in terms of the NSE per job. In 1988, the number of employees in the industries sampled by the PTC survey was 91,000. Assuming that the sample was a little over half of the total, the total direct employment in 'factory industry' was about 170,000. On the basis of this employment, the NSE of Rs 11 bn. is equivalent to about Rs 65,000 per employee compared to an annual cost per employee of about Rs 30,000.

It is then, perhaps, not surprising that there is strong political pressure for a further reduction in the level of protection facing the Sri Lankan manufacturing sector. In particular there is pressure to reduce the top rate to 35%,[11] so that the number of tariff bands is reduced to 3. Is this desirable, and what are the likely effects? What are the arguments for and against protectionism? What should be the level of protection in Sri Lankan manufacturing? How quickly should tariffs be reduced? What should be the role of the Presidential Tariff Commission? Some attempt is made to answer these questions in the sub-sections which follow.

The policy on protection - the arguments in brief

The debate about protectionism in Sri Lanka revolves around the same arguments as can be found in the economics literature about protectionism; and in Sri Lanka there is about as much disagreement as there is in the literature.

Briefly the arguments for liberalisation and for reducing protectionism are:

(1) to reduce rent-seeking, to simplify customs administration, and reduce waste and public expenditure on administration;
(2) to reduce anti-export bias, exploit comparative advantage and exploit economies of scale through the export market;
(3) to reduce poverty by reducing prices to the final consumers and by promoting labour-intensive industries;
(4) to reduce x-inefficiency due to lack of competition;

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10. The estimate of the NSE given in the 1991 PTC report was Rs 5.6 bn but this would seem to be for the sample of industries covered by the report. If this sample is assumed to be 56% of the total then the NSE for the whole of the manufacturing sector would be about Rs 10 bn. close to the figure given in table 4.8

11. Thus, Cuthbertson et al 1992 point out that "in 1990....the Government also foreshadowed that ... the top rate of duty would be set at 35 per cent by the mid-1990s" (page 12). The Maxwell Stamp report of 1993 suggested that a two stage reduction be followed with the first stage consisting of a reduction in the top rate to 35% (Maxwell Stamp 1993, 18). A World Bank report of May 1993 also suggested that by 1995 there should be a three-band rate with the top rate being 35% (World Bank May 1993, 18).

(5) to increase the exposure of the economy to new technology and thereby promote it.

The counter-arguments for protection and managed trade are to a large extent the reverse of the above:

(6) to reduce uncertainty and thereby promote long-term investment (that is to nurture 'infant industries');
(7) to promote exports by giving domestically-based companies the launching-pad of a secure domestic market;
(8) to promote diversification out of the primary sector;
(9) to prevent predatory dumping by foreign rivals;
(10) to provide jobs at the expense of the consumer as opposed to providing jobs at the expense of the taxpayer (which could be done by the imposition of a direct payroll subsidy).

Here the following objection may be raised; why not look at the historical experience to see which of trade liberalisation or protectionism has been most successful? Unfortunately the evidence is somewhat inconclusive. The static gains from liberalisation are recognised as being small and there is considerable controversy about the dynamic gains. There is a vast number of studies on trade liberalisation and its effects on growth, productivity, and exports but there are many doubts expressed about the net effects (see for example Clarke and Kirkpatrick 1991, 69; Havrlyshyn 1990,19; Taylor 1991, 207; Thomas 1991, table 4.7; and World Bank 1991, Box 5.3) and few robust conclusions - even though the conclusions are often robustly expressed! The lack of agreement is hardly surprising when one considers the vast range of economic, political and institutional structures within which liberalisation has taken place.

In the Sri Lankan context, World Bank and IMF documents have tended to emphasise the arguments against protectionism, especially emphasising (1) and (4) above. The Walton report of 1988 emphasised (1) namely the advantages of simplifying the tariff system (Walton 1988, iv). A report by Cuthbertson and others (1992) has placed the emphasis on (1), pointing out the administrative costs of export assistance (page 3), and on (2), in emphasising the relative disincentive to exports resulting from the Sri Lankan trade tax structure (page 7). The 1993 Maxwell Stamp report also emphasised the anti-export bias of the tariff structure (Maxwell Stamp 1993, 19), and implied that there is considerable x-inefficiency among Sri Lankan firms, although it conceded (on the basis of an analysis of companies) that many firms would face problems if the highest tariff rate were reduced to 35% (Maxwell Stamp 1993, 59). The effects of protectionism on the expenditure of the poor was stressed in the recent report by Laursen (1993), which, however, referred to the agricultural rather than the manufacturing sector.

On the pro-protectionist side, the arguments in Sri Lanka most often revolve around **dumping, infancy and the protection of jobs**. An additional argument that has not so frequently been advanced in Sri Lanka is (7) above - namely the case for protectionism on the grounds that it will provide a launching-pad for exports.

The problem with the **dumping** argument is that it is impossible in practice to distinguish between predatory dumping and competitive pricing, a point emphasised in a number of studies - see for example Walton 1988, vi and Bertrand 1993, 5. Unfortunately, all too often, dumping is used as an excuse for protecting inefficient industries. In this respect, Sri Lanka is no exception.

The **infancy** argument is that new or 'infant' industries must be nurtured in a newly-industrialising country like Sri Lanka until they grow up into 'mature adult' industries that are internationally competitive. However, as the Maxwell Stamp study argued, it is difficult for governments to 'pick winners' (Maxwell Stamp 1993, 5). While this is true, there is a number of notable examples of government agencies 'picking winners' - for example MITI in Japan and the EDB in South Korea (see Jenkins 1991). Unfortunately, there is also a number of other examples of infants which never grow up to become competitive, and infancy, like dumping, can be an excuse for protecting industries which are not competitive and never look like becoming so. It is not sufficient that an industry with initially high costs promises to reduce costs by moving along a learning curve but that the speed at which it moves along its learning curve is **greater** than that of competitor countries.

Similarly, it is not sufficient to hope that a company will aggressively enter **export** markets from the base of a secure domestic market. This linkage of the domestic and export markets may have to be enforced by the government, giving protection on sales in the domestic market on condition that a certain proportion of production is exported. Such conditionality was applied in South Korea in the 1970s (see Edwards 1993, 40). This policy, which encourages cross-subsidisation from the domestic into the export market, is a quite different approach to that adopted by the Maxwell Stamp report which stated that: "There was a surprising, for us, number of firms in the sample that were either engaging in exports or actively considering doing so. A significant reduction in tariffs should push this re-orientation forward in stages more quickly" (Maxwell Stamp 1993, 60).

A policy of conditional protection does of course require that the export performance is monitored carefully and that the conditionality is enforced. But even if it can be enforced, is it worthwhile? Is such a policy socially beneficial? This was the question tackled in a 1973 article written by Pursell and Snape. They argued that a domestic subsidy may be justified to enable a company to export where there are economies of scale. But they also argued that if this subsidy took the form of an import duty then the loss of consumer's surplus would mean that the imposition of an import duty would produce a net social loss (Pursell and Snape 1973).

The argument of Pursell and Snape is valid if the economies of scale are all internal to the firm and if its costs are the same as real resource costs. However, if there is a labour surplus in the economy, a protectionist policy which is conditional on export performance may be a sensible way of tackling the labour surplus.

Thus a protectionist policy may be advocated on the grounds that **jobs** are protected and/or created. This argument is considered in the next sub-section along

with a consideration of the benchmark level of effective protection used by the Presidential Tariff Commission.

The 'benchmark' level of effective protection - a real resource cost approach

The 'benchmark' level of protection used by the PTC is 1.5 (see PTC 1991, 43).[12] However, nowhere in the 1991 PTC report is there given any rationale for using a benchmark level of 1.5. One criterion that might be used is the real resource cost (RRC). Using this approach, an 'optimum' average EPC can be determined.

To illustrate the point, the data analysed in this report are used. Here the analysis is done on the basis of the 1993 data on protection but using 1990 production weights. The figures are shown in table 4.9 below.

Table 4.9:
Protection in the Manufacturing Sector
Sri Lanka - 1993 (based on 1990 weights)

	Domestic prices (Rs bn)	NPCs and EPC	World prices (Rs.bn)
Gross output	67.3	1.4	47.4
Traded inputs	40.5	1.3	32.0
Value added	26.8	1.7	15.4
Wages	6.5		
Depreciation	4.2		
Non-traded inputs	6.3		
Gross profits	9.8		
Fixed assets	27.8		
Return on capital			
Employed (%)	35.1		

Note: Derived from the input-output coefficients for PTC 1991 and NPCs for 1993

The net foreign exchange earned by the manufacturing sector in 1993 (but based on 1990 weights) through import substitution was Rs 15.4 bn. This ignores any foreign exchange 'lost' through:

12. As already pointed out, the effective protection coefficient was estimated by PTC 1991 by including only the traded element of the non-traded inputs as traded inputs. Thus the PTC 1991 report used the Corden rather than Balassa approach in measuring protection. The Balassa method treats non-tradable inputs as tradable inputs with zero tariffs, while Corden treats non-traded inputs as part of the primary factors (and therefore value added) (Corden 1971, 157-63). The Balassa method will give higher EPCs than the Corden method.

- wages paid to expatriate labour and remitted overseas;
- profits remitted overseas.

The domestic resource cost of earning these foreign exchange savings can be seen to be depreciation of Rs 4.2 bn., plus wages of Rs 6.5 bn., and other non-traded input costs of Rs 6.3 bn. The total DRC is therefore Rs 17.0 bn. or about 1.1 times the foreign exchange saving. On this basis the manufacturing sector looks to be inefficient but only marginally so. With protection, it makes a high rate of profit. Without protection, the manufacturing sector would make a loss (or be forced to reduce its costs).

The inefficiency is increased if part of the profits are considered as a cost on income distribution grounds or if they are deducted from the foreign exchange earnings due to being remitted overseas. If, for example, it is assumed that 20% of the profits (that is, Rs. 2.0 bn.) are remitted overseas, then the DRC ratio would be 17.0/(15.4 - 2.0) = 1.3.

However the manufacturing sector begins to look a lot more attractive if it is assumed that the social cost of the non-traded inputs is less than the market cost and a real resource cost (RRC) ratio is derived. Thus if it is assumed that the social cost of labour and non-traded inputs is 70% of their market cost[13], then the RRC/FE ratio would be 70% of 12.8, plus 4.2 = 13.2, divided by 15.4 = 0.9, and the manufacturing sector has a reasonably low RRC ratio.

If the social cost of labour is combined with a profit remittance figure of 20%, the RRC ratio is almost exactly equal to 1.0. Thus, if the figures are to be believed, the high EPC in Sri Lankan manufacturing seems to be reflected in a combination of high profits and high costs. It should be emphasised that, in this calculation, most of the profits are not counted as real resource costs.

This gives rise to the conclusion that, on average, the protection is shielding a high cost manufacturing sector, but that at the same time, it is high enough to provide a high rate of profit.

What does this imply for the benchmark EPC figure of 1.5 used by the PTC (PTC 1991, xii)? First it needs to be emphasised that the benchmark figure of 1.5 is very much higher than the the guideline figure suggested by economists who have studied the effects of trade policy on growth and efficiency (see for example Havrylyshyn 1991). The guideline EPC suggested by trade economists tends to be around 1.3.

Essentially what they are saying is that, if a company cannot make a satisfactory profit when it is given an EPC of 1.3, then it is not in the social interest that the company starts to operate or continues to operate. It should be noted that, using the data in table 4.9, an EPC of 1.5 would be equal to a very high rate of protection on the profits (indeed as we have seen, without protection, there would be a loss).

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13. This (0.7) is an approximation to the shadow price ratio recommended for labour and non-traded inputs by the GoSL, 1991, 59.

A crude cost-benefit analysis suggests that the Havrylyshyn guideline may be slighly too low given the surplus labour situation in Sri Lanka, but that the PTC benchmark of 1.5 may be too high. Much depends on how profits are valued and what shadow prices are assumed for labour and other non-traded inputs. If the World Bank's figures of a shadow price of labour of 0.9 and a shadow price of foreign exchange of 1.1 are assumed (together with an assumption that 20% of profits are remitted) then the benchmark EPC figure can be calculated to be about 1.4.

It needs to be emphasised that a small EPC on value added can mean a very high EPC on gross profits. For example, if we look at the cigarette industry, the EPC of 1.6 on value added (see ISIC 3140 in table 4.8) is equivalent to an EPC on profits of well over 3.0. Thus the rate of profit (gross and before taxes) of the tobacco industry which, with protection, was over 45% on fixed assets in 1988, would probably have been less than 15% on fixed assets without protection. However, if it is assumed that half of those profits are taxed, then the DRC/FE ratio would still be below one. If, on the other hand, a foreign company pays no tax on profits and remits overseas the whole of the profit, then the DRC/FE ratio would be very high - in which case the desirable level of protection is lower.

At first sight it would seem strange that the level of desirable protection will depend on whether a company is foreign or domestic and on whether or not it is paying tax on profits. But this is not so strange when the issues are considered carefully. If a foreign company is being heavily protected, then the consumer is subsidising the company through the higher-than-world prices paid for the product - but if the company is paying a tax on profits, then part of the subsidy is being returned to the taxpayer (the government).

Where does this leave the situation? It means that if protection should continue to be considered on a case-by-case basis, the analysis of protection should include an analysis of what is going on behind the protective barriers. Is the RRC/FE ratio higher than one? If so, the protection should be reduced. Is the protection merely enabling a foreign company to make very high profits which it is remitting overseas so that the RRC/FE ratio is again greater than one? If so, again the protection should be reduced.

As mentioned above, there is also the further possibility that the protection be tailored not just to retained value added and real resource costs but also to export performance. However, such careful tailoring of protection requires not only a good statistical base (on retained value added and real resource costs) but also careful monitoring of export performance. Not only is such a statistical base not in existence but also many government officials allege that the bureaucracy in Sri Lanka is not sufficiently independent of business to be able to 'pick winners'.

If this argument is accepted, then it is sensible for the structure of protection to be reduced and simplified so that the EPC in each industry is about 1.3 to 1.4 - such a level would be well below the present average of 1.7.

The policy on protection - the effect of moving to a 3-band system

It has been stated above that many reports have recommended that the top rate of import duty should be lowered to 35%. Given the present high level of effective protection, this would seem to be desirable, but in the time available to this study, it has not been possible to recalculate the EPCs for a new top duty rate of 35%. For the sample of industries looked at by Maxwell Stamp, the reduction in EPC was from 2.6 to 1.9, for a reduction in the top rate of duty to 35% (see Maxwell Stamp 1993, 56).

Nor has it been possible for this study to estimate the effects on duty revenue of such a reduction in the top import duty rate (but at the time of writing - just before the 1994 Budget - this is being done by advisers in the Ministry of Industry, Science and Technology).

In any case it seems as though a reduction in the top rate of duty to 35% is likely within months if not days. What about the longer term future? What should the policy be and what should the institutional structure look like? And should the Presidential Tariff Commission remain in existence? These are important questions that were taken up in the Executive Summary, Synthesis and Recommendations.

5. Rice

5.1 Rice production and protection in Sri Lanka

Rice accounts for approximately 25% of the consumption basket, about three-quarters of total grain consumption and 45% of calorie intake in Sri Lanka. It also 'employs' about a half the labour force. Since 1953, the area under rice cultivation has doubled, and output has increased more than fivefold. As Bhalla has put it: "Whether in terms of rice subsidies for consumers, protection for producers, or massive irrigation programs, rice has been central to the affairs of the nation" (Bhalla in Krueger et al 1991, 197).

Since the 1950s, government intervention has taken a variety of forms in Sri Lanka. There has been massive aid-financed development of irrigation (most notably under the Accelerated Mahaweli Development Programme (AMDP), with the irrigation services being provided at a highly subsidised rate. In addition, the government has intervened in rice marketing principally through the following three operations:

(i) rice rationing and the food stamp programme;
(ii) domestic procurement and the Guaranteed Price Scheme (GPS); and
(iii) import controls

(i) Rice rationing and the food stamp programme

Until 1978 the government subsidised consumers through the provision of a free or heavily subsidised rice ration available to most households. To administer the rice ration programme, the government used a dual-price scheme - one applying to consumers and the other to producers. In general, the guaranteed producer price was significantly above the import price so that the price intervention translated into a dual subsidy - one received by consumers and one by producers. This is shown in table 5.1 below, taken from Bhalla (1991).

Table 5.1:
Subsidy/Protection Rates on Rice 1951-85

Rate of Subsidy/ Protection	1951-55	1956-60	1961-65	1966-70	1971-77	1978-85	1951-85
Rice Production	47	105	88	64	81	4	60
Rice Consumption	16	20	46	25	-13	5	14

Source: Bhalla 1991, 208

The table shows that rice production was heavily subsidised from the early 1950s through to the late 1970s (see the top row of table 5.1). However, the price to the consumer was significantly (more than 30%) above the world price only in the early 1960s, whereas during the 1971-77 period it was actually below the world price.

In the 1970s, because of this mixture of the (relatively) high producer price and low consumer price, expenditure on rice subsidies was considerable. Hence, in 1978 expenditure on subsidies by the government was approximately 20% of total

government expenditure, and after the election of the UNP government, steps were taken to reduce these subsidies. In 1979 the rice rationing scheme was replaced by a system of food stamps and by 1980 the expenditure on subsidies had fallen to 2% of total government expenditure (see Rupasena 1990).

It is estimated that approximately 75% of food-stamp income is presently used to purchase rice, but the rice itself is provided to consumers at market prices. Thus this form of intervention needs to be given no further attention in this study. Instead, we focus on the other two forms of intervention - paddy procurement (and the GPS) and import controls.

(ii) Paddy procurement and the GPS; and changes in prices and production

In recent years this form of intervention has also become unimportant. Floor prices have existed for some time for not only paddy but also other crops (such as maize, blackgram, groundnut, soyabean, sesame, chillies, cowpeas, greengram and finger millet). We consider the major 'subsidiary food crops' in section 7, but in recent years, for paddy as well as for these crops, the guaranteed price system has not been operative.

In 1971 the Paddy Marketing Board (PMB) was assigned the tasks of handling rice procurement, storage and milling. Paddy purchases under the GPS were carried out through PMB temporary procurement stores, Multi-Purpose Cooperative Societies (MPCSs) and private agents. The PMB arranged for milling through its own mills or through privately-owned mills. The rice rations were distributed by the Food Commissioner's Department (FCD) which remains responsible for the wholesale distribution of rice to both MPCSs and private dealers.

However, as financial resources to the PMB have been cut drastically, so its role in supporting the paddy price has declined. At the beginning of the 1970s, it was buying as much as 40% of total farm production, but by the beginning of the 1990s this figure had dropped to 3% or less (see table 5.2).

Table 5.2:
Production of Paddy and Purchases under the GPS - 1970-1990

	1	2	3
	Paddy Production (Mn.MT)	Purchases of Paddy under GPS (Mn.MT)	%
1970	1.62	0.55	34
1975	1.15	0.23	20
1980	2.13	0.21	10
1985	2.66	0.10	4
1990	2.54	0.03	1

Sources : 1. CBofSL AR 1992 Table 12, ALEX et al 1989, 9
3. Rassas and Fitch, 1991, 30
Notes: 2. Derived from 1 and 3

Over the 1980s the average farm-gate price of rice was well above the average guaranteed price (see Edirisinghe 1991, 45 and table 5.3).

Table 5.3: Paddy Prices

	1	2	3	4
	Guaranteed Price of Paddy (Rs./kg)	Farm-gate Price of Paddy (Rs./kg)	GDP Deflator (1982=100)	Real Farm-gate price (1982=100)
1977	1.6	1.7	0.50	3.4
1978	1.9	2.0	0.53	3.7
1979	1.9	2.0	0.62	3.3
1980	2.0	2.7	0.73	3.6
1981	2.6	3.2	0.88	3.7
1982	2.8	3.4	1.00	3.4
1983	3.0	3.5	1.15	3.1
1984	3.0	3.8	1.34	2.8
1985	3.0	3.8	1.35	2.8
1986	3.4	3.9	1.43	2.7
1987	3.4	4.2	1.53	2.7
1988	3.3	4.3	1.71	2.5
1989	5.3	5.7	1.87	3.0
1990	6.5	6.1	2.25	2.7
1991	6.5	6.7	2.48	2.7
1992		7.8	2.73	2.9

Sources and Notes:
1. From 1977 to 1988 Edirisinghe 1991, 45 From 1988, Paddy Marketing Board
2. Edirisinghe 1991, 45
3. Central Bank of Sri Lanka Annual Reports (Various Years)
4. Derived from 2 and 3

The downward pressure on producer prices builds up at the end of the Maha season (the main paddy season from November to March), as can be seen from table 5.4 which shows the average monthly wholesale prices of raw white rice over the 1984-1991 period.

Table 5.4: Monthly Average Wholesale Prices of Raw White Rice 1984-91

Month	Av. for Month (Rs./ kg)
Jan.	9
Feb.	9
March	8
April	8
May	8
June	8
July	9
August	9
Sept.	8
October	9
Nov.	10
Dec.	10

Source: ARTI Food Commodity Prices 1985-1991

The earlier table 5.3 shows the sharp decline in the real farm-gate price of paddy (in 1982 prices) from Rs 3.7/kg in 1981 to Rs 2.7/kg in 1991. In spite of this decline in the 'real price', the production of paddy has risen and Sri Lanka has been close to self-sufficiency in rice since the late 1970s, as table 5.5 shows.

Table 5.5:
Apparent Consumption and Self-Sufficiency in Rice Production

Year	1	2	3	4	5
	Paddy Production (Mn. MT)	Rice Production (Mn. MT)	Imports of Rice (Mn. MT)	Apparent Consumption (Mn. MT)	% Self Sufficiency
1970	1.62	1.10	0.52	1.62	68
1971	1.40	0.95	0.35	1.30	73
1972	1.31	0.89	0.28	1.17	76
1973	1.31	0.89	0.32	1.21	74
1974	1.60	1.09	0.30	1.39	78
1975	1.15	0.78	0.46	1.24	63
1976	1.25	0.85	0.50	1.35	63
1977	1.68	1.14	0.59	1.73	66
1978	1.89	1.29	0.21	1.50	86
1979	1.92	1.30	0.21	1.52	86
1980	2.13	1.45	0.19	1.64	88
1981	2.23	1.52	0.16	1.67	91
1982	2.16	1.47	0.16	1.63	90
1983	2.48	1.69	0.15	1.83	92
1984	2.42	1.65	0.03	1.68	98
1985	2.66	1.81	0.17	1.98	91
1986	2.69	1.83	0.23	2.06	89
1987	2.13	1.45	0.26	1.70	85
1988	2.47	1.68	0.21	1.89	89
1989	2.06	1.40	0.32	1.72	81
1990	2.54	1.73	0.17	1.90	91
1991	2.39	1.63	0.13	1.76	93
1992	2.34	1.59	0.24	1.83	87

Sources and Notes:

1. Central Bank of Sri Lanka Annual Reports (Various Years) e.g. 1992 Table 12
2. Derived from col. 1 x 0.68
3. 1970,-1973, 1984, and 1985 from Edirisinghe 1991, 25; 1974-83 from AG Stat.(Jan '85), 5; 1986-92 from CB of SL AR 1992, Table 45
4. Derived by col. 2 + col. 3
5. Col.2 as a percentage of col. 4

Note that the figures for apparent consumption in the table are indicative only as changes in stocks are ignored.

As table 5.5 shows, in the early 1990s domestic production has been providing about 90% of apparent consumption. However, complete self-sufficiency has not been

achieved and forecasts of such self-sufficiency have successively stretched into the future as shown in table 5.6.

Table 5.6:
Forecasts of Self-Sufficiency in Rice

Date of Study	Researchers	Date of Forecast of Self-Sufficiency
1984	NAFNS	1987
1986	IBRD	1987
1986	USAID	1991
1988	FAO/CP	1991
1990	Ranaweera et al	1996
1990	Abeysekera	1996

Source: Edirisinghe 1991, 41

Sri Lanka has not achieved self-sufficiency in spite of having a low per capita consumption of rice compared to many other major rice-producing countries (see Alex et al 1989, 17). Nevertheless, in spite of the fall in the 'real price' of rice, the production

Table 5.7:
Output and Real Gross Earnings from Paddy

Year	1	2	3
	Paddy yield (MT/ha)	Real Farm-gate price (1982=100) (Rs./kg)	Real Gross earnings (1982-Prices) ('000 Rs./Ha)
1977	2.52	3.4	8.6
1978	2.61	3.7	9.5
1979	2.75	3.3	8.9
1980	2.93	3.6	10.7
1981	3.01	3.7	11.0
1982	3.26	3.4	11.1
1983	3.61	3.1	11.1
1984	3.07	2.8	8.6
1985	3.47	2.8	9.8
1986	3.50	2.7	9.5
1987	3.56	2.7	9.7
1988	3.41	2.5	8.5
1989	3.37	3.0	10.2
1990	3.45	2.7	9.3
1991	3.40	2.7	9.2
1992	3.42	2.9	9.9

Sources and Notes:
1. Central Bank of Sri Lanka Bulletin, June 1993,Table 62
2. see Table 5.3
3. Derived by col.1 x col.2

of paddy in Sri Lanka grew rapidly in the 1970s and early 1980s. According to Rassas and Fitch (1991, 26), between 1960 and 1988, the average annual increase in production was 4%, with the yield per hectare growing by 2.5% per annum and the area under paddy growing at about 1.5% per annum. As stated, this growth rate has been achieved in spite of the real decline in the farm-gate price of paddy. The lower price has been offset by a rising yield per hectare as shown in table 5.7 above. Thus the gross earnings from paddy have fallen from an average of Rs 10,200 per hectare for 1979-81 to Rs 9,600 per hectare for 1989-91 (in 1982 prices).

Has the price decline experienced by the Sri Lankan farmer between the late 1970s and the early 1990s meant that the producer price in Sri Lanka has fallen below the world price? The answer is no, since world prices have also been falling (in real terms) over this period. This is shown in table 5.8 below.

Table 5.8:
World Rice Prices (for 5% Thai Rice in US$/MT)

Year	1 Current Prices	2 Prices in 1980 terms	3 Prices in 1990 terms	4 Prices in 1980 terms (Linked Series)
1970	144	414		414
1971	129	352		352
1972	147	368		368
1973	350	754		754
1974	542	959		959
1975	363	578		578
1976	255	400		400
1977	272	389		389
1978	368	457		457
1979	334	363		363
1980	434	434	603	434
1981	483	480		480
1982	293	296		296
1983	277	287		287
1984	252	266		266
1985	216	225	315	225
1986	211	186		186
1987	230			
1988	301		316	228
1989	320		338	243
1990	287		287	207
1991	314		308	222
1992	287		270	194

Sources and Notes:

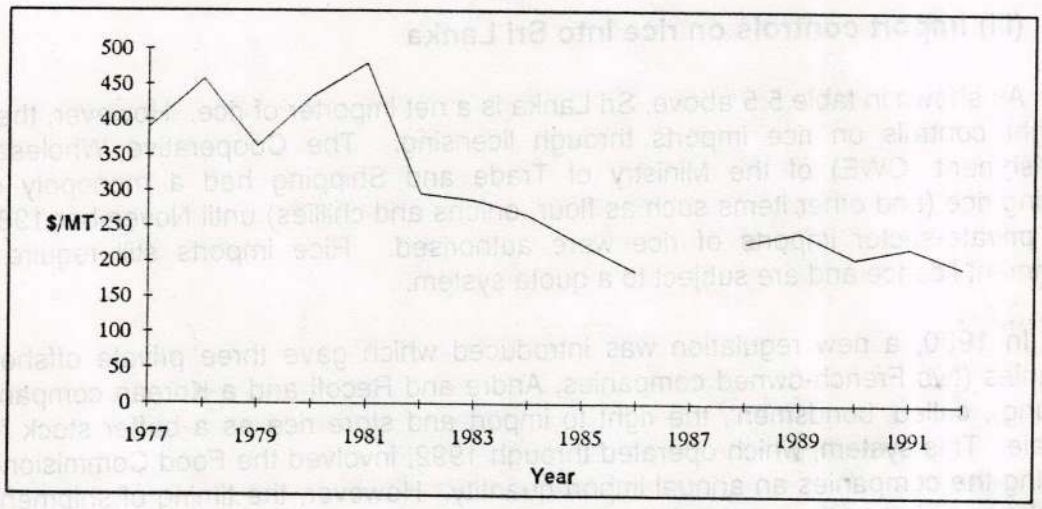
1, 2 WB - Commodity Trade and Price Trends, 1987-88 Edition, 52; 1987 from WB 1989, 145; and 1988-1992 from WB 1993 (vi).

3 From WB: Price Prospects for Major Primary Commodities, 1990-2005, (iv) table 1

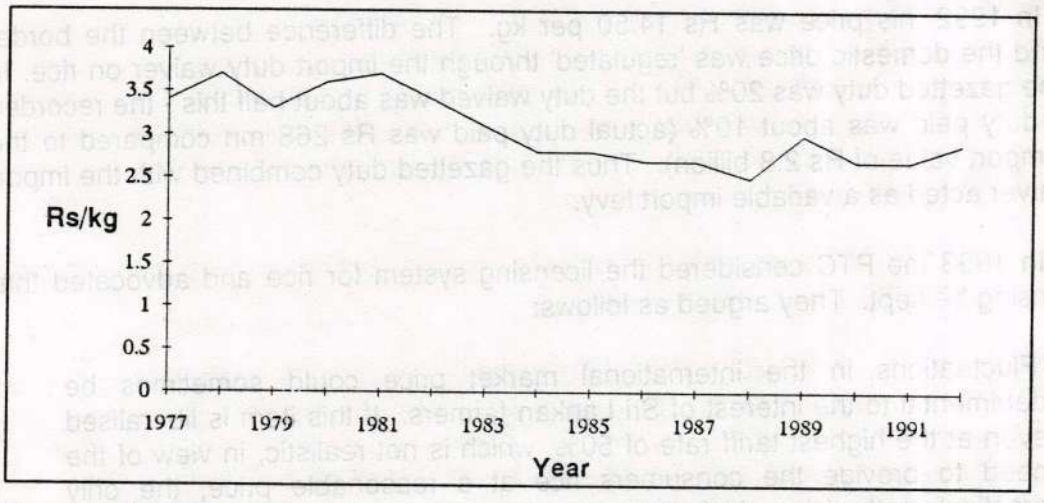
4 Calculated from 1987 on the basis of column 2 x 0.72 (0.72 from average of 434/603 and 225/315) The price shown is for 5% broken Thai rice, FOB Bangkok

Like the Sri Lankan farm-gate price, the world price of rice has fallen over the last 15 to 20 years. Thus the average price of rice shown (for Thai, 5% broken) was about US$350 per MT (in 1980 prices) between 1980 and 1982 whereas between 1990 and 1992 it was US$288 per MT (in 1990 prices), roughly equivalent to only about US$206 per MT in 1980 prices. Thus the fall in the real world price has been over 40% in this 10 year period while the fall in the real farm-gate price in Sri Lanka over the same period has been about 23% (calculated from table 5.3). The real world price of rice and the real farm-gate price are compared in figure 5.1 for the 15 year period from 1977 to 1992.

Figure 5.1:
World Price Series - 1977-1992
(US$/MT)



Domestic Farm-gate Rice Price Series - 1977-1992
(Rs./kg)



Source and Notes:
From Table 5.3, col. 4 and Table 5.8, col. 4
World prices in 1980 terms; domestic prices in 1982 terms
1987 world price in 1980 terms unavailable

Figure 1 shows the trends, but what about the level? How does the domestic price compare with the world price converted at the official exchange rate? These are more difficult questions to answer, but in general the domestic price has been above the world price. However, it is difficult to estimate the exact magnitude of this differential due to the difficulty in deciding on the appropriate discount between the 5% broken Thai price and the Sri Lankan rice price.

This issue is discussed in more detail below, but for the moment assume that the domestic price is above the world price. What is the wedge driving the prices apart? Here the discussion switches to the third form of intervention (namely import controls) which has become more important as the second (the GPS) has declined.

(iii) Import controls on rice into Sri Lanka

As shown in table 5.5 above, Sri Lanka is a net importer of rice. However, there are tight controls on rice imports through licensing. The Cooperative Wholesale Establishment (CWE) of the Ministry of Trade and Shipping had a monopoly on importing rice (and other items such as flour, onions and chillies) until November 1988, when private-sector imports of rice were authorised. Rice imports still require a government licence and are subject to a quota system.

In 1990, a new regulation was introduced which gave three private offshore companies (two French-owned companies, Andre and Recofi and a Korean company, Samsung), called 'bondsmen', the right to import and store rice as a buffer stock for later sale. This system, which operated through 1992, involved the Food Commisioner allocating the companies an annual import quantity. However, the timing of shipments and sales was left to the companies. Each bondsman was required to hold a certain buffer stock. Rice held in excess of the buffer stock requirement could be sold in the domestic market, but not below a certain price, fixed by the Food Commissioner.

In 1992 this price was Rs 14.50 per kg. The difference between the border price and the domestic price was 'regulated' through the import duty waiver on rice. In 1992 the gazetted duty was 20% but the duty waived was about half this - the recorded rate of duty paid was about 10% (actual duty paid was Rs 268 mn compared to the actual import value of Rs 2.8 billion). Thus the gazetted duty combined with the import duty waiver acted as a variable import levy.

In 1993 the PTC considered the licensing system for rice and advocated that the licensing be kept. They argued as follows:

> "Fluctuations in the international market price could sometimes be detrimental to the interest of Sri Lankan farmers. If this item is liberalised even at the highest tariff rate of 50%, which is not realistic, in view of the need to provide the consumers rice at a reasonable price, the only practical method by which both objectives of protecting the local farmer and providing rice to consumers at a reasonable price would be to maintain licence control to permit import of shortfall only at a low rate of duty. Though the present duty is 20%, the Government in effect is levying

only 12% duty in order to keep the price of imported rice more or less on par with local rice. ..... Rice in any case is a staple diet and for strategic reasons the country should rely on its own production and should have an effective mechanism to ensure that protection not only be given by tariff but also by licence control. Therefore we recommend that the items listed below <the report refers here to rice> be retained under ICL" (PTC 1993, 13).

A somewhat different perspective was put forward in Laursen's paper which (although stating that it was beyond the scope of the paper to discuss the arguments for intervention on grounds of welfare and food security), after setting out a table showing the NPCs for rice, stated that:

"Following the removal of a guaranteed minimum price at the farm-gate for rice and of fertiliser subsidies, farm income from rice production is already at a low level. The fact that the protection coefficient of rice is larger than one and that there seem to be no major market distortions in rice production, implies that it is not economically efficient to produce as much rice in Sri Lanka as is the case at present" (Laursen 1993, 9).

These recommendations of the PTC and of the Laursen paper are considered later in this section. But before that, domestic and world rice prices are compared and implications for the consumption and production of rice in Sri Lanka of complete liberalisation are examined.

5.2 World price, domestic prices, liberalisation and rice consumption in Sri Lanka

Table 5.9 shows the calculations of the NPC for rice made by Laursen in 1993.

Table 5.9:
Protection on Rice - 1985 to 1991

	+/-	1985	1986	1987	1988	1989	1990	1991
CIF (Rs/kg)		5.2	4.5	6.1	8.6	10.8	10.2	11.9
Quality adj.(20%)	-	1.0	0.9	1.2	1.7	2.2	2.0	2.4
Adjusted CIF price(Rs/kg)		4.1	3.6	4.9	6.9	8.6	8.2	9.5
Port charges, handling, transport	+	0.2	0.2	0.3	0.3	0.3	0.4	0.4
Importer's margin	+	0.3	0.3	0.3	0.5	0.6	0.6	0.7
Border price (wholesale equivalent)	=	4.6	4.1	5.5	7.7	9.5	9.1	10.6
Domestic wholesale price		7.1	7.2	7.7	8.4	11.4	14.1	14.2
NPC		1.5	1.7	1.4	1.1	1.2	1.5	1.3

Source: Laursen 1993, page 4.

As can be seen from the table, Laursen estimates that the NPC has varied between 1.1 and 1.7 over the 1985-91 period. The average for 1985-91 is compared with the averages of Bhalla for earlier periods in table 5.10.

Table 5.10:
The protection of rice in Sri Lanka - 1951-91

Year	Nominal Protection Coefficients...	
	...on Production	...on Consumption
1951-55	1.5	1.2
1956-60	2.1	1.2
1961-65	1.9	1.5
1966-70	1.6	1.2
1971-77	1.8	0.9
1978-85	1.0	1.0
1985-91	1.4	1.4

Sources: Bhalla in Krueger et al 1991, 208 for 1951-85
Laursen 1993, 4 for 1985-1991

Without having access to the detailed calculations and assumptions which lie behind Bhalla's figures, it is difficult to say whether they can be meaningfully compared with those of Laursen. Here the focus is on Laursen's figures for which the detailed assumptions are available. However, the figures seem somewhat odd since (as shown in table 5.11) the ratio of Laursen's CIF price to the main internationally quoted price of rice (Thai, 5% broken) seems to vary considerably over the 1985-1991 period.

Table 5.11:
Rice Prices of Laursen and FOB Bangkok Compared

Rice price comparisons		1985	1986	1987	1988	1989	1990	1991
1. Laursen's CIF price (Rs/kg) - including quality adjustment		4.1	3.6	4.9	6.9	8.6	8.2	9.5
2. Exchange rate (Rs/US$)		27.4	28.5	30.8	33.0	40.0	40.2	42.6
3. Laursen's CIF price(US$/MT)		113	104	150	227	344	329	406
4. FOB price - 5% Thai (US$/MT)		216	211	230	301	320	287	314
5. Ratio of 3 to 4		0.52	0.49	0.65	0.75	1.08	1.15	1.29

Sources and Notes:
Row 1 from Laursen 1993 after allowing for quality adjustment
Row 2 from Laursen 1993, 6
Row 3 is row 1 multiplied by row 2
Row 4 is the FOB (Bangkok) price for 5% broken Thai rice (from table 5.7 of this report)
Note that the figures may not agree precisely because of rounding errors

Clearly, a major issue in making price comparisons between Sri Lankan rice and internationally traded varieties is to determine which of the international varieties is closest in comparison to Sri Lankan rice. In deciding on the variable import levy in Sri

Lanka, the Food Commissioner's Department uses the FOB price for Thai 25% broken (super) less a 5% discount and then adds on an allowance for freight charges. It seems that the 25% Thai broken is considered to be equivalent to 30-35% broken Sri Lankan rice because of the different definitions of 'broken' in the two countries.

For the 18 months of January 1992 through to June 1993, the average prices of 25% broken and 5% broken were closely aligned, with 25% broken trading at a fairly constant discount of just under 20% on the 5% broken (see table 5.12 below).

Table 5.12:
A Comparison of Thai Rice Prices - 1992 and 1993

Month	Rice Prices - Bangkok FOB (US$/MT)					
	25% Thai Super (1)	5% Thai (2)	Percentage of 1 to 2	25% Thai Super (1)	5% Thai (2)	Percentage of 1 to 2
	1992			1993		
January	236.0	292.0	80.8	233.0	282.0	82.6
February	238.0	293.0	81.2	231.3	280.3	82.5
March	238.0	292.0	81.5	220.5	268.0	82.3
April	239.3	293.0	81.7	203.3	253.3	80.3
May	238.0	292.0	81.5	182.0	232.0	78.4
June	243.0	297.0	81.8	178.3	229.0	77.8
July	243.0	297.0	81.8			
August	244.3	293.7	83.2			
September	240.0	289.0	83.0			
October	229.3	278.0	82.5			
November	228.0	277.0	82.3			
December	229.0	277.0	82.7			
Average	237.2	289.2	82.0	208.1	257.4	80.8

Source: Food Commissioner's Department (October 1993)

Thus it seems reasonable to take, as Laursen did, a 20% discount on the 5% broken price. In table 5.13 below, the NPCs are re-calculated using the 5% Thai price, taking a 20% discount and then adding on the freight allowance to arrive at an equivalent Colombo CIF price for 25% broken. To this is added port handling charges and the importer's margin to derive the border price equivalent price at the wholesale stage. This is then compared with the domestic wholesale price to derive the NPC for each of the years from 1985 to 1991.

The result seems to be very different from the conclusions of Laursen. The Sri Lankan wholesale price is only a little above the border price equivalent for most years and is sometimes even below the world price - the NPC varies between 0.9 and 1.3, whereas Laursen's NPC varied between 1.1 and 1.7 for the same period.

What about the future prospects? The World Bank's forecast for the 5% Thai price in the year 2000 (but at 1990 prices) is US$255 per MT. After quality and other adjustments (as in table 5.12) this is equivalent to a domestic wholesale price of just under Rs 10/kg. The actual domestic wholesale price in 1990 and 1991 was about Rs 14.0/kg which implies a NPC of about 1.4 on the forecast world price (as adjusted for quality).

Table 5.13:
Protection on Rice - 1985 to 1991

	+/-	1985	1986	1987	1988	1989	1990	1991
1 FOB price - 5% Thai (US$/MT)		216	211	230	301	320	287	314
2 20% quality discount (US$/MT)	-	43	42	46	60	64	57	63
3 Freight (US$/MT)	+	12	12	12	12	12	12	12
4 Adjusted CIF price (US$/MT)		185	181	196	253	268	242	263
5 Exchange rate (Rs/US$)		27.4	28.5	30.8	33.0	40.0	40.2	42.6
6 Adjusted CIF price (Rs/kg)		5.1	5.2	6.0	8.3	10.7	9.7	11.2
7. Port charges, handling	+	0.2	0.2	0.3	0.3	0.3	0.4	0.4
8 Importer's margin	+	0.4	0.4	0.4	0.6	0.8	0.7	0.8
9. Border price (w'sale equivalent)	=	5.6	5.7	6.7	9.2	11.8	10.8	12.4
Domestic wholesale price		7.1	7.2	7.7	8.4	11.4	14.1	14.2
NPC		1.3	1.3	1.1	0.9	1.0	1.3	1.1

Sources: See text, and FAO 1988 (Working Paper 3 Table 4) for row 3

Clearly, it seems likely that if the World Bank's forecast is accurate and if the domestic wholesale price cannot be reduced in real terms, then the NPC will rise sharply and Sri Lankan consumers will have to pay prices which are well above world prices as they did in the 1960s (see table 5.10). And if major substitution between rice and other commodities is to be avoided, then close substitutes will also have to be highly protected.

The closest substitutes for rice seem to be wheat, root crops and other grains. These are the commodities with the highest cross-elasticities (see Jiron 1987, 15 and Department of Agriculture 1991). Thus, if high protection is given to rice, then it will also have to be given to these crops, if significant substitution in consumption is to be avoided.

The implications are far-reaching. It should be emphasised that this analysis does <u>not</u> mean that prices to the consumers would necessarily rise in real terms. What it <u>does</u> mean is that these prices would rise relative to world prices, unless the government subsidised the prices to consumers, in which case Sri Lanka would be back to the situation which existed (Bhalla alleges) in the 1960s: prices to producers would be well above world prices, prices to consumers would also be above world prices but not to such a great extent - with the government meeting the cost of the difference.

Thus it is important to look at the production structure and to look at the case for and against protection being given to producers in Sri Lanka.

5.3 Liberalisation, protection and paddy production in Sri Lanka

How would the liberalisation of rice imports affect production? If anything, this assessment is more difficult than the assessment of the effects of liberalisation on consumption, but some broad conclusions can be drawn.

An initial approach that can be adopted is to look at the costs of producing paddy relative to the saving in foreign exchange. This is the approach adopted by Edirisinghe in his 1991 paper. In that study he looked at the cost of producing paddy in six areas. These were chosen to represent different water regimes (major irrigation, minor irrigation and rainfed), two types of planting (broadcasting and transplanting) and three different sources of farm power for land preparation and threshing (4-wheel tractors, 2-wheel tractors and buffaloes).

Edirisinghe estimated the ratios of costs to foreign exchange saved for rice production in each of the six areas. The results are summarised in table 5.14.

Table 5.14:
Ratios of costs to foreign exchange saved for paddy production in Sri Lanka (Maha season 1989/90)

		Cost Ratios		
	Yield (MT/ha)	Rehabilitation irrigation	New irrigation	Rainfed
Kalawewa	5.0	0.9	1.3	
Polonnaruwa	4.1	1.1	1.7	
Hambantota	4.1	1.1	1.8	
Anuradhapura	2.9	1.3		
Kurunegala	3.3	1.5		
Kegalle	2.6	1.6		1.6

Source: Edirisinghe 1991, 95

In table 5.14, costs are calculated on the basis of the market price of labour and the foreign exchange saving is calculated on the basis of the official exchange rate (Rs 37 to the US$ at the time of Edirisinghe's study).

The Edirisinghe results would seem to indicate that the cut-off yield for 'international efficiency' (if market wages and the official exchange rate are used) was over 4 MT per ha. using rehabilitated irrigation. This conclusion is derived from the above table which was based on border-equivalents of the farm-gate price as shown in table 5.15 (the table also shows the actual farm-gate prices in operation).

Thus the 'border equivalent' farm-gate price used by Edirisinghe was Rs 6.0/kg. This is equivalent to a domestic wholesale price of about Rs 10/kg (allowing for farm to mill transport of Rs 0.3/kg of paddy, a conversion rate of 0.68 tons of rice per ton of paddy, and milling and transport-to-wholesale-market costs of about Rs 0.8/kg of rice - see Edirisinghe 1991, 115).

Table 5.15:
Border-equivalent and actual farm-gate prices used by Edirisinghe's study

District	Farm-gate prices	
	Border price equivalent (Rs/kg)	Actual (Rs/kg)
Kalawewa	6.0	6.9
Polonnaruwa	5.9	6.9
Hambantota	6.5	7.6
Anuradhapura	5.9	6.9
Kurunegala	6.0	7.7
Kegalle	5.9	7.8
Averages	6.0	7.3

Source: Edirisinghe 1991, 111-116

As stated earlier, this (Rs 10/kg) happens to be slightly above the wholesale price equivalent of rice based on the FOB price (US$255 per MT) forecast by the World Bank for the year 2000 (in 1990 prices), but discounted by 20% to account for quality differences. Thus Edirisinghe's cost figures suggest that at market prices of labour and at official exchange rates, rice (paddy) production is only likely to be competitive with imports for yields of above 4 MT per hectare.

However, it is sensible to look at the production costs of paddy with labour valued at its opportunity cost (what alternative to rice it would produce) and with the exchange rate adjusted in accordance with the liberalisation of rice trade. Edirisinghe's study made some estimations of real cost ratios based on a shadow price of labour of 60% of the market wage and a premium of 10% on the exchange rate. The results are shown in table 5.16 below.

Table 5.16:
Ratios of real costs to (shadow) foreign exchange saved for paddy production in Sri Lanka (Maha season 1989/90)

District	Yield (MT/ha)	Real cost ratios		
		Rehabilitated irrigation	New irrigation	Rainfed
Kalawewa	5.0	0.7	1.1	
Polonnaruwa	4.1	0.7	1.3	
Hambantota	4.1	0.8	1.3	
Anuradhapura	2.9	1.0	-	
Kurunegala	3.3	1.1	-	
Kegalle	2.6	-		1.2

Source: Edirisinghe 1991, 95

Now we can see that the cut-off or break-even yield (assuming rehabilitation irrigation) falls from about 4 MT per hectare to about 3 MT per hectare. And if, with liberalisation, a 20% (rather than 10%) devaluation is assumed, then the cut-off or break-even yield falls to about 2.2 MT per hectare (calculated on the basis of Edirisinghe 1991, 151).

Thus, and perhaps not surprisingly, the break-even yield is very sensitive to the valuation of labour and to the assumed devaluation following liberalisation. The results of this senstitivity analysis are as follows:

Assumptions		Break-even yield
Labour valuation	Exchange rate	(MT per hectare)
Market wage	Official	4.0
60% of market wage	Premium of 10%	3.0
60% of market wage	Premium of 20%	2.2

(Based on Edirisinghe 1991)

What proportion of total paddy production falls below these cut-off or break-even yields? Appendix VII by David Dunham of the Institute of Policy Studies gives some indications. According to that appendix, over 60% of paddy production would be jeopardised with a break-even yield of 4 MT/ha. With a break-even yield of 3 MT/ha., something like a third of production would be at risk, whereas with a 2 MT/ha threshold about 15% of production would be at risk. The lowest yielding areas are in the south of the country (Galle and Matara Districts), in the areas surrounding Greater Colombo (Colombo District itself and Kalutara and Gampaha Districts) and in Puttalam. As Dunham puts it in Appendix VII, there are some signs of alternative crops emerging in the latter area, the second group could be expected to gain from their proximity to the capital, but the south could be expected to emerge as a source of some concern.

Clearly the complete liberalisation of the rice trade is politically and economically out of the question. If this is accepted, what level of protection for paddy over the next 5 to 10 years is desirable in Sri Lanka?

One approach to answering this question is to look at the relationship between labour costs and paddy yields. In this case, the desirable tariff (NPC) level would be that which enables a paddy farmer to stay in production (as opposed to switching to another crop) as long as the net foreign exchange produced covers the shadow or opportunity cost of the labour. Unfortunately there is not enough information on the labour-to-yield relationship and the alternative opportunities to calculate this 'desirable' tariff.

However, another approach can be adopted which is to ask what the tariff should be to give a subsidy on labour or income of about 40% - that is the difference between the market valuation of labour and a 60% valuation. The figures from which this can be derived are given in table 5.17.

As the table shows, at the future forecast price of rice (in 1990 terms) of US$255 per MT (FOB 5% Thai), the farm-gate equivalent price is Rs 5.6/kg. This gives a gross revenue of Rs 18,900 per hectare at the average paddy yield in Sri Lanka for recent years of 3.4 MT/ha (see table 5.7). After deducting traded inputs of Rs 5,400/ha. this gives 'net foreign exchange earnings' of Rs 13,500/ha. After deducting interest charges, and other non-traded, non-labour costs, the incomes to labour and rent are the residual of about Rs 10,000/hectare. Assuming the rent payable is a quarter of this, the incomes to labour are about Rs 7,500/hectare.

Table 5.17:
Revenue from and Costs of Rice Production

Item	Unit	Value
Future FOB price of rice (5% Thai)	US$/MT	255
- less 20% quality discount		51
- plus freight costs		12
Future CIF price (at 1990 prices)		216
Future CIF price (at 1990 prices and exchange rate of Rs 40 per US$)	Rs/kg	8.6
Port charges and importer's margin		1.0
Border-equivalent wholesale price - rice		9.6
Border-equivalent wholesale price - paddy		6.6
Transport/milling costs (per kg of paddy)		1.0
Farm-gate price of paddy		5.6
Gross revenue at a yield of 3.4 MT/ha	Rs'000/ha	18.9
Traded inputs (see Edirisinghe 1991, 159)		5.4
Net 'foreign exchange earnings' and incomes to non-traded factors with no protection		13.5
Irrigation fee and interest charges		1.9
Other non-labour, non-traded costs (inc. seeds) (see Edirisinghe 1991, 158)		1.5
Net incomes to labour and rent		10.1
Rent (25% of net incomes)		2.5
Net incomes to labour		7.6

The tariff needed to give a subsidy to labour incomes of about 40% can be calculated from table 5.17 to be 20%. Thus a nominal rate of protection on rice of 20% gives a subsidy to labour incomes of approximately 40% (or a third if estimated on the incomes **with** the protection). Clearly these calculations are crude and more data are needed. This figure of 20% is merely indicative.

However, it seems clear that paddy producers will need to be protected in the future and the above gives some ideas and indications of the levels of protection necessary.

6. Wheat and wheat flour[1]

6.1 Protection of wheat and wheat flour in Sri Lanka

Over the past 40 years, the annual consumption of wheat flour in Sri Lanka has averaged 29 kgs per person with no striking upward or downward trend. As can be seen from table 6.1 below, from the early 1950s through to the 1980s, most of the flour was imported, but since the early 1980s, flour has been milled from imported wheat. Agro-climatic conditions in Sri Lanka are not suitable for wheat cultivation and the production of wheat in Sri Lanka is negligible.

Table 6.1:
Imports of flour and wheat (1952-1991 - annual averages)

5-year period	Wheat Imports ('000MT)	Flour Imports ('000MT)	Flour availability (a)		
			-total ('000MT)	Popn (mn)	-per capita (kgs)
1952-56	0	229	229	8.4	27
1957-61	0	209	209	9.6	22
1962-66	0	235	235	10.9	22
1967-71	24	321	339	12.2	28
1972-76	85	399	462	13.6	34
1977-81	202	402	551	14.7	37
1982-86	598	11	454	15.7	29
1987-91	617	44	501	16.9	30
Simple average of 5-year averages					29

(a) Based on the average population over the 5 year period using a conversion rate of wheat to flour of about 74%

Source: Borsdorf 1993, 77

In the late 1970s, an agreement was signed between the Government of Sri Lanka and Prima, a Singapore-based company, for flour milling. Details of that agreement are given later in this section but as table 6.1 shows, following that agreement through the 1980s, imports of flour have been relatively small.

In the 1980s, wheat provided between 10% and 15% of total calorie intake in Sri Lanka (see Jiron 1987, 13, Statistical Abstract 1991 and USAID 1990). In 1986/87, expenditure on flour (and bread) was about 7% of total consumer expenditure on food (see Central Bank of Sri Lanka, 1990, Table 4.1). This compares with rice which provides over 40% of calories and absorbs about 25% of food expenditure.

1. A useful source of information for this section is a report prepared by Roe Borsdorf for USAID in February 1993 (see Borsdorf, 1993). This has been supplemented by the Laursen study (Laursen 1993) and by trade interviews.

Intervention through both the US and Sri Lankan governments in the importing of wheat and in the production and distribution of wheat flour is considerable.

US intervention through aid

The US government intervenes through Public Law 480 (PL480). The US foreign assistance programme to Sri Lanka has included PL480 assistance under Titles I and II since the 1950s. Since 1991, when US food assistance legislation was completely overhauled, Title III has been the main PL480 programme of assistance to Sri Lanka. Over the period 1965-1980, donor-assisted imports accounted for roughly 36% of all wheat imports, between 1980 and 1992 for 45%, and between 1990 to 1992 for about 35% (calculated from Borsdorf 1993, Appendix VI). The C and F cost of this PL480 wheat between 1990 and 1992 was Rs 4,300 bn or about Rs 6/kg.

The Title III agreement comes with strings attached. The wheat has to be transported in US ships but there are also strings attached to the provision and use of the funds. Under title III the wheat is a grant to the Sri Lankan government, but it is delivered to the state-owned CWE and paid for by the CWE at prices similar to those of commercial imports. The amount paid by the CWE for PL480 imports is placed in a special account at the Central Bank and 10% is transferred immediately to a USAID account for the use of NGOs in association with USAID. The balance is made available for the support of Ministries and activities jointly determined by USAID and the Government of Sri Lanka.

Of the total counterpart funds generated from Title III wheat sales, 43% in 1991 and 30% in 1992 were used to support the Poor Relief Food Stamp Programme (PRFSP) - one of the major poverty relief programmes in Sri Lanka. These counterpart funds financed about 5% of the total PRFSP expenditures in 1991 and 1992, this food stamp income in turn providing about 10% of the total income of the poorest 20% of households in 1990/91 (Rassas et al 1993, 12).

The "strings" attached (list of reform measures supported by the Title III agreement) have recently included:

(i) the implementation of a plan to restructure and privatise the Ceylon Fisheries Harbours Corporation;
(ii) implementation of an extensive survey and land titling programme;
(iii) improving plant quarantine procedures;
(iv) phasing out export taxes on tea, rubber and coconut;
(v) liberalisation of food imports and trade;
(vi) restructuring the Agricultural Insurance Board to reduce operating deficits and improve services to farmers; and
(vii) expanding private sector participation in the agricultural sector.

Thus the Title III agreement incorporates specific policy reform measures which are broadly intended to reduce the role of the state and increase the role of the private

sector in agriculture. The implementation of the programme is discussed at quarterly review meetings between USAID and Sri Lankan Government officials.

By contrast, Title I is now a relatively small concessional loan (not grant) programme administered by the US Department of Agriculture (USDA) with relatively little policy conditionality.

Thus, to recap - the PL480 Title III aid comes with strings attached even though it is provided to Sri Lanka as a grant. Does this mean that it disrupts the local food market? USAID claims not. The wheat is imported and provided to the Government of Sri Lanka as a grant but is sold to the CWE at commercial import prices. Thus, whether and to what extent the wheat imports disrupt the food (especially the rice) market is largely under the control of the Government of Sri Lanka. This is especially so since the wheat and wheat flour markets in Sri Lanka are heavily controlled by the Government, with the Prima agreement at centre stage.

Intervention by the Government of Sri Lanka (GoSL)

The importing of wheat and the distribution of flour is a government monopoly operated by the CWE, a government-owned enterprise, with the Food Commissioner's Department operating as a sub-contractor.[2] In addition to making recommendations on licences for the import of wheat and wheat flour to the Controller of Imports and Exports, the CWE also maintains a buffer stock, equivalent to three months of national flour consumption.

Wheat is delivered to the Port of Trincomalee for milling by Prima Ceylon Ltd (Prima), a privately-owned flour milling complex, which is a subsidiary of Prima Flour Mills Ltd, Singapore. Under a 20 year contract (which began in 1979/80) with the Government of Sri Lanka (GoSL), and which has been extended for a further five years to 2004 (see PTC 1993, 12), Prima is guaranteed an annual minimum of 435,000 MT of wheat for milling. Prima has 5 mills with a combined capacity of 3,200 MT per day (giving an annual capacity of over 1 mn MT a year). Prima has silo storage capacity for 120,000 MT of wheat and mill feeds (Borsdorf 1993, 3, 4).

Prima's contract with the GoSL specifies that the GoSL will procure, transport and deliver wheat and flour packaging material to the mill. Prima's responsibility is to mill the wheat into flour at an extraction rate of 74%. The milled flour is bagged in 67 kg jute bags and 50 kg polythene bags and is then turned over to the GoSL for distribution. The Food Commissioner's Department (FCD) acts as the wholesale agent of the CWE. The FCD arranges transport from the Prima mill to FCD storage facilities. From these storage facilities flour is purchased by some 300 Multi-Purpose Cooperative Societies (MPCSs) throughout the country. Borsdorf states that the sale of flour supports the MPCSs in as much as they derive most of their income from the sale of flour (see Borsdorf 1993, 36). From this stage flour enters into the bakery, hotels, restaurants and retail store system.

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2 The wheat and flour monopoly was under the Food Commissioner until 1989/90 - see Borsdorf 1993, 80.

Ownership of the wheat and the flour milled from the wheat remains with the CWE through to the MPCSs. In his study, Borsdorf states that the CWE prepares an annual procurement plan which goes through the Ministry of Trade and Commerce, the Ministry of Finance and the Cabinet (Borsdorf 1993, 5). The Purchasing Committee of the CWE then calls for tenders for wheat. The CWE receives payment from the MPCSs or other agencies for flour purchased at the FCD warehouses or mill door. The FCD acts only as a physical storage and distribution contractor to the CWE and in 1992 was paid an allowance of Rs 1.28/kg for distributing the flour (Rs 0.93/kg in 1989).

The contract with Prima provides that Prima will retain the wheat bran and other by-products as payment for milling. Bran and mill feeds are sold by Prima as animal feed ingredients.

A number of questions arise in the context of this protectionism and intervention. These are:

(i) what are the levels of nominal and effective protection for flour in Sri Lanka?
(ii) is the Prima contract beneficial to Sri Lanka and, if not, can it and should it be re-negotiated?
(iii) if the Prima contract should or has to continue, what policies should be adopted for the importing of wheat, the importing of flour, and the processing of wheat in excess of the contractual amounts agreed with Prima?; should the domestic production and distribution of wheat flour continue to be so tightly controlled?

(i) is considered in the next section, while section 6.3 considers the questions under (ii) and (iii).

6.2 Protection on flour in Sri Lanka

What has been the price of flour in the domestic market and how has this compared with the border price? Here reliance has been placed on the work of Borsdorf and Laursen who both derived flour prices by applying a 74% conversion factor to the wheat price. No price comparisons have been made directly with world prices of flour, and in so far as the 74% conversion rate is low, then the derived world price will be too low and the protection levels will be correspondingly overstated, but probably not by much.[3]

Table 6.2 below shows the NPCs given by the Laursen study for the period from 1985 to 1991 with the figures updated for 1992. There is agreement between Laursen's figures and those on page 93 of Borsdorf for the wheat import price for 1985, 1986, 1989 and 1991 but not for 1987, 1988 and 1990. Nor do the two sets of figures agree with the supply station prices for every year. Table 6.2 shows the figures given by Laursen and implied by Borsdorf. It should be noted that prices at both the

3. As already noted in section 4 of this report, the Presidential Tariff Commission's study of protection in the manufacturing sector in 1988 (PTC 1991) did not include the flour milling industry in its coverage.

wholesale and retail points were decontrolled from October 1992 (Borsdorf 1993, xii); and also that the protection levels may vary according to the location of consumption, though again this variation would probably be small.

As far as the port charges etc. are concerned, there is some agreement between the figures in Borsdorf and Laursen. In Borsdorf's report these charges averaged just under Rs 1/kg of flour-equivalent between 1987 and 1991 (see Borsdorf 1993, 15). The importing costs given in Laursen (see table 6.2) are broadly similar - between Rs 0.6 and Rs 1.0/kg.

Table 6.2:
Protection on Flour - 1985-1991

	+/-	1985	1986	1987	1988	1989	1990	1991	Ave. 1985-91
1. Laursen's figures									
CIF (Rs/kg - wheat grain)		4.2	3.5	3.3	4.6	6.8	6.6	4.9	
(Grain/flour: 74%)		5.6	4.7	4.5	6.2	9.2	8.9	6.7	
Port charges,									
handling, transport	+	0.2	0.2	0.3	0.3	0.3	0.4	0.4	
Importer's margin	+	0.4	0.3	0.3	0.4	0.6	0.6	0.5	
Border price (wholesale									
equivalent)	=	6.2	5.3	5.1	6.9	10.2	9.9	7.6	
Domestic wholesale									
(supply station) price		7.3	7.3	7.3	7.3	8.0	12.7	11.5	
NPC		1.2	1.4	1.4	1.1	0.8	1.3	1.5	1.2
(**Source:** Laursen 1993, 3)									
2. Borsdorf's figures									
Border price (wholesale									
equivalent)		6.2	5.3	5.9	8.3	10.2	10.4	7.6	
Domestic wholesale price		7.3	7.3	7.3	7.3	8.3	12.9	11.5	
NPC		1.2	1.4	1.2	0.9	0.8	1.2	1.5	1.1
(**Source:** calculated from Borsdorf 1993, 93)									
3. Quoted prices for wheat									
Wheat price(US$/MT)-FOB		173	161	na	180	201	156	143	
Exchange rate (Rs/US$)		27	29	31	33	40	40	43	
Wheat price(Rs/kg)-FOB		4.7	4.7	na	5.9	8.0	6.2	6.1	
Ratio of quoted FOB price									
- to Laursen's CIF price		1.1	1.3		1.3	1.2	0.9	1.2	
- to Borsdorf's CIF price		1.1	1.3		1.1	1.2	0.9	1.2	

Source : Wheat price - Canadian No. 1 Western Red Spring FOB (World Bank 1993, vi and World Bank 1988, 55)
Exchange rates - CBofSL Annual Report 1992, table 55.

Thus as table 6.2 shows, there is reasonable agreement between the NPCs derived from the Laursen and Borsdorf sets of figures. The average NPC for 1985-91 is 1.2 using Laursen's figures, and 1.1 using Borsdorf's figures. In both sets of figures

the variation in the NPC is considerable from year to year with the stability of the domestic wholesale price being greater than the import price.[4]

Thus the Laursen and Borsdorf data suggest that the domestic wholesale price of flour has been an average of about 10% or 20% above the border price equivalent between 1985 and 1991. However, it is difficult to see how much of this 'excess' has accrued to the government in the form of import duties or profits to the CWE (or to the Food Commissioner's Department). As far as import duties are concerned, it would appear from page 15 of Borsdorf 1993 that no duties were paid on wheat imports in 1987, 1988 and 1989 but that that the import duty paid on wheat in 1990 was about 2% and in 1991 about 26% of the CIF price, as shown in table 6.3 below.[5]

Table 6.3:
Price profile for flour in Sri Lanka - 1991

	+/-	Rs/kg	References in Borsdorf 1993
CIF price of wheat		5.0	page 93
Conversion rate		74%	-
CIF price of wheat (flour equivalent)		6.7	pages 15 and 86
Import charges - duties	+	1.8	page 15
- other	+	0.3	page 15
Distribution	+	0.9	page 86
Packing material	+	0.5	page 86
Interest and insurance	+	0.5	page 86
Total direct costs	=	1.9	-
Overheads	+	0.3	page 86
Total	=	11.0	-
Price at supply station		11.5	page 27
Average wholesale price		11.8	page 26
Average retail price		12.4	page 26

As can be seen from table 6.2, the Laursen paper compares the price at the supply station with the border price. In 1991, the border price equivalent was Rs 7.6/kg (see table 6.2). The domestic price to the supply station was about Rs 11.5/kg or about 50% above the border price. Of the difference of Rs 4.9/kg, less than half (Rs 2.3/kg) would seem to accrue to the government in the form of import duties and CWE profits (see Borsdorf 1993, 61,83), although the CWE did make a small profit (about 2% of sales) on wheat/flour in 1989-91. In the same 3 years (1989-91) stock losses of the CWE amounted to over 4% of sales (see Borsdorf 1993, 83), while those of the Food Commissioner's Department were also about 4% (Borsdorf 1993, 17). Hence, total

4. Note that there are considerable differences between the annual CIF prices of wheat into Sri Lanka and the FOB prices for Canadian Western Red Spring wheat, and these differences vary considerably from year to year (see table 6.2). No explanation for this variation has been obtained by this study.

5. In 1992 the import duty averaged 10% of the CIF price.

stock losses in the system amounted to approximately 8% which Borsdorf considered excessive (see Borsdorf 1993, 11).

Therefore, we have about Rs 2.6/kg of the 1991 'excess' consisting of distribution and packing costs. In this sense, it seems that the Laursen border price is not equivalent to the domestic price. Packing costs should be included in the border price equivalent: in Malaysia in 1987, packing costs were Rs 0.4/kg, agreeing with Borsdorf's figure of about Rs 0.4/kg of flour (see Borsdorf 1993, 15). This adjustment reduces the average nominal protection to about 1.1 between 1985 and 1991 (see table 6.4).

Table 6.4:
Protection on Flour (adjusted) - 1985-1991

	+/-	1985	1986	1987	1988	1989	1990	1991	Ave. 1985-91
1. Laursen's figures adjusted for packing cost									
Border price (wholesale									
equivalent as in table 6.2)	=	6.2	5.3	5.1	6.9	10.2	9.9	7.6	
Flour packing cost	+	0.4	0.4	0.4	0.5	0.5	0.5	0.6	
Adjusted border price	=	6.6	5.7	5.5	7.4	10.7	10.4	8.2	
Domestic wholesale									
(supply station) price		7.3	7.3	7.3	7.3	8.0	12.7	11.5	
NPC		1.1	1.3	1.3	1.0	0.7	1.2	1.4	1.1
2. Borsdorf's figures adjusted for packing cost									
Border price (wholesale									
equivalent as in table 6.2)	=	6.2	5.3	5.9	8.3	10.2	10.4	7.6	
Flour packing cost	+	0.4	0.4	0.4	0.5	0.5	0.5	0.6	
Adjusted border price	=	6.6	5.7	6.3	8.8	10.7	10.9	8.2	
Domestic wholesale price		7.3	7.3	7.3	7.3	8.3	12.9	11.5	
NPC		1.1	1.3	1.2	0.8	0.8	1.2	1.4	1.1

Thus the domestic price of flour has been an average of about 10% above the border price equivalent between 1985 and 1991. It is difficult to see what has determined policy on the levying of import duty on wheat. The import duty does not seem to have been imposed to maintain a constant ratio between the rice and flour wholesale prices (see table 6.5).

Table 6.5:
Domestic Wholesale Prices of Rice and Flour 1985-1991

	Rs./kg						
	1985	1986	1987	1988	1989	1990	1991
Rice	7.1	7.2	7.7	8.4	11.4	14.1	14.2
Flour	7.3	7.3	7.3	7.3	8.0	12.7	11.5
Ratio	1.0	1.0	1.1	1.2	1.4	1.1	1.2

Source: Laursen (1993)

6.3 Policy issues on wheat and flour

The contract with Prima

There are a number of trade policy issues connected with wheat and wheat flour. A sensible starting point is the Prima contract since the wheat and flour import and production regimes revolve around this agreement.

The first question is: can and should the contract be renegotiated? This question requires much more investigation than has been possible in this report. Clearly, part of the answer lies in whether the contract can be legally renegotiated and whether it benefits Sri Lanka. In his report, Borsdorf felt that it did. On page 10 of his report he argued that the payment to Prima for milling (the bran and residual proceeds) provides a reasonable contract for Sri Lanka. Borsdorf claimed that "this agreement is considered not to be cost excessive since most flour mills rely on the sale of bran, mill feeds and flour overrun to produce the milling margin necessary to cover operating costs" (Borsdorf 1993, 10). This view was backed by the PTC in a 1993 report when it stated that by processing wheat at Prima Mills, the net saving to the Government is US$20/MT. However, from an analysis of flour milling costs in Malaysia in the late 1980s, it seems that the net profits at Prima must be at least 20% on the capital employed - based on costs (in 1987 prices and converted from Malaysian ringgit to Sri Lankan rupees) of milling of Rs 0.8/kg of wheat input and a sales revenue of by-products of about Rs 1.1/kg of wheat inputs, giving a net profit of Rs 0.3/kg on a capital asset value of about Rs 1.5 per kg of annual wheat input. These figures are only indicative and need to be checked for a variety of flour mills, but it seems sensible to consider the renegotiation of a contract which has granted a private company a monopoly of flour milling for 25 years.

Other policy issues on wheat and wheat flour

If it is decided <u>not</u> to consider the renegotiating the contract with Prima, there are still a number of issues which are worthy of attention.

(i) First, if the contract with Prima specifies the milling of 435,000 MT of wheat a year, it is worth considering a number of alternatives for the provision of the 'excess' in the domestic market of about 200,000 to 250,000 MTs of wheat (or about 150,000 to 185,000 MT of flour). Could and should imports of flour be liberalised - if necessary to be subject to an equivalent ad valorem duty to that imposed on rice? Some liberalisation was announced in October 1993 when private traders were invited to tender for the distribution of wheat flour. Under this arrangement, the traders would distribute flour in particular districts, renting stores from the FCD. Whether this goes far enough in liberalisation depends on an assessment of the benefits of breaking up the CWE/Food Commissioner's monopoly of distribution.

As already pointed out, in his report, Borsdorf considered that the losses in flour distribution were excessive (see Borsdorf 1993, 11). It seems that the FC is given a loss allowance of 1.5% of sales but that in fact the

losses of the FC are higher than this - as high as 5.2% in 1986 and averaging 2.9% in 1989 and 1990 (see Borsdorf 1993, table 4 page 17, but also see page 40 where the loss is stated to be 4%). According to Borsdorf these losses are far too high and should be about 1% or about Rs 0.11/kg of flour (see Borsdorf 1993, 11). Most of the excess is probably pilferage, according to Borsdorf (1993, 11). The excess loss amounted to something like Rs 0.4/kg in 1990 and 1991 (see pages 12 and 16) and thus the total is equivalent to:

Rs 0.4/kg x 1000 (kgs/ton) x 525,000 MT = Rs. 210 Mn per year

Stock losses of the CWE seem to be additional to this - see Borsdorf (1993, 17 and 83). Borsdorf also pointed out that transport costs seemed to be excessive (Borsdorf 1993, 11).

Thus, opening up the flour distribution system to competition would seem to offer the possibility of reducing distribution costs.

(ii) Could and should a second milling facility be encouraged to locate on the West coast to service the Western and Southern Provinces? Clearly, the economic sense of such a development depends on the trade-off between the economies of scale from milling at one (Prima) site as against the benefits from not only reduced transport costs (possibly about Rs 0.2 or Rs 0.3/kg of flour - see Borsdorf 1993, 81) but also from competition resulting from a second mill. There have been trade complaints that Prima cannot supply speciality flours, but Borsdorf claims that speciality flours can be handled by Prima (see Borsdorf 1993, 44).

(iii) Could and should wheat imports be liberalised? Again there have been recent (0ctober 1993) announcements of liberalisation in this field with tenders to supply wheat to the Prima factory being invited from the private sector. The argument that is used for not liberalising this trade is that Prima has limited storage capacity for wheat at Trincomalee and that therefore the supply of wheat has to be centrally coordinated.

(iv) Finally, it should be noted that a buffer stock of wheat and wheat flour is maintained, but it should be emphasised that the arrangements for this can be handled separately from the issue of protectionism; if necessary tenders for maintaining the buffer stock could be invited. In his report, Borsdorf pointed out that two-month buffer stocks of flour and wheat are supposed to be maintained (Borsdorf 1993, 5) but, in reality, only a 1.5-month buffer stock of wheat and a three-week buffer stock of flour have been kept. (see Borsdorf 1993, 35-36, 39). This, Borsdorf claimed, was not justified and he suggested that the wheat buffer stock should be expanded at the expense of the flour stock since it is easier to store wheat than flour (Borsdorf 1993, xiii and 35). Borsdorf argued that investment in additional storage for wheat was needed and that it would seem to offer a high financial return (see Borsdorf 1993, 40).

7. Subsidiary food crops (SFCs)

7.1 SFCs and agricultural diversification

Agricultural diversification has been a policy priority in Sri Lanka since 1984 with the publication of the National Agriculture, Food and Nutrition Strategy. One explanation for this rise in interest has been the impending self-sufficiency in rice production. As Dunham has put it:

> "For reasons of quality, Sri Lankan rice is unable to compete effectively in export markets; real returns in the 1980s have been stagnant, and when supply eventually exceeds demand producer prices will fall. It therefore seemed sensible to encourage a shift away from paddy towards other crops - especially if they replaced imports or secured export earnings" (Dunham 1992 1,2).

In Sri Lanka there have been two approaches to agricultural diversification away from rice. One approach has emphasised the production of goods for export; the second has placed emphasis on the import-substituting production of food crops subsidiary to rice.

This section focusses on the latter and especially on the role of protection in stimulating or hindering the efficient production of SFCs in Sri Lanka, since this is the World Bank's concern which prompted this study.

Statistics on the SFCs in Sri Lanka are weak, but the Central Bank Annual Report 1992 (table 16) shows that in 1991 SFCs were planted on 204,000 has (the provisional figure for 1992 was 186,000 has). In terms of the GNP figures for Sri Lanka, SFCs are included in "other agricultural products" which in 1991 (1992) accounted for 56% (57%) of total agricultural GNP (see table 2, Central Bank of Sri Lanka Annual Report, 1992).

In terms of the value of gross output, the major SFCs are cassava, maize, chillies, red onions, potatoes, big onions and the pulses (green gram, black gram and cowpea). Table 7.1 shows the cultivation area, and gross output (by volume and value) of these crops.[1] The value of gross output has been estimated using producer prices. It should be noted that the Paddy Marketing Board operates a floor price scheme in respect of certain SFCs but these prices were below the average producer prices for 1990 used in the above table to value the gross output (Jiron 1987, 28 and Dunham 1992, 45).

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1 Red lentils (masoor dhal) are also a major crop in terms of consumption in Sri Lanka, but their domestic production appears to be very small.

Table 7.1:
Principal SFCs - Cultivation Area and Production

Crop	1	2	3	4	5	6	7	8	9	10	11	12
	Area cultivated ('000 ha)			Production ('000 MT)			Producer price (Rs./kg)			Value of gross output at producer prices (Rs Mn)		
	1988	1990	1992	1988	1990	1992	1988	1990	1992	1988	1990	1992
Manioc (Cassava)	32.0	(a)40.3	n.a.	489.2	(b)367.0	n.a.	3.2	4.4		1575		
Maize	50.4	47.9	42.0	70.6	63.9	46.9	3.5	6.1		246	390	
Dried Chillies	32.7	38.1	31.4	40.3	39.1	23.5	50.0	65.0	93.0	2016	2543	2186
Red Onions	11.0	8.5	8.2	113.6	74.0	87.0	10.8	18.8	21.2	1228	1389	1847
Ground nuts	12.5	11.7	9.6	11.9	9.7	9.8	10.4	15.7		124	152	
Soyabean	8.3	5.9	2.0	9.9	7.3	2.5	11.8	15.8		117	115	
Potatoes	6.6	7.7	5.3	78.2	84.3	45.0	16.2	22.0	31.8	1267	1855	1429
Big Onions	0.6	1.8	2.5	6.8	18.8	27.6	15.9	26.4		108	496	
Kurakkan (Finger Millet)	11.1	7.2	7.5	7.9	4.5	4.8	6.0	9.5		47	43	
Gingelly (Sesame)	17.5	17.7	10.8	9.0	7.3	9.4	9.2	15.1		83	110	
Sweet Potatoes	7.4	(a)11.6	n.a.	62.1	(b)74.2	n.a.	4.4	6.1		272		
Greengram	33.5	38.1	32.1	23.1	29.7	23.6	13.3	20.0		308	595	
Blackgram	18.2	17.8	8.8	13.2	7.4	6.3	10.7	12.8		141	95	
Cowpea	24.9	28.1	25.9	18.1	19.5	21.6	10.0	15.7		180	306	

Sources:
1-6 CBofSL AR 1992, Table 16
7, 8 ARTI Databank, Format 6: from Dunham 1992
7, 8, 9 Central Bank of SL Bulletin, July '93, Table 53, 54
Big Onion 7,8 from Laursen 1993, 6
(a) Statistical Abstract 1992, Table 57
(b) Statistical Abstract 1992, Table 85b
Notes:
10 derived from 4 x 7
11 derived from 5 x 8
12 derived from 6 x 9

Note that the cultivation and production data in table 7.1 do not exactly correspond with comparable data to be found in the 1988 Food Balance Sheet and the 1992 Statistical Abstract. In some cases, the differences are very large, as shown in table 7.2.

Table 7.2:
A Comparison of SFC Production Data

Crop	1990			
	Area Cultivated ('000 Hectares)		Production ('000 MT)	
	1	2	1	2
Manioc (Cassava)	32(1988)	40	489(1988)	367
Maize	48	30	64	34
Chillies	38	(d)29	39	n.a.
Red Onions	8	7	74	65
Big Onions	2	n.a.	19	
Ground nuts	12	9	10	5
Soyabean	6	n.a.	7	2
Potatoes	8	8	84	67
Kurakkan (Finger Millet)	7	10	5	(b)7
Gingelly (Sesame)	18	9	7	n.a.
Sweet Potatoes	7(1988)	12	62(1988)	74
Greengram	38	33	30	27
Blackgram	18	n.a.	7	n.a.
Cowpea	28	25	20	(a)23

Sources and Notes:

1 Figures from Central Bank Annual Report 1992, Table 16 (used in our Table 7.1)
2 Figures from Statistical Abstract 1992, Table 57 (Area Cultivated) and Table 85b (Production)
(a) Includes Dhal
(b) Includes Meneri
(c) Figure for all Onions
(d) Figure for Green Chillies
n.a. Figures Not Available

Because of uncertainties about the production data, there are obviously doubts about the share of SFC production in the value added of "other agriculture". Table 7.3 uses the Central Bank's data on gross output of SFCs for 1990 to estimate the value added. Table 7.3 suggests that the value added in SFC production was about 20% of that for "other agriculture" (including also fruit and other vegetables, sugar, milk, poultry and other livestock, "minor export crops", etc.) in 1990.

Table 7.3:
SFC Output and Value Added Compared with GNP

Crop	1990 Figures		
	1	2	3
	Value of Gross Output (Rs Bn)	Value Added as % of Gross Output	1990 Value Added (Rs Bn)
Manioc (Cassava)	1.6(1988)	(a)80	1.3(1988)
Dried Chillies	2.5	87	1.9
Red Onions	1.4	81	1.1
Potatoes	1.9	49	0.9
Big Onions	0.5	(a)80	0.4
Sweet Potatoes	0.3	(a)80	0.2
Pulses	1.0	87	0.9
Maize, Soyabean and Groundnuts	0.7	70	0.5
TOTAL SFCs	9.9	73	7.2
"Other Agriculture" 4	n.a.	n.a.	34.8
% of SFCs to "Other Agriculture"			21.0

Sources and Notes:
1 From Table 7.1
2 From Table 7.14 (FAO 1988)
3 From 1 x 2
4 From Central Bank Annual Report 1992, Table 2
a Figure estimated from Gleason 1990(Y),11

7.2 Protection on SFCs

Many of the SFCs are heavily protected with high (50%) import duties, but it is difficult to ascertain whether these are applied in practice or even exceeded because of licensing (see below). For this study the actual duty rates for all HS Codes with imports of more than Rs 10 mn were analysed for 1992 (Appendix V). Since for many of these SFCs, imports in 1992 were less than Rs 10 mn, the analysis did not cover most of this group (see table 7.4) (For duties in 1980 and 1986 see Jiron 1987, 21).

A number of SFCs (namely potatoes, red onions, big onions, black gram, chillies, and maize) are subject to import licences (see table 3.3) issued by the Controller of Imports and Exports. The possibility of both tariff redundancy and "tariff swamping" underlines the need for direct price comparisons in assessing the level of protection. Unfortunately, for most of the SFCs, direct price comparisons are not easy because of significant differences in quality and seasonal fluctuations in prices. Where possible, these factors have been taken into account.

Table 7.4:
Import Duties on SFCs into Sri Lanka - 1992

Product	Gazetted Duty Rates (as of 12/11/91) (%)	Actual Duty Rates (In 1992) (1) (%)
Maize		
(1005.1001; 1005.9001)	10	zero (2)
(1005.1009; 1005.9009)	50	zero (3)
Dried Chillies (0904.2)	10	10
Red Onions (0703.10.01)	10	n.a. (4)
Potatoes (0701.10)	10	5
Big Onions (0703.10.12)	10	10
Gram and Cowpea (0713.10.00; 0713.39.00)	50	47
Red Lentils (Masoor Dhal) (0713.40)	Rs 10/kg (35%)	30

Notes:
1 From 1992 Listing of HS Codes for all items over 10 Mn. Rs.
2 Imports under these headings were Rs. 223 Mn. in 1992
3 Imports under this heading in 1992 were Rs. 113 Mn.
4 Negligible imports

7.3 Protection and consumption

Jytte Laursen's work of 1993 has been used as the basis for this section, and where individual crops were not included in her study, data have been collected and analysed using a similar approach, namely comparing the import (CIF) price with an equivalent domestic producer or wholesale price. Thus, the NPCs are estimated for each of the major SFCs and weights are attached to them according to their importance in the consumption basket, in order to calculate an approximate average NPC for all the SFCs.[2]

Table 7.5 shows the approximate apparent consumption of SFCs using the value of output from table 7.1, and the values of imports and exports as shown in the External Trade Statistics. There are obviously problems with this data, as the prices available are not comparable in all cases, but it is sufficient to derive the approximate weighting of consumption expenditure.[3]

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2 Laursen's price comparisons were based on the ARTI databank which, it is believed, gives simple annual averages of prices, taking no account of the seasonal variations in the timing of sales by producers and of purchases by consumers.

3 For potatoes and maize in table 7.5, seed and animal feed trade are included as there is no distinction made in the domestic production figures. The HS codes for black gram, green gram, and cowpea seem to be a little confused as there is more than one code used - as well as those listed in table 7.5, 0713.31 is given for black and green gram in the Four Band Tariff codes, and 0713.39.01 has also been given for black gram; figures given in 7.5 include only 0713.10 and 0713.31 codes.

Table 7.5:
Production, Trade and Apparent Consumption of Principal SFCs

		H.S. Code	1	2	3	4	5	6	7	8
			Value of output at producer prices (Rs Mn.)		CIF Value of imports (Rs Mn.)		F.O.B Value of exports (Rs Mn.)		Apparent Consumption (Rs Mn.)	
			1990	1992	1990	1992	1990	1992	1990	1992
Manicc	a	0714.1	1565	n.a.	-	-	5	14	1560	n.a.
(Cassava)			(1988)							
Maize	b	1005	390		291	337	-	-	681	337
Chillies	c	0904.2	2543	2186	151	482	neg	4	2694	2664
Red Onions	d	0703.10.01	1389	1847	3	-	neg	neg	1392	1847
Ground nuts	e	12.02	152		neg	neg	neg	neg	152	0
Soyabean	f	1201.00	115		5	5	57	1	63	4
Potatoes	g	07.01	1855	1429	neg	22	3	2	1852	1429
Big Onions	h	0703.10.02	496		279	354	neg	neg	775	354
Sweet Potatoes	i	0714.02	272		-	neg	-	neg	272	0
			(1988)							
Greengram	j	0713.10.03	595				neg	neg		0
Blackgram	k	0713.10.01	95		28	21	58	-	966	0
Cowpea	l	0713.10.02	306				neg	-		0
Masoor Dhal (Red Lentils)	m	0713.40.01	neg	neg		1105	-	-		1105

Sources:
1 see table 7.1 (columns 11,12)
3, 4, 5, 6 from External Trade Statistics 1991, 1992
Notes:
Columns 3, 4, 5, 6 figures to the nearest Rs mn in current prices
neg = negligible (less than Rs mn 1)
"-" = None recorded
a and i figures for 1988 used directly assuming 1988 trade also negligible

Table 7.6 shows the consumption and production weights within the SFCs for 1990, calculated from table 7.5. As can be seen, the principal SFCs in terms of consumption are the same as those in production, plus red lentils.

Table 7.6:
Principal SFCs - Consumption and Production Weights 1990

Product	Approximate consumption weights	Approximate production weights
Manioc (Cassava)	14	16
Maize	6	4
Chillies	23	26
Red Onions	12	14
Ground nuts	1	2
Soyabean	1	1
Potatoes	16	19
Big Onions	7	5
Sweet Potatoes	2	3
Greengram	)	6
Blackgram	) 8	1
Cowpea	)	3
Masoor Dhal (Red Lentils)	10	0
Total *	100	100

Source and Notes:
Consumption weights calculated from 1990 figures of table 7.5 (col. 7)
- 1988 & 1992 used where 1990 data is unavailable
Production weights similarly calculated from table 7.5 (col. 1)
* Does not sum due to rounding

Price Comparisons - Manioc (Cassava)

No price comparisons have been carried out for manioc as it has not been possible, in the time available, to collect reliable data.

Price Comparisons - Maize

Table 7.7 shows price comparisons for maize for 1986 and 1988.

Table 7.7: Protection of Maize

	1985	1986	1987	1988	1989	1990	1991
1. FOB prices at Bangkok (US$/MT)		86.0		86.0			
2. Freight & Insurance		63.0		12.0			
3. CIF price (US$/MT)		149.0		98.0			
4. Exchange rate (Rs./US$)		28.5		30.0			
	(Rs./Kg.)						
5. CIF price		4.2		2.9			
6. Port charges, handling, transport and importer's margin (US$19.11/MT @ Rs28.5/US$)		0.5		0.3			
7. Border price equivalent at wholesale stage		4.7		3.2			
8. Domestic producer price		3.4		3.5			
9. NPC		0.7		1.1			

Source: For 1986 Jiron 1987, Annex I
Producer prices from the Dept. of Census & Statistics, ARTI 1992
For 1988, IBRD commodity price forecast Jan 1988 quoted in FAO 1988 working papers

The average NPC for the years shown is 0.9 which suggests that maize itself is not protected, but it should be noted that maize for animal feed is probably not accounted for in these price comparisons. Furthermore, it seems that there are significant quality variations for maize. For these reasons, it seems safer to take the gazetted duty rate (10%) as the nominal protection rate.

Price Comparisons - Chillies

Table 7.8 shows price comparisons for chillies given in Laursen for 1985-1991.

Table 7.8:
Protection of Chillies

	1985	1986	1987	1988	1989	1990	1991
1. World price (US$/MT)	703.0	812.0	938.0	952.0	1036.0	1443.0	1459.0
2. Insurance and freight (5% of 1)	35.2	40.6	46.9	47.6	51.8	72.2	73.0
3. Exchange rate (Rs./US$)	27.4	28.5	30.8	33.0	40.0	40.2	42.6
	(Rs./Kg)						
4. Derived CIF price	20.2	24.3	30.3	33.0	43.5	61.0	65.3
5. Port charges, handling, transport and importer's margin	1.7	1.9	0.4	2.6	3.4	4.7	5.0
6. Border price equivalent at wholesale stage	21.9	26.2	32.7	35.6	46.9	65.6	70.3
7. Domestic wholesale price	45.4	35.1	42.9	61.0	68.4	75.9	109.9
8. NPC	2.1	1.3	1.3	1.7	1.5	1.2	1.6

Source: Laursen 1993, 6

The average NPC for these years was about 1.5 but it should be noted that the domestic wholesale prices given in row 7 (for Grade 1 chillies, ARTI Commodity Prices 1992, 19) are significantly (about 25%) higher than those given in the Statistical Abstract 1992 (table 122). If these lower prices are assumed then the average NPC on chillies falls to about 1.1 or 1.2. No quality adjustment is made in these figures between imported and domestic chillies, but according to the CWE, local chillies are of a higher quality, selling for approximately 27% more (currently 140 Rs/kg rather than 110 Rs/kg) in domestic markets. This quality adjustment, even using the Laursen prices, would reduce the NPC to 1.1.

Price Comparisons - Red Onions

In spite of repeated attempts, it has proved impossible to obtain equivalent import prices for comparison with domestic prices of red onions, which in recent years have only occasionally been imported in negligible quantities. Domestic production has apparently been sufficient and licences have seldom been granted. The seasonality and quality differences in red onions make comparisons difficult.

A paper from ARTI (ARTI 1990) gives some SFCs' NPRs including that for red onions. The latter is given as 4.8 for 1990. However, there are problems with using this figure. The NPC given in the same paper for chillies (2.6) is quite different from that given by Laursen for the same year (1.2). On the other hand, the ARTI NPC for big onions (2.3) is closer to that of Laursen for 1990 (2.6). Unfortunately, the ARTI paper does not give the detailed figures from which this NPC estimate for red onions is derived. In the absence of any other estimates, the ARTI figure has been used, but its limitations must be recognised.

Price Comparisons - Potatoes

Table 7.9 shows the price comparisons for potatoes.

Table 7.9:
Protection of Potatoes

	1985	1986	1987	1988	1989	1990	1991
1.World price (fob US$/MT)	148.4	175.0	209.5	207.5	240.8	271.4	261.5
2. Insurance and freight (5% of 1)	7.4	8.8	10.5	10.4	12.0	13.6	13.1
3. Exchange rate (Rs./US$)	27.4	28.5	30.8	33.0	40.0	40.2	42.6
	(Rs./Kg)						
4. Derived CIF price	4.3	5.2	6.8	7.2	10.1	11.5	11.7
5. Port charges, handling, transport and importer's margin	0.5	0.6	0.7	0.8	1.0	1.2	1.3
6. Border price equivalent at wholesale stage	4.8	5.8	7.5	8.0	11.2	12.7	13.0
7. Domestic wholesale price	12.9	14.5	12.8	18.0	18.0	25.2	37.2
8. NPC	2.7	2.5	1.7	2.3	1.6	2.0	2.9

Source: Laursen 1993, 6

Once again, as for chillies, the domestic wholesale prices given in the Statistical Abstract are lower than those in row 7 in the table above. For the years 1987-1991, the average wholesale price in the Statistical Abstract was Rs 19.8/kg compared to an average for the same years in Laursen of Rs 22.2/kg. The Laursen price is therefore approximately 10% higher than that of the Statistical Abstract. If the lower price is assumed, the average NPC for 1987-1991 falls to 1.9 instead of 2.1. Thus, whichever wholesale price is used, the protection of potatoes seems to be very high.[4]

4 No distinction is made here between seed potatoes and others.

Price Comparisons - Big Onions

Table 7.10 shows the price comparisons for big onions.

Table 7.10:
Protection of Big Onions

	1985	1986	1987	1988	1989	1990	1991
	(Rs./Kg.)						
1. CIF price	5.4	6.9	7.4	7.4	10.9	10.0	13.5
2. Quality adjustment (-10%)	-0.5	-0.7	-0.7	-0.7	-1.1	-1.0	-1.4
3. Port charges,handling,transport and importer's margin	0.6	0.7	0.3	0.3	0.3	0.4	0.4
4. Border price equivalent at wholesale stage	5.4	6.8	7.0	7.0	10.1	9.4	12.6
5. Domestic wholesale price	10.0	13.5	15.2	15.9	18.8	26.4	29.4
6. NPC	1.9	2.0	2.1	2.1	1.7	2.6	2.2

Source: Laursen 1993, 6

The average NPC for big onions from 1985 to 1991 is 2.0. This was also the NPC for 1992 based on a CIF price of Rs 10.8/kg (World Bank Resident Representative's office), a quality adjustment of 10% and a domestic wholesale price of Rs 20.0/kg. The accuracy of this 10% quality adjustment has been independently confirmed by the CWE.

Price Comparisons - Red Lentils

Table 7.11 shows the price comparisons for red lentils (masoor dhal).

Table 7.11
Protection of Red Lentils (Masoor Dhal)

	1985	1986	1987	1988	1989	1990	1991
	(Rs./Kg)						
1. CIF price	19.0	19.1	12.2	11.6	12.0	20.0	24.9
2. Port charges, handling, transport and importer's margin	1.6	1.6	1.1	1.1	1.2	1.8	2.2
3. Border price equivalent at wholesale stage	20.6	20.7	13.4	12.8	13.2	21.8	27.1
4. Domestic wholesale price	17.4	20.6	18.2	22.4	29.1	30.9	29.5
5. NPC	0.9	1.0	1.4	1.8	2.2	1.4	1.1

Source : Laursen 1993, 6
See also Jiron, 1987, Annex II

The average NPC for 1985 to 1991 was 1.4. In this case the domestic wholesale prices shown in the table are very close to those given in the Statistical Abstract.

Average NPCs for SFCs

Table 7.12 below shows the average NPCs together with the weights in consumption to derive a weighted average NPC for SFCs.

Table 7.12:
NPCs of the Major SFCs

SFC	Table	Weight in Consumption (%)	Average NPCs (1985-91)		
			Lower	Upper	
Maize	7.7	6	0.9	1.1	(1)
Chillies	7.8	23	1.1	1.5	
Red onions	(4)	12	4.8	4.8	(2)
Potatoes	7.9	16	1.9	2.1	(3)
Big onions	7.10	7	2.0	2.0	
Red lentils (pulses)	7.11	18	1.4	1.4	
Sub-total/average		82	1.9	2.1	
Others (inc.cassava)		18			
Total		100			

Sources and Notes:
1. For 1986 and 1988 only
2. For 1990 only
3. For 1987-91 only
4. ARTI 1990
Consumption weights from Table 7.6

Effects of liberalisation on consumption

From the admittedly crude data on NPCs of SFCs, consumers in Sri Lanka would seem to have paid approximately double the world prices for the major SFCs in recent years. Laursen's paper emphasised the particular burden of this on the 'poor'. Table 7.13 below compares the expenditure of a 'poor' group on major SFCs, as a percentage of total food expenditure, with that of a 'rich' group.

Table 7.13:
Expenditure on Major SFCs by the 'Poor' and 'Rich' in Sri Lanka

Food	Income of Household (Rs per month)	
	401-600	5001-10000
	% of Total Food Expenditure	
Maize	neg.	neg.
Chillies	3	2
Red Onions	2	1
Potatoes	1	2
Big Onions	1	1
All Pulses	3	3
Total on SFCs	**10**	**9**
(Rice	26	17)

Source: Central Bank of Sri Lanka 1990, Table 4.1

The table shows that the 'poor' and 'rich' in Sri Lanka are almost equally affected by protection on SFCs. The suggestion by Laursen that the 'poor' are very adversely affected by protection, particularly because of the heavy weight attached to the consumption of potatoes, seems to be unjustified.

We conclude that the complete liberalisation of imports of SFCs would be likely to cut the cost of SFCs to consumers by about half. What would be the effect on producers?

7.4 Protection and production of SFCs

The starting point for this analysis is the table below (table 7.14), showing the gross returns and net returns (value added) per hectare and per labour day for the major SFCs for 1987/88.

Table 7.14:
1987/88 SFC Prices and Returns (Prevailing Technology)

Season/Crop	Yield (MT/ha)	Farm Price (Rs/kg)	Returns (Rs'000/ha)		Labour Days	Cash Returns (Rs/day)
			Gross	Net		
MAHA						
Irrigated Rice						
(small and medium scale)						
- dry zone	3.87	3.8	14.7	10.2	116	88
- intermediate zone	3.71	3.8	14.1	10.6	135	79
- wet zone	3.42	3.8	13.0	7.8	156	50
(large scale) - Mahaweli project	5.31	3.8	20.2	15.2	424	36
Rainfed Rice - dry zone	2.51	3.8	9.5	5.9	66	89
- intermediate zone	3.11	3.8	11.8	8.5	170	50
- wet zone	2.79	3.8	10.6	7.7	137	56
Rainfed - Chillies	0.65	28.0	18.2	15.9	253	63
- Green gram	0.53	16.1	8.5	7.7	153	50
- Cowpeas	0.64	10.0	6.4	6.0	163	37
- Groundnuts	0.67	11.0	7.4	5.6	158	35
- Maize	1.44	4.0	5.8	5.6	142	39
- Black gram	0.73	8.0	5.8	4.0	82	49
- Soyabean	0.75	7.1	5.3	3.6	104	35
- Sesame	0.41	9.0	3.7	3.5	80	44
- Potatoes	11.80	12.0	141.6	79.6	442	180
YALA (Irrigated)						
Rice - dry zone	3.80	3.8	14.4	9.3	107	87
- intermediate zone	3.54	3.8	13.4	10.4	158	66
- wet zone	3.00	3.8	11.4	8.9	166	54
Red Onions	10.58	9.0	95.2	77.0	758	102
Chillies	1.33	28.0	37.2	28.6	503	57
Groundnuts	1.60	11.0	17.6	12.3	242	51
Green gram	0.88	16.0	14.1	11.0	188	58
Black gram	1.00	12.0	12.0	10.4	130	83
Soyabean	1.66	6.0	11.6	8.5	145	59
Cowpeas	0.85	10.0	8.5	7.2	190	38
Potatoes	15.20	12.0	182.4	89.7	590	152

Source: FAO 1988 (44 and Working Paper 5)

In the time available, it has not been possible to estimate the EPCs in detail. With the value added being a high percentage of the gross output for most of the crops, it must be expected that the EPCs would be close to the NPCs. This is confirmed by the ARTI 1990 figures for red onions and chillies, but not for big onions, as shown in table 7.15 below.

Table 7.15: NPCs and EPCs - 1990

Crop	NPCs	EPCs
Red Onions	4.8	6.3
Chillies	2.6	3.2
Big Onions	2.3	11.0

Source: ARTI 1990

The above figures imply that big onions have a very much lower ratio of value added to gross output, but this does not actually seem to be the case (see Gleason 1990(Y), 11).

What about the EPC for SFCs? If the heroic assumptions are made that the NPCs on traded inputs average 1.2 and that value added at domestic prices is about 70% of gross output at domestic prices, the EPC (corresponding to an average NPC of 2.0) would be 2.8, as estimated in table 7.16 below.

Table 7.16: EPCs on SFCs - 1985-90

Item	Domestic Prices	NPCs and EPC	World Prices
Gross Output	100	2.0	50
Traded Inputs	30	1.2	25
Value Added	70	2.8	25

Thus, the incentive effect of the protection seems to be considerable. Another way of looking at this is to estimate the reduction in incomes per labour day caused by moving to border prices - that is, with a complete liberalisation of imports.

Table 7.17:
The Effect of Liberalisation on Net Returns of SFCs (FAO Data)

Product	1988 NPC			NPC of 1.0						
	1988 NPC	Farm Price (1987/88)	Cash Returns/ Labour Day	Farm Price with PC of 1.0	Yield	Gross Returns	Cash Inputs	Net Returns	Labour Days	Net Returns Per Labour Day
		Rs/kg	Rs	Rs	MT/ha	Rs'000/ha				Rs
Maize	1.1	4.0	39	3.6	1.44	5.2	0.2	5.0	142	35
Chillies	1.7	28.0	60	16.5	0.99	16.3	5.5	10.8	278	39
Red Onions	4.8	9.0	102	1.9	10.58	20.1	18.2	1.9	758	3
Potatoes	2.3	12.0	166	5.2	13.50	70.4	77.4	-7.0	516	-13
Big Onions	2.6	20.0	167	7.7	9.00	69.2	12.6	56.6	618	92
Green Gram	1.8	16.0	54	8.9	0.70	6.2	2.0	4.2	170	25
Black Gram	1.8	10.0	66	5.6	0.86	4.8	1.7	3.1	156	20

Sources: From table 7.14 (FAO 1988) - NPCs from tables 7.7 to 7.11

Using table 7.14, the effects of moving to a NPC of 1.0 have been estimated for each of the major crops. These estimates are shown in table 7.17.

The basic data for tables 7.14 and 7.17 come from an FAO report produced in 1988. However, the price and yield data in that report are quite different from the prices given by the ARTI and the yields given in the Central Bank Annual Report 1992 (see table 7.1). Tables 7.18 and 7.19 rework the data on the basis of the Central Bank's price and the ARTI's yield information but using the same NPCs.

Table 7.18:
Price and Returns 1987/88 - SFCs (Central Bank/ARTI Data)

	Farm Price	Yield	Gross Returns	Cash Inputs	Net Returns	Labour Days	Net Returns per Labour Day
	Rs	MT/ha	Rs'000/ha				Rs
Maize	3.5	1.4	5.0	0.2	4.8	142	34
Chillies	50.0	1.2	60.0	5.5	54.5	278	196
Red Onions	10.8	10.3	111.2	18.2	93.0	758	123
Potatoes	16.2	11.8	191.2	77.4	113.8	516	220
Big Onions	15.9	10.9	173.3	12.6	160.7	618	260
Green Gram	13.3	0.7	9.3	2.0	7.3	170	43
Black Gram	10.7	0.7	7.5	1.7	5.8	156	37

Sources: Farm Price from table 7.1 (ARTI)
Yield from Central Bank Annual Report 1992, table 16
Cash Inputs from table 7.14 (FAO)
NPCs from tables 7.7 to 7.11

Table 7.19:
The Effect of Liberalisation on Net Returns of SFCs (Central Bank/ARTI Data)

Product	1988 NPC			NPC of 1.0						
	1988 NPC	Farm Price (1987/88)	Cash Returns Per Labour Day	Farm Price with NPC of 1.0	Yield	Gross Returns	Cash Inputs	Net Returns	Labour Days	Net Returns Per Day
		Rs/kg	Rs		MT/ha	Rs'000/ha				Rs
Maize	1.1	3.5	34	3.2	1.4	4.6	0.2	4.4	142	31
Chillies	1.7	50.0	196	29.4	1.2	35.3	5.5	29.8	278	107
Red Onions	4.8	10.8	123	2.3	10.3	23.2	18.2	5.0	758	7
Potatoes	2.3	16.2	220	7.0	11.8	83.1	77.4	5.7	516	11
Big Onions	2.6	15.9	260	6.1	10.9	66.7	12.6	54.1	618	87
Green Gram	1.8	13.3	43	7.4	0.7	5.2	2.0	3.2	170	19
Black Gram	1.8	10.7	37	5.9	0.7	4.2	1.7	2.5	156	16

Source: From tables 7.14 and 7.18
NPCs from tables 7.7 to 7.11

Table 7.20 compares the results in tables 7.17 and 7.19.

Table 7.20:
SFC Prices and Returns - A Comparison (1987/88)

Product	1987/88 FAO Data Net Returns per Labour Day		1988 Central Bank and ARTI Data Net Returns per Labour Day	
	1988 NPC	NPC of 1.0	1988 NPC	NPC of 1.0
Maize	39	35	33	31
Chillies	60	39	196	107
Red Onions	102	3	123	7
Potatoes	166	-13	220	11
Big Onions	167	92	260	87
Green Gram	54	25	43	19
Black Gram	66	20	37	16

Source: From tables 7.14 and 7.19

The above table suggests that the production of red onions and potatoes would provide very low incomes at world prices - that is with the liberalisation of trade. This suggests that the real resource cost ratios for these crops are high. This is confirmed by the 1990 ARTI paper which estimated the RCR for red onions to be 1.6 (ARTI 1990, table 6.2). The ARTI estimate was based on a shadow exchange rate but it did not state what rate was used. However, when a shadow wage of labour (again this was not given in the ARTI text) was used, the RCR ratio dropped to 1.2 due to red onions being such a labour-intensive crop.

The optimistic picture for chillies painted by Table 7.20 is confirmed by the 1990 ARTI paper which estimates a RCR ratio (at market wages) of 0.5. On the other hand, the picture for big onions is not at all clear. In estimating the cash returns in tables 7.17 and 7.19 for big onions, cash inputs have been assumed to be 80% of the gross returns. The ARTI paper implies a much higher figure and gives a RCR ratio for big onions (at market wages) of 4.7. It is hard to see why it should be so high. The estimates for this study imply a much lower figure.

However, this analysis is based on shaky figures. No apology is offered for this, given the very short time within which this report has been researched and produced. Clearly, better data needs to be fed into this analysis. The NPC estimates are rough and ready and probably take insufficient account of seasonal variations in prices. The EPC figures are even cruder.

Thus the conclusions that can be drawn from this study are limited. In recent years the SFCs do seem to have had a high rate of nominal protection (an average of about 2.0) with the effective protection being about 2.8. What is more difficult to say is what effect any removal of protection would have on the pattern of crop production. It would seem likely that red onions and potatoes would offer very low incomes per labour day, while the production of big onions and chillies would continue to be attractive.

Much more analysis is needed. Yields of crops vary considerably between farmers and between one season and the next (see Gleason 1990(Y), 6 and Jiron 1987, 12) and the analysis here needs to be extended to be more representative.

In a paper written in 1992, Dunham said that "With present levels of technology...few crops offer a significant financial and managerial advantage over paddy where there is adequate water ... Shifting from paddy is often seen - even by marginal producers - to be a risky business" (Dunham 1992, 12 & 13). The studies by Gleason et al confirm this for the Maha season (see Gleason 1990(M), 10) but not for the Yala season (see Gleason 1990(Y), 12).

However both Dunham and Gleason were referring to returns at domestic prices. If the returns are re-calculated according to the border prices, the relative attraction of paddy increases. Thus this study slightly disagrees with Jiron 1987 when he says on page iv:

> "When import substitution actions are examined against the backdrop of financial and economic costs, one does not detect a drastic misallocation of resources due to pursuing import substitution options. In most cases, estimated border prices and domestic prices ... do not deviate in a significantly anomalous way".

What he says seems to be true of paddy and milk but is not true of sugar nor of SFCs. There seems to be a prima facie case for reducing the protectionism on SFCs, especially that on red onions and potatoes. But more reliable figures than are contained in this section need to be obtained to confirm this conclusion, especially as the number of farmers involved in the production of these crops is small and production is concentrated in a few districts (see table 7.21).

Table 7.21:
Concentration of SFC Production by District 1991

	District and Percentage of Total Crop Production			
Crop	1st District	2nd District	3rd District	Top 3 Districts
Maize	Ampara	Anuradhapura	Moneragala	
	22	21	19	62
Chillies	Mahaweli-H	Anuradhapura	Polonnaruwa	
	34	16	11	61
Red Onions	Jaffna	Puttalam	Batticaloa	
	43	16	10	69
Potatoes	Badulla	N'Eliya	-	
	60	39		99
Big Onions	Matale	Mahaweli-H	Polonnaruwa	
	34	34	24	92
Sweet Potatoes	Ratnapura	Kurunegala	Kalutara	
	21	13	1	35
Green Gram	Moneragala	Kurunegala	Hambantota	
	32	19	16	67
Cowpea	Kurunegala	Hambantota	Anuradhapura	
	26	13	13	52

Source: Jiron 1993 (NPD)

Although the exact effects of removing trade protection on SFCs are difficult to assess, it is believed that it would be desirable to move towards transforming the present structure of licences to one of tariffs - at first, perhaps, specific tariffs and later a seasonally-adjusted moving average tariff. However, it is unlikely that reducing protection in the SFC sector will transform the Sri Lankan countryside. It seems that supply-side constraints, as emphasised in Dunham, may be more important in determining production patterns than price movements. The following of the constraints referred to by Dunham are particularly important to SFCs:

- shortages of seeds (pg 30)
- problems of markets and marketing in the domestic economy (pg 32)
- Government support - research (pg 42); extension (pg 43)
- other constraints of infrastructrure important to the export crops (page 34)

In addition, it has been suggested that patterns of land ownership and regulation may hinder the flexibility of crop production.

8. Sugar

8.1 Sugar - general introduction

A distinction needs to be drawn between the production and consumption of raw sugar and refined sugar. Almost all (about 99% in 1992) of Sri Lanka's sugar imports consist of refined sugar. 'Plantation white' and brown sugar (both types fit for human consumption) are produced domestically from sugar cane at Hingurana, Sevanagala, Kantale and Pelwatte (see figure 8.1 on the following page). There is no refining of imported raw sugar in Sri Lanka. Table 8.1 shows the production, imports and apparent consumption of refined sugar from 1984 to 1992 - there are no exports of sugar from Sri Lanka.

In recent years, as shown in table 8.1, domestic production has accounted for about 15% of consumption.

Table 8.1:
Production, Imports and Consumption of 'Refined Sugar' in Sri Lanka 1984-1992

Year	Production (1000 M/T)	Imports (1000 M/T)	Consumption (1000 M/T)	Production as a % of Consumption
1984	18	263	281	6.4
1985	18	388	406	4.4
1986	34	322	356	9.6
1987	29	379	406	7.1
1988	54	319	373	14.5
1989	54	320	374	14.4
1990	57	305	362	15.7
1991	66	358	424	15.6
1992	60	370	430	14.0

Source: Production Data from Central Bank Review of the Economy 1985,1987,1988 Table 2.5; Central Bank Annual Reports 1989 Table 1.14, 1990, 1991, 1992 Table 1.13
Data on imports from Central Bank Annual Reports 1990 Table 44 and 1991, 1992 Table 45.
Consumption = Production + Imports

Sugar imports are not subject to licensing but there are quite high gazetted import duties. The import duty at present (October 1993) is Rs 5/kg plus a surcharge of Rs 2/kg imposed in August 1993. Rs 5/kg was the import duty in 1992, representing an ad valorem duty of 37% with an average 1992 CIF price of Rs 13.4/kg. Customs Statistics for 1992 show this as 36% on 'dutiable imports' (see table 8.2). However it appears that these gazetted duty rates are partially waived if importers purchase one

ton of local sugar for every five tons of sugar imported (the duty waiver is Rs 0.25/kg)[1]. In 1992, according to Customs Statistics, the partial duty waiver reduced the actual duty paid to about 34% as also shown in table 8.2 below.

Table 8.2
Imports and Import Duties on Sugar - Sri Lanka 1992

HS Code	Value of Imports Rs. Mn.	Import Duty Revenue Rs. Mn.	Actual Duty	Gazetted Duty
1701.11.01	28	5	18%	18%
1701.11.09	4772	1635	34%	36%
1701.99.00	180	53	29%	29%

Source: Customs Statistics Department and External Trade Statistics 1992.
Note: According to the Gazetted definition, 1701 seems to be raw sugar, whereas according to the information obtained from the Sugar Research Institute, actual imports are all refined white sugar.

There were also imports under HS Code 1702 (mostly syrups) in 1992 totalling Rs.97 mn.

The picture of the nominal rate of protection is blurred by the alleged existence of agreed sugar prices (ASP) paid to Pelwatte and the other sugar factories (until recently, the latter companies came under the state-owned Sri Lanka Sugar Corporation - SLSC). For example in 1988, the ASP for Pelwatte was alleged to be Rs 24/kg whereas for the SLSC it was Rs 17/kg, while in 1990 the ASP for Pelwatte was Rs 30/kg whereas for the SLSC it was Rs 21/kg (see ADB 1990, 78). It is not clear whether these were enforced in the past. However, although there has been press discussion of an ASP for Pelwatte, trade sources indicate that there is no such ASP enforced at present (October 1993).

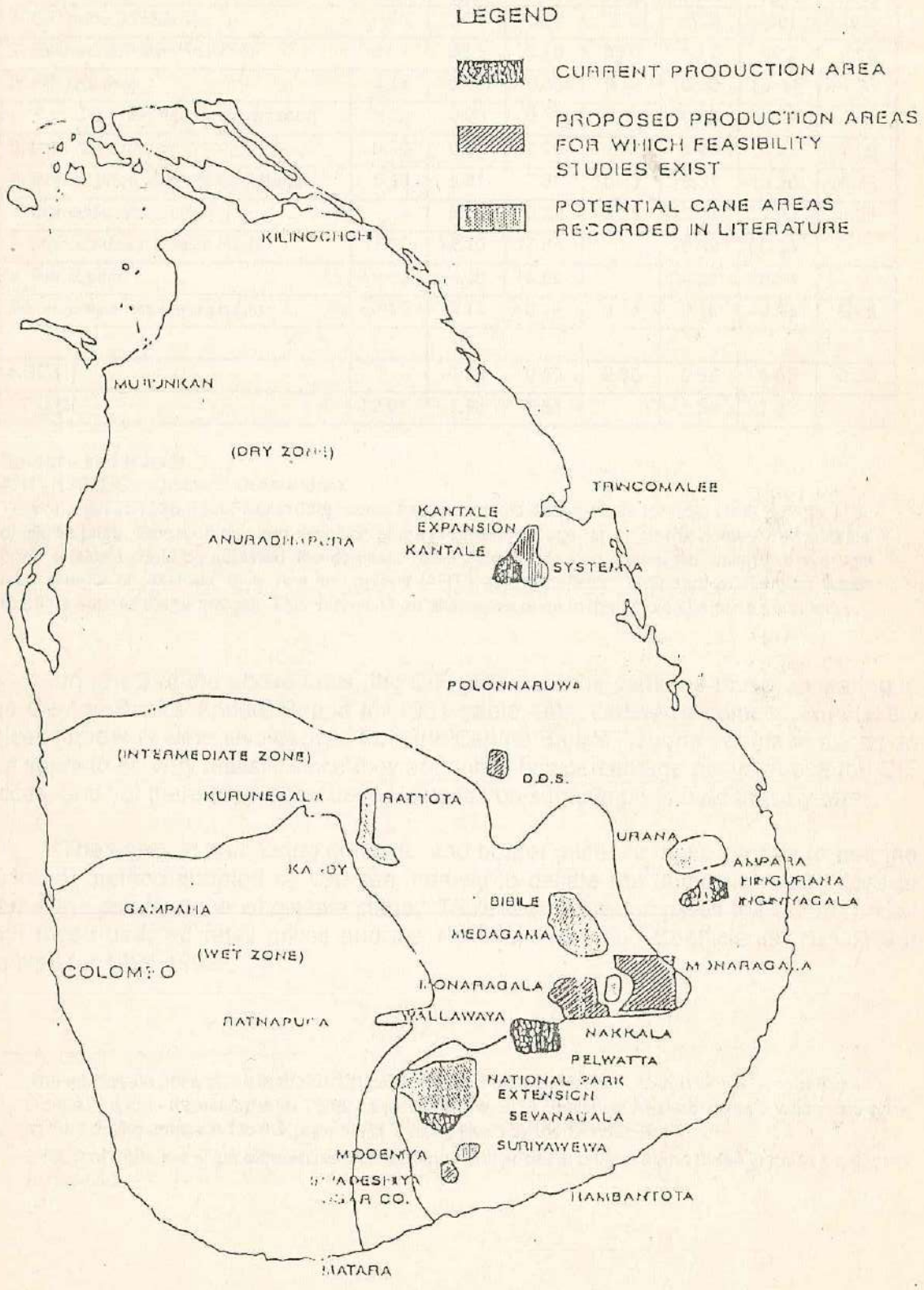
8.2 Protection and prices to the consumer

Laursen's estimates of the protection of refined sugar for 1985 through to 1991 are shown in table 8.3. Her figures are reproduced below exactly as in her report (including footnotes) except that rows 1 and 2 have been added to show the CIF prices in US$s per metric ton.

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1. It is mistakenly believed that importers have to agree to maintain a buffer stock of about 15% of their total purchases to qualify for the import waivers, but this appears not to be the case.
At present (October 1993) there are 21 sugar importers which belong to the Sugar Importers' Association (SIA) and 2 non-member importers (Arumugam and Yashoda). The members of the SIA account for about five-sixths of imports with the non-members accounting for about one-sixth.

FIG. 8.1 LOCATION OF CURRENT, PROPOSED, AND POTENTIAL SUGAR PRODUCTION PROJECTS IN SRI LANKA IN RESPECT TO AGRO- ECOLOGICAL ZONES



Source : ADB (1990), FIG. 2.2, Page 13

Table 8.3:
Protection on Refined Sugar 1985-91 (from Laursen 1993)

	1985	1986	1987	1988	1989	1990	1991
1. CIF price (US$/MT)	186	192	206	278	338	421	336
2. Exchange Rate (Rs./US$)	27.4	28.5	30.8	33.0	40.0	40.2	42.6
3. CIF (Rs./Kg)	5.11	5.48	6.35	9.18	13.50	16.94	14.33
4. Port Charges, handling, transport	0.23	0.23	0.26	0.30	0.33	0.40	0.44
5. Importer's margin	0.56	0.60	0.70	1.01	1.49	1.86	1.58
6. Border price at wholesale stage	5.90	6.31	7.31	10.49	15.31	19.20	16.34
7. Domestic wholesale [1]		5.44	6.22	9.25	13.57	17.03	14.38
8. Marked-down retail price [2]	11.87	12.10	11.54		20.59	23.39	
9. Retail price	14.00	14.00	14.00		24.22	28.54	
10. Adjusted retail margin (%)	0.15	0.14	0.18	0.16	0.15	0.18	0.18
NPC [1]		0.86	0.85	0.88	0.89	0.89	0.88
NPC [2]	2.01	1.92	1.58		1.34	1.22	

Sources and Notes:
ARTI (1992), Customs and Central Bank.
Total margin in 1988 from FAO (1988), same transport costs assumed as for rice, profit margin 11% of import price. Because no clear definition of the processing stage (at which the domestic wholesale price is taken) could be obtained, the domestic retail price is adjusted downward, using the average retail margin of potatoes, dhal, rice and onions (ARTI) as the deflator. Standard conversion factor (0.85) is applied to the margin. This serves as an alternative price to the wholesale price obtained.

In row 3 of the above table, the CIF prices are the same as those appearing in the Central Bank's Annual Report for 1991 (table 44). Laursen's domestic wholesale prices (in row 7) were also derived from the Central Bank's Reports but these prices do not seem to be very realistic since they are only a few percentage points above the CIF prices, and yet there have been duties imposed on sugar imports over these years[2].

Therefore, in comparing domestic and border prices, it makes sense to use the (second) method adopted by Laursen, namely to deflate the domestic retail prices to derive the prices at the wholesale stage. Table 8.4 below compares the border prices with these deflated retail prices and the Nominal Protection Coefficients (NPCs) are derived for 1985-1992[3].

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2 The wholesale price given in the Statistical Abstract is quite different from that in the Central Bank Annual Report - for example for 1988, page 270 of the 1991 Statistical Abstract gives a wholesale price of Rs 16.6/kg compared to the price of Rs 9.25/kg given by the Central Bank.

3 Note that there are slight differences between the retail prices in table 8.4 and those in Laursen, shown in table 8.3.

Table 8.4:
Protection on Refined Sugar 1985 - 92 (Revised Figures)

	1985	1986	1987	1988	1989	1990	1991	1992
1. Border price at wholesale stage (Rs./kg)	5.90	6.31	7.30	10.49	15.31	19.20	16.34	14.92
2. Retail price - Colombo (Rs./kg)	12.58	14.09	15.79	18.18	24.75	28.59	24.25	24.80
3. Retail margin (%)	15	14	18	16	15	18	18	17
4. Marked down retail price (Rs./kg)	10.69	12.29	12.95	15.27	21.04	23.44	19.89	20.58
5. NPC	1.81	1.95	1.77	1.46	1.37	1.22	1.22	1.38

Note: Row 1 from Row 6 in Table 8.3.
The figure for 1992 was calculated by adjusting the CIF price of Rs.13.38/kg for 1992 by the importers margin used by Laursen and by the cost of port charges, handling and transport. The latter was calculated by inflating the figure for 1991 by the % change in the Wholesale Price Index from 1991 to 1992 (CB of SL AR 1992, Table 24) .
Row 2: Prices and Wages Division , Dept. of Census and Statistics .
Row 3: Row 9 in Table 8.3. The figure for 1992 is an average of the figures for the years 1986 - 1991.
Row 4: Row 2 marked down by the retailer's margin in Row 3.

Table 8.4 shows that the Nominal Protection Coefficient for refined sugar varied between 1.22 and 1.95 between 1985 and 1992. For the last four years the average NPC has been 1.30 - that is, the price to the consumer has been about 30% above the border price equivalent over this period (and at official exchange rates). In 1992 the excess of the domestic price over the border price (due to import protection) was just under 40%.

Expenditure on sugar in 1986/87 (the latest available figures) was 7% of total food expenditure (Report on Consumer Finances and Socio-Economic Survey, 1986/87 Part II, table 4.37).[4] Assuming that the abolition of the import duty on refined sugar would reduce the cost of food consumption by about 30%, then the effect on total food expenditure would be something like 30% of 7%, that is about 2%.

4. The apparent consumption of refined sugar in Sri Lanka in 1991 was 424,000 MT. This figure agrees with the Food Balance figure for 1991 given in the 1992 Statistical Abstract (table 85b). Therefore the annual consumption of sugar per capita in 1991 was 25 kgs and this provided an average of 269 calories per capita per day, equivalent to about 12% of the average total calorie consumption in Sri Lanka of 2,339 per capita per day.

8.3 Protection and the effect on production

As stated above, 'plantation white' and brown sugar are produced in Sri Lanka from sugar cane at four factories. Production shares are given in table 8.5.

Table 8.5:
Sugar Production in Sri Lanka

	% of production in 1991 and 1992
Hingurana	15
Kantale	4
Sevanagala	19
Pelwatte	62
Total	100

Source: CB of SL AR 1992 (Table 1.13)

In recent years, there has been an increasing share of production at Sevanagala (see CBofSL 1992, 47), which appears to provide the highest yield and be the lowest cost producer of sugar cane in Sri Lanka.

It is useful to distinguish between raw sugar and refined sugar in assessing the efficiency of sugar production in Sri Lanka. However, the problem is that the sugar produced in Sri Lanka is equivalent to neither imported refined white sugar nor to importable raw sugar. Table 8.6 below shows the NPCs for 1988 and 1990-92 on the basis of both refined sugar and raw sugar.

As can be seen from table 8.6, the NPC on the basis of raw sugar varies between 1.3 and 1.7. On the basis of refined sugar it varies from 1.0 and 1.5. The average NPCs for the four years (1988 and 1990-92) are 1.6 for raw sugar and 1.3 for refined sugar. It should be noted that the NPCs are given in table 8.6 on the basis of the cane sugar price paid to the farmer and that the price paid to the farmer in Sri Lanka is, relative to other countries, a small proportion of the price paid to the factories (see ADB 1990, 67).

Table 8.6 :
Protection on sugar in Sri Lanka, 1988-1992

	1988	1990	1991	1992
1. FOB price of raw sugar (US$/MT)	225	277	198	200
2. CIF price of raw sugar (US$/MT)	260	312	233	235
3. Exchange rate (Rs/US$)	33.0	40.2	42.6	46.0
4. CIF price of raw sugar (Rs/kg)	8.6	12.5	9.9	10.8
5. Port charges, margin, etc. (Rs/kg)	0.9	1.2	1.0	1.1
6. Border price equivalent of raw sugar at 'wholesale stage'	9.5	13.7	10.9	11.9
7. CIF price of refined sugar (US$/MT)	278	421	336	291
8. Exchange rate (Rs/US$)	33.0	40.2	42.6	46.0
	Rs/kg			
9. CIF price of refined sugar	9.2	16.9	14.3	13.4
10. Port charges, margin, etc.	0.9	1.6	1.4	1.4
11. Border price equivalent of refined sugar at wholesale stage	10.1	18.5	15.8	14.8
	Rs/MT			
12. Farm-gate price of cane	600	760	840	910
13. Transport from farm to mill	50	67	73	79
14. Value of cane at mill	650	827	913	989
	Rs/kg			
15. Sugar-equivalent of cane at mill	8.7	11.0	12.2	13.2
16. Milling costs	6.5	6.5	6.5	6.5
17. Transport from mill to market	0.2	0.2	0.2	0.3
18. Domestic price of sugar at wholesale stage.	15.3	17.7	18.9	19.9
19. NPC on basis of raw sugar	1.6	1.3	1.7	1.7
20. NPC on basis of refined sugar	1.5	1.0	1.2	1.3

Notes and sources:

1. World Bank 1993 (table 2).
2. Bulk freight and insurance given as US$35 in FAO 1988 (WP3, table 4).
3. See Laursen 1993, 5.
4. Product of rows 2 and 3.
5. Port charges and handling at Rs.300/MT (1988), Rs.400/MT (1990) and Rs.440/MT (1991); the figure for 1992 was calculated by inflating the figure for 1991 by the % change 1992 over 1991 of the Wholesale Price Index (CB92, table 24).
6. Sum of rows 4 and 5.
7. Derived from the CIF price in rupees converted at the official exchange rate (see note 3).
9. Central Bank Annual Reports 1988, 1989, 1990 table 24, 1991, 1992 table 25.
10. See note 5.
11. Sum of rows 9 and 10.
12. The figure for 1988 is from FAO 1988 (WP3, table 4). Prices for 1990-92 are from the Sri Lanka Sugar Corporation.
13. From FAO 1988 (WP3, table 4) for 1988; plus 33% for 1990 and 45% for 1991 to accordance with the changes in the Wholesale Price Index in Sri Lanka over these years (CB of SL AR 1992, table 24.).
14. Sum of rows 12 and 13.
15. Row 14 divided by the recovery rate of sugar from cane (i.e. by 7.5%)
16. From FAO 1988 (WP3, table 4). Treated as constant for 1990, 1991, 1992.
17. As for note 13.
18. Sum of rows 15, 16 and 17.

Information from trade sources indicates that the sugar produced in Sri Lanka is somewhere between raw and refined in quality, but closer to refined. The sugar produced at Pelwatte is 'plantation white' which is generally only just below refined white in price (a discount of Rs. 0.5 - 1.0/kg) while the brown sugar produced at Sevanagala and Hingurana has a discount of Rs. 1.0 - 2.0/kg compared with imported refined white. Thus the NPC of the equivalent sugar price paid to the farmer has averaged about 1.4 in recent years.

Given this, what effect would complete liberalisation have on production? The brief answer is that most of the Sri Lankan sugar industry would find it difficult to survive. It is only by substantial protection that the industry has survived and the ADB report suggested that assistance to the industry was running at close to 100% in the second half of the 1980s (ADB 1990, 33). However in recent years the industry's efficiency has improved considerably and the level of protection has declined.

Nevertheless, sugar cane yields in Sri Lanka are generally too low to give a good income to the farmer without substantial protection. As the ADB report put it - sugar cane grows reasonably well in Sri Lanka but in a sense too well since the sugar content is low (see ADB 1990, 32).

However there are two problems of assessing the international efficiency of sugar production in Sri Lanka. Firstly, the costs of production vary considerably within Sri Lanka, and secondly, world sugar prices are highly volatile.

The structure of sugar production varies in Sri Lanka between the production sites, as do the yields. At Hingurana the main form of production is by settlers on irrigated land and there the average yield in 1989/90 was 51 MT of cane per hectare. At Pelwatte, the main form of production in 1989/90 was by outgrower on rainfed land and there the average yield was 69 MT/ha. At Sevanagala the main form of production was by settlers on irrigated land and there the average yield was 136 MT/ha. (see ADB 1990 14). Thus yields vary considerably between 50 to 70 MT/ha at Hingurana and Pelwatte to well over 100 MT/ha at Sevanagala.

World sugar prices are highly volatile because the free market is 'thin'. The world market is segmented into a number of bilateral or multilateral agreements with deals made on preferential terms (see ADB 1990, Appendix x). As a result the free market price tends to vary considerably. But if we look at the past five years or so and at the World Bank's forecast for the year 2000, the FOB price of raw sugar is in the range of US$240 - US$250/MT (at 1990 prices). This is equivalent to a CIF (Colombo) price of raw sugar of about US$270 to US$280/MT, equivalent to a refined CIF price of about US$330/MT. This would translate into a price of refined sugar in Sri Lanka of a little under Rs 15/kg (on the basis of the 1990 exchange rate) or about Rs. 14/kg allowing for a quality discount of Rs. 1/kg. Given sugar milling and transport costs (at 1990 prices) of Rs 6.7/kg (see table 8.6 and ADB 1990, 23) and a 7.5% sugar recovery rate, this is equivalent to a sugar cane price at the farm-gate of about Rs 500-Rs 550/MT or about two-thirds of the actual price of about Rs 760 paid to the farmers in 1990 (see table 8.6 above).

What incomes would a price between Rs 500-Rs 550/MT give to sugar farmers?

Obviously this depends on the yield. For a yield of around 60 MT/ha (the typical yield at Hingurana and Pelwatte), the net incomes would be barely above Rs 20,000/ha. The estimates of labour days/ha vary between 180 at Pelwatte (rainfed allottee) and 250 at Hingurana (irrigated allottee) (see table 8.7) so that at net incomes of only about Rs 20,000/ha, farmer incomes per labour day are likely to be well below Rs 100. Higher yields such as 130 MT/ha on irrigated allottee land at Sevanagala would give incomes/labour day of well over Rs 100, more than competitive with most other crops (at 1990 prices).

Table 8.7:
Costs of production of raw sugar 1990

Region	Pelwatte	Hingurana	Sevanagala	Sevanagala	Sevanagala
System	Rainfed Allottee	Irrigated Allottee	Irrigated Allottee 1	Irrigated Allottee 2	Irrigated Private
Yield (MT/ha)	62.0	60.0	90.0	130.0	75.0
Price (Rs/MT)	800.0	620.0	620.0	620.0	620.0
Labour (days/ha)					
Family	87.0	151.0	158.0	158.0	189.0
Hired	91.0	100.0	120	173.0	113.0
Total	178.0	251.0	278	331.0	302.0
Gross revenue (Rs 1000/ha)	49.6	37.2	55.8	80.6	46.5
Current inputs (Rs 1000/ha):					
Seed cane	1.5	2.5	1.3	1.3	1.6
Fertilizer	4.2	5.4	5.6	5.6	5.0
Chemical	1.4	1.0	0.3	0.3	
Total	7.1	8.9	7.2	7.2	6.6
Returns to labour land and capital					
(Rs 1000/ha)	42.6	28.3	48.6	73.4	39.9
Returns per labour day (Rs)	278.7	148.2	200.7	243.5	154.0

Source: ADB (1990), Appendix viii, table 8.2.

These calculations are consistent with the estimates in the ADB study, suggesting that the cane price needs to be around the 1990 level of Rs 800/MT to give an adequate level of income for areas with low yields (ADB 1990, 66). Such a cane

These calculations are consistent with the estimates in the ADB study, suggesting that the cane price needs to be around the 1990 level of Rs 800/MT to give an adequate level of income for areas with low yields (ADB 1990, 66). Such a cane price implies a price of sugar which would be at least 40% above the equivalent long-run border price - that is, it would imply a NPC of at least 1.4. Such a level of protection is unlikely to be justified unless a very low shadow price of labour is used. Certainly, the recommendation of the 1990 ADB report is difficult to support, namely that the minimum price (an 'Agreed Sugar Price') payable to the factories should be equivalent to a CIF (refined) price of US$500/MT or Rs 22/kg[5]. This would imply a NPC of something like 1.8 on a likely future CIF price for refined sugar of about US$330/MT. This is much more difficult to justify and yet this is what recent press reports suggest that the Government is reputed to be agreeing to (at least for Pelwatte - see Daily News of October 20th 1992).

It is difficult to justify a wholesale price for domestic production of much above Rs 17/kg or Rs 18/kg (at 1990 prices). If the price is set at the level equivalent to US$500/MT or above, it might enable Pelwatte to make an operating profit (as it did in 1991/92), but it would not make good policy.

A 1986 FAO study pointed out that "At current returns and yields, expansion of production to new areas is uneconomic" (FAO 1986, vii) and estimated that the value added from sugar at world prices was negative (see page 4). Similarly the 1990 ADB study was at pains to point out (see pgs. i, iii, and 32):

- that Sri Lanka is not suited to the production of sugar;
- that "Import prices are often substantially below the current cost of production in Sri Lanka";
- that "to be viable the current sugar projects would require prices of at least Rs 20 and preferably Rs 22 per kilogram with improved efficiencies"; and
- that "For new projects prices in excess of Rs 30 per kilogram are required to service capital costs";

and yet it recommended the adoption of an Agreed Sugar Price equivalent to US$500/MT (ADB 1990 ii).

As stated above, it is difficult to support a NPC for sugar of much above 1.2 or 1.3 which, on long-term price projections for refined sugar of about US$330/MT, is equivalent to a specific duty of between Rs 3/kg and Rs 5/kg (on the basis of a Rs 50/US$ exchange rate) compared to the present duty (including surcharge but after waiver) of Rs 6.75/kg. It is only on the basis of yields of at least 100 MT of cane per

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5. On page 75 of its report, the 1990 ADB study justified its recommendation by saying that "A price of Rs 22/kg is defensible as it is close to to the price received by US and domestic European producers for their sugar production and is similar to prices under the Lome Convention" (ADB 1990,75)

hectare that sugar production in Sri Lanka is likely to be economically competitive. In terms of current average yields, production at Hingurana and Pelwatte does not seem to be economically worthwhile. It should be noted that returns/labour day for each of the three plantations, as calculated above, have not taken into account irrigation costs. If irrigation costs were to be included, it would only serve to reinforce the conclusion that sugar production at Hingurana and Pelwatte is relatively inefficient.

9. Milk and Dairy Products

9.1 The call for protection on milk production

A specific request was made by the Presidential Tariff Commission for this study to look at the milk and dairy products sector in Sri Lanka. A recent study which covered the milk sector, entitled the 'Sri Lanka Livestock Sector Policy Review', was carried out by Brown, Copeland and Co., a New Zealand group of consultants, for the Sri Lankan government in 1992. This study draws on the data and analysis of this Review.

The Brown Copeland study forms an input into a National Agricultural Food Strategy (NAFS) which was due for completion in the middle of 1993 and which is intended to be a revision of the National Agriculture, Food and Nutrition Strategy (NAFNS) of 1984.

The main conclusions and recommendations of the Brown Copeland study were as follows:

- "growth opportunities are seen in the broiler industry, in processed meats and, with appropriate changes in government policy, in the dairy sector" (page i);
- "the main broad-based development opportunity is therefore seen to be based around the dairy sector, where currently domestic production meets only 20 per cent of demand[1] with static levels of domestic milk production. This level of self-sufficiency has been gradually falling, from a level of around 40 per cent in the early 1980s" (page ii);
- "while the Government's aim is to reach a level of self-reliance of 40 per cent over the decade (involving an increase in domestic production from 76 million litres to 241 million litres), a 30 per cent self-reliance target (of 181 million litres) is considered more achievable by the year 2002" (page iii);
- "the key to realising this goal is to adopt an appropriate policy on the import pricing of dairy products. Hitherto, Sri Lanka has had negligible or very low tariffs on imports of whole cream milk powder (WMP) compared to other countries in South East Asia and the Sub-continent and the resultant low retail prices for WMP have constrained the pricing structure for dairy products sourced from the domestic industry" (page iii);
- "threshold import prices for WMP need to be established to ensure a reasonable margin between the milk equivalent price of reconstituted powder in the retail market, and the retail price of processed (say pasteurised) whole milk, based on a producer price which is

1. Note that a study by FAO in 1988 reported that "About half of the total supply in milk equivalent is imported" (FAO 1988, Working Paper no 6, 1).

expected to facilitate the expansion of raw milk supply to meet the demands of the processing industry" (page iii and iv);

- "while the imposition of such a tariff runs counter to the general thrust of Government policy, such intervention is justified so as to increase the level of self-reliance in the industry, and to achieve the social impacts which will result from dairy sector expansion" (page iv);
- (it is recommended) that the duty on imports of WMP should be set at 20% or even as high as 35% (see pages 139,140) and that an organisational structure for the dairy industry similar to that of 'Operation Flood' in India be set up.

Thus the Brown Copeland study saw a great future for the dairy industry in Sri Lanka, which should be brought about by tariff protection. The basic question examined here is:

Should the recommendations of Brown Copeland on the protection of the dairy industry be supported?

To answer this question, this section examines the existing structure of the Sri Lankan milk and milk products industry and the costs of producing milk in Sri Lanka.

It should be noted here that the fat content of milk varies considerably, but this report has attempted to make allowances for differences in fat content in making price comparisons. Table 9.1 shows part of a standardisation table produced by Nestle for this purpose in the domestic milk market.[2] The average figures are used to give a price for typical SNF (Solids-non-fat) content.

Table 9.1:
Standardisation of Fresh Milk Prices (As from 01/06/93)

(Fat% x 0.9143) + (SNF% x 0.6348) = Price						
Fat %	Typical SNF %				Average	Index
	8.0	8.1	8.2	8.3	8.2	(3.7=100)
3.3	8.10	8.16	8.22	8.29	8.2	95.7
3.4	8.19	8.25	8.31	8.38	8.3	96.8
3.5	8.28	8.34	8.41	8.47	8.4	97.9
3.6	8.37	8.43	8.50	8.56	8.5	98.9
3.7	8.46	8.52	8.59	8.65	8.6	100.0
3.8	8.55	8.62	8.68	8.74	8.6	101.1
3.9	8.64	8.71	8.77	8.83	8.7	102.2
4.0	8.74	8.80	8.86	8.93	8.8	103.2
4.1	8.83	8.89	8.95	9.02	8.9	104.3
4.2	8.92	8.98	9.05	9.11	9.0	105.4
4.3	9.01	9.07	9.14	9.20	9.1	106.4

Sources: Nestle Lanka Ltd - Fresh Milk Price (Effective from 01/06/93)

2 A very similar one is produced by MILCO, but since their market share is smaller, the Nestle table is used here.

9.2 The milk and milk products market in Sri Lanka

The structure of the market

Estimates of milk and milk product consumption in Sri Lanka are shown in table 9.2 below.

Table 9.2
Estimate of Milk and Milk Products Consumption in Sri Lanka on a Liquid Milk Equivalent (LME) Basis (1990 and 1991)

Population (millions)		1990 17.0		1991 17.3	
Product	Processor	'000 litres	Market share (%)	'000 litres	market share (%)
(A) From fresh milk					
- Pasteurised milk	MILCO	7400	2.1	5900	1.4
	Others*	1100	0.3	1200	0.3
- Sterilised milk	MILCO	4800	1.4	4200	1.0
	Others*	150	-	200	-
- Fresh milk products					
(butter/cheese/yoghurt/					
ice cream/curd)	MILCO	1000	0.3	1400	0.3
	Others	9000	2.6	10000	2.4
- Milk powders					
(from local milk)	MILCO	22000	6.3	25500	6.1
	Nestles	19400	5.6	25800	6.2
- Condensed milk	IDPL	5100	1.5	5300	1.3
SUB-TOTAL FRESH MILK		69950	20.1	79500	19.2
(B) From imported milk products					
(all on LME basis #)					
- Whole milk powder	LMF/Jones /Lita	183000	52.5	231800	55.9
- Skim milk powder/Butter oil					
(for recombined whole milk powder)	Nestles	19100	5.5	14000	3.4
- Infant milk powder	LMF	17700	5.1	15400	3.7
- All other imported products					
(UHT milk,butter,cheese,SMP etc.)		59000	16.9	74000	17.8
SUB-TOTAL IMPORTED MILK		278800	79.9	335200	80.8
FORMAL MARKET (LME'S)		348750	100.0	414700	100.0

Source: Brown Copeland 1992, Appendix 13, Table 10, p.34.

Notes:
- * Others include Elephant House.
- ** Others include Coconut Triangle Milk Union and Mahaweli Milk Plants
- *** Others include Swiss Cheese Co., Nels Farm, Subasingha Traders, Ranwan industries, CTMU, Mahaweli, and all ice cream, yoghurt and curd producers.
- # Converted on an LME basis as follows: WMP 7.6, SMP 7.6, Butter and Butteroil 6.6, Cheese and Curd 4.4, UHT Milk 1.0, IMP, 6 SCM 2.1, Whey Powder 7.6, SCM 2.5

As shown in table 9.2, 20% of the 415 mn. litre (LME) milk and milk products market in Sri Lanka is produced domestically; about 80% is imported. The Brown Copeland study stated that the internal market is competitive. About three-quarters of the total milk and milk products market consists of milk powder and within this market there are 4 main producers/packers. These are set out in table 9.3.

Table 9.3:
Main Companies in the Sri Lankan Milk Powder Market

Company	Share of 1991 market (%)
MILCO (Milk Industries of Lanka Company Ltd): produces 'Highland' whole milk powder (WMP) from fresh milk. MILCO, formed in 1985, is the successor to the National Milk Board, operating milk plants at Colombo (Narahenpita), Digana, Ambewela and Galle. It was privatised for a period of 3-4 months in 1993, then renationalised, but government policy remains one of privatisation.	8
Nestle's Lanka Ltd.: 93% owned by the Swiss multinational, Nestle SA, produces 'Nespray' whole milk powder from local fresh milk and by recombining imported skimmed milk and butter oil.[3]	14
Jones Overseas Ltd, part of the Maharaja group of companies: packages and markets 'Anchor' WMP from New Zealand; Jones took over the New Zealand Dairy Board agency from CWE in 1983. It has a packaging plant at Ratmalana, Colombo.	32
Lanka Milk Foods (CWE) Ltd: has been, since October 1991, 51% owned by the Stassen Group (the largest tea exporter in Sri Lanka) and 49% by the Government of Sri Lanka; it packages imported WMP under the 'Lakspray' brand and Infant Milk Powder under the 'Vitamilk' brand.	42
Others	5
Total	100

Sources: Brown Copeland, 1992, pages 43 and 44 and trade interviews.

Thus, foreign companies have a significant share of the milk powder market. Through majority ownership they have more than half of the total market. In addition, the condensed milk market in Sri Lanka is dominated by foreign control in the form of International Dairy Products Ltd (IDPL), a joint venture of Nestle (60%) and the Government of Sri Lanka (40%), which produces condensed milk from local fresh milk (see Brown Copeland 1992, 37,40, and Appendix 13, 27).

3. Under a 1974 agreement between the Government of Sri Lanka and Nestle of Switzerland, Nestle was expected to invest Rs 6 million a year in dairy development and to invest in a milk powder factory and a joint venture condensed milk factory (see FAO 1988, Working Paper 6, 8).

The milk market and the structure of protection in Sri Lanka

The Brown Copeland study, in arguing that producers of milk in Sri Lanka have had little protection given to them in recent years, listed the import duty rates on full cream milk powder between 1983 and 1991. Their figures are reproduced in table 9.4 below.

Table 9.4:
Import Duty Rates on Full Cream Milk Powder

Period	Rate
1993	5
1985	5
1985 (from April)	15
1986	15
1987	15
1988 (from April)	5
1988 (from Oct.)	Nil
1989	Nil
1990 (from April)	10
1990 (from Sept.)	15
1990 (from Nov.)	20
1991 (from April)	10
1993 (from Sept.)	15

Sources: Brown Copeland 1992, Table 12 (from Ministry of Finance)
1993 from Jones Overseas Ltd.

It is not clear whether these are the gazetted duty rates or the actual duty rates payable after taking account of duty waivers. For example, in 1992 the gazetted duty rate on full cream milk powder (under HS code 0402.21.01) was 35%, while the actual duty paid was equivalent to 10% of the value of imports under that code. The difference between the 35% listed rate and the 10% actual rate paid seems to have been due to waivers of import duty under section 19A of the Customs Ordinance (see Appendix V of this report).

Milk prices in Sri Lanka

The low protection means that the prices of milk in Sri Lanka, to both consumers and producers, are low. Farm-gate prices of milk have been declining in real terms in Sri Lanka over the past decade or so. This is shown by table 9.5 below which shows the 'real' farm-gate price of milk for selected years between 1975 and 1993.

Table 9.5:
Farm-Gate Prices of Milk in Sri Lanka (1975-93)

Period	Nominal producer price (Rs/lt)	Fat Content (%)	Standardised nominal price 1/ (Rs/lt)	Standardised real producer price 2/ (Rs/lt)
1975	1.6	4.0	1.6	9.5
1978 (from Nov.)	2.2	4.0	2.2	11.6
1980 (from Nov.)	2.6	4.0	2.6	9.8
1981 (from March)	2.8	4.0	2.8	8.9
1983 (from March)	3.8	4.0	3.8	9.6
1984 (from Sept.)	4.3	4.0	4.3	9.3
1988 (from April)	5.0	4.3	4.8	7.7
1989 (from Aug.)	5.5	4.3	5.2	7.5
1989 (from Nov.)	6.0	4.2	5.7	8.2
1990 (from June)	6.8	4.2	6.5	7.6
1991 (from Oct.)	8.5	4.3	8.0	8.3
1993 (from Oct.)	9.3	4.3	8.8	7.6

Source: Brown Copeland 1992. p.34; 1993 from Jones Overseas Ltd.
Notes: 1/ Standardised to 4% fat
2/ At December 1991 prices

The protection on milk products in Sri Lanka would seem to have been low compared to that in many other Asian countries (Brown Copeland 1992, 48) with the result that the prices of milk and milk products also seem to be very much lower than in many other Asian countries. This can be seen from tables 9.6 and 9.7 below. However, note that in 1991/92 the producer price in Sri Lanka was about 57% above that in New Zealand (see Brown Copeland 1992, 31), and according to the FAO, in 1988 the Sri Lankan producer price was about a third above that of New Zealand (see FAO 1988, Working Paper 6, 10). This suggests that it would be cheaper for Sri Lanka to import milk from New Zealand than to produce it domestically.

Table 9.6:
Price Comparisons of Milk in Asian Regions 1990

Country	Farm-gate price of milk (US cents/lt)	Retail Prices Pasteurised Milk (US cents/lt)	WMP US cents/kg)	Butter
Sri Lanka	15	16	237	324
India	25	35	367	367
Indonesia	18-24	106-122	na	na
Pakistan	18	36-44	na	244-289
Philippines	25-29	61-71	na	446
Nepal	29	33	407	333
Bangladesh	34-43	57	343	243

Source: Brown Copeland 1992, 49 (from FAO Workshop 1991)

Table 9.7:
1992 Retail Price Comparisons of Full Cream Milk Powder (WMP) in Asian Countries

Country	Index (Sri Lanka at Rs 127.5/kg=100)
Bangladesh	114
Philippines	137
Nepal	155
India	157
Thailand	163
Malaysia	169
Pakistan	193

Source: Brown Copeland 1992, 47 (from Nestles Ltd. March '92)

9.3 Milk Production and Protection in Sri Lanka

Slow growth in milk production

The Brown Copeland study claims that it is because of this low domestic producer price that milk production in Sri Lanka has expanded slowly over the past decade, as shown in table 9.8 below. (This is in spite of dairying receiving a large share of external assistance in livestock development over the past decade - Brown Copeland 1992, 15).

Table 9.8:
Estimated Milk Production and Collection in Sri Lanka (1976-91)

Year	Production (Mn. litres)	Formal collection (Mn. litres)
1976	210	60
1979	218	63
1982	254	56
1985	217	71
1988	219	64
1991	251(1990)	75

Source: Brown Copeland 1992, 15

The nominal rate of protection on milk in Sri Lanka

As is clear, the price to the producer has declined in real terms over the past decade or so. Until the privatisation of MILCO, the price of fresh milk was set by the price MILCO paid at the chilling centres, with the price being uniform across the country.[4] As shown in table 9.5, the price from October 1991 was Rs 8.50/lt (for 4.3% fat and 8.4% Solids-non-fat (SNF)). But as is also apparent from table 9.5, the setting of the price by MILCO has not meant that prices in Sri Lanka are high relative to those in other countries.

Indeed, the nominal rate of protection on the milk sector in Sri Lanka seems to have been quite low in recent years. Table 9.9 shows the international prices of whole milk powder (WMP) in 1988 and 1992 and converts these into their liquid milk equivalent (LME) at producer prices to derive estimates of the NPCs.

The FAO figures for 1987/88 appear to use unrealistically low estimates of packing and overhead expenses, but to some extent these are offset by the lower chilling centre and transport costs. In general, the Brown Copeland figures appear more reliable (cost and expenses estimates were independently confirmed by an adviser in the Department of Agriculture and by Jones Overseas Ltd.). A common conversion rate to liquid milk equivalent has been taken as 7.5 lt/kg for simplicity, as the difference between the FAO figure of 7.45 and the Brown Copeland figure of 7.6 was slight. Although the FAO figures were standardised for milk of 4.0% fat, and have been left as such, a standard of 3.7% fat has been assumed for the Brown Copeland data, with the actual domestic price standardised according to the index in table 9.1.[5]

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4 There are a number of ways in which the milk is collected. Farmers close to urban areas sell direct to retail outlets. The typical system involves groups of farmers, in cooperatives and livestock associations, delivering their milk to a central collection centre. Then the milk is bulked into 40-litre cans, and delivered to a chilling centre or direct to the processor. (There are 85-90 chilling centres, ranging in size from 1,500-15,000 litres). The processors then collect the chilled milk by insulated milk tanker (Jayanetti 1993, footnote 1). In Sri Lanka a small proportion of the rural labour force is involved in milk production. Of the 75% of agricultural land which is under small-holdings, about two-thirds is wholly devoted to cropping. The rest is a mixture of crops and livestock (Brown Copeland, 1992, 6). About three-quarters of the milk is obtained from cows, the rest from buffaloes (Brown Copeland 1992, 19). In areas where buffaloes are kept for draught, the herd sizes are generally large, varying from 10-15 in some herds to as many as 40-50 in others. Both males and females are used for draught, and the milk in these draught-type animals is around 1-1.5 litres a day with an average lactation of about 180 days (Brown Copeland 1992, 8). There are five clearly identifiable milk production systems in the country (see Brown Copeland 1992, 19 & 20, and FAO 1988, Working Paper 6, 4). Generally the dry zone is the lowest cost area, with costs rising through the Hill Country with the highest costs being in the Mid-Country and Coconut Triangle areas (see Brown Copeland 1992, 36).

5 Imported WMP currently consists of imports by Lanka Milk Foods (26% fat by weight; 3.5% LME) used mostly for whiteners comprising 45% of the market, and imports by Anchor (25.5% fat by weight; 3.8% LME) used mostly for 1-6 year olds comprising 55% of the market. The average fat content of imported milk powder LME is 3.7% fat. Note that most other countries classify milk not by fat and SNF, but by milk proteins and milk solids.

Table 9.9:
Comparison of Imported and Domestic Milk Prices

Item	1987/88 (a)	1992 May (b)
CIF Price of WMP (US$/MT)	1150	1770
Exchange rate (Rs./US$) (c)	30	43
CIF Price of WMP (Rs./kg)	34.5	76.1
Clearing and handling costs (Rs./kg)	0.7	0.4
Price in factory store (Rs./kg)	35.2	76.5
Packing expenses (Rs./kg)	)	6.7
Overhead expenses (Rs./kg)	) 1.0	5.8
Processor & wholesaler margins (Rs./kg)	)	6.0
Wholesale price (Rs/kg)	36.2	95.0
... equivalent to ...	...Rs/litre...	
Wholesale price of liquid milk on the basis of 7.5 lt/kg (d)	4.8	12.7
Cost of processing liquid milk	)	1.9
Transport cost from chilling centre to factory	) 0.7	0.6
Cost of operating chilling centre and milk collection	)	1.1
from producer		
Producer price equivalent	4.1	9.1
Actual domestic producer	(e)4.3	(f)7.5
NPC	1.0	0.8

Sources:
(a) FAO working papers No.6 (1988) table 4 details for milk of 4% fat content
(b) Brown Copeland 1992, 141 & 142
(c) 1987 Exchange Rate from FAO 1988 as above; 1992 from Brown Copeland
(d) 7.5 lt/kg taken as standard for imported milk powders
(e) 1987 price for 4% fat from Brown Copeland 1992, 34
(f) From Brown Copeland, 141 (standardised for 3.7% fat - average for imported milk powders - using table 9.1, i.e. 7.21Rs/lt for 3.3% fat = 7.21 x (100/95.7) Rs/lt for 3.7% fat)

The NPC of 1.0 or below derived for Sri Lanka appears to be lower than in other Asian countries - NRPs given for Thailand and the Philippines are equivalent to NPCs of 1.5 - 2.0; those for Indonesia and Malaysia 2.0 - 3.0 (Brown Copeland, 50). However, to bring about a significant increase in production, the NPC would have to be raised substantially since the domestic costs of production are high, as the next sub-section discusses.

It is important to assess whether the price comparisons made in table 9.9 are typical for a longer period. Table 9.10 shows import prices of WMP over the period 1983-92.

Table 9.10:
CIF Prices of Whole Milk Powder - 1983-1992

Year	1	2	3	4	5
	CIF Prices from Trade Statistics (Rs/kg)	Exchange Rate (Rs/US$)	CIF Prices from Trade Statistics (US$/MT)	Lanka Milk Foods CIF Purchase Prices (US$/MT)	LMF Annual Average (US$/MT)
1983				1204	1204
1984				1204	1204
1985				1103	1103
1986				1105	1105
1987				1087	1087
1988				1297	1297
1989				2100	2100
1990	77	40.2	1915	1340 &1621	1480
1991	60	42.6	1408	1530 & 1333	1432
1992	97	46.0	2109	1700 & 1800	1750
Average 1983-87					
(current prices)					1141
Average 1983-87					
(1990 prices)(a)					1653
Average 1988-92			(1990-92)		
(current/1990 prices)			1811		1612

Sources:
1. From External Trade Statistics, various years
2. From Central Bank of Sri Lanka Annual Report 1992, table 55
3. From 1 and 2
4. Lanka Milk Foods (LMF) accepted tender prices for 26% fat WMP
5. Simple averages taken, as imports were of similar quantities

(a) Converted according to G-5 MUV Inflation Index (WB 1993, ix)

The 5-year averages shown in 1990 prices reveal that over a long period, according to the Lanka Milk Foods import prices, the price of imported WMP has changed little in real terms. However, the LMF CIF price figures are inconsistent with those from the external trade statistics to the extent that they have not even moved in the same direction. Therefore, care must be taken in drawing conclusions from these average figures. There has been some suggestion that with EC milk output (over 20% of total world milk production in 1992) falling recently, and expected to continue to do so, the world WMP prices may increase in the near future. This will be reinforced if the Uruguay round of the GATT succeeds in reducing protection to farmers worldwide, thus reducing milk surpluses. This has been countered by arguments that expansion of milk production in China and other Asian countries may be very rapid (8% per annum) (USDA Food Outlook, May 1993, 22-23). If, however, world WMP prices do rise over the next few years, domestic milk production will become more competitive.

Costs of producing milk in Sri Lanka

Surveys of the cost of producing milk in Sri Lanka have generally concluded that costs are high in Sri Lanka relative to domestic prices. In 1984 a survey suggested that, at the then chilling centre price of Rs 3.8/lt (for 4.0% fat), the returns to family labour were below its opportunity cost. The next survey in 1986 came to a similar conclusion. It was thought that a rise of at least 20% above the average chilling centre price of Rs 4.30/lt (for 4.0% fat) was required to generate returns to family labour equal to opportunity cost. A 1990 survey concluded that it was only in the dry zone that the (opportunity) cost of production was below the average chilling centre price of Rs 6.45/lt (for 4.0% fat). In the Coconut Triangle, Mid-Country and Up-Country, the opportunity costs (on the basis of a daily opportunity cost of labour of Rs 30.0/ labour day) were considerably above the average chilling centre price (see Brown Copeland 1992, 32). Brown Copeland's updated figures for 1992 (using an average daily opportunity cost of labour of about Rs 62.0) gave opportunity costs of Rs 7.7/lt (4.3% fat) in the dry zone, rising to over Rs 10.2/lt (4.3% fat) for the Hill Country, Mid-country and Coconut Triangle (Brown Copeland 1992, 36).

Brown Copeland believed that, at a CIF price of US$1800/MT (average taken for May/ June 1992), a 40% tariff would be required to generate a milk self-sufficiency ratio of one third. But, they pointed out that the cost of this to consumers would be Rs 1.5 bn, while the benefit to producers would be only Rs 0.2 bn. Thus, they thought that only if world whole milk prices rise to above US$2,000/MT could the liquid milk industry be expected to expand significantly in Sri Lanka (at present productivity levels). Note that at lower elevations in Sri Lanka, climatic conditions cause heat stress in high yielding cattle so that lactation yields will remain relatively low (FAO 1988, Working Paper no 6, 9). There seems to be little justification for Brown Copeland's suggestion of an NPC on milk of 40%.

Detailed production costs were not given in the Brown Copeland study so that it has not been possible to estimate a real resource cost ratio for milk production. However, it is probable that, on a real resource cost basis, an import duty at recent levels of 10-15% is justified. This, combined with the real world price of milk being maintained at least at present levels, suggests that milk production in Sri Lanka (especially in the dry zone) will increase; but, once again here, the constraints to production appear to be on the supply-side.

10. The tree crops sector

10.1 Tree crops in the Sri Lankan economy - a brief perspective

Tree crops in Sri Lanka means tea, rubber and coconuts. Ten years ago, tea, rubber and coconuts provided about 6.9% of Sri Lanka's GDP and about 47% of total exports whereas by 1992 these shares had dropped to 4.2 and 20% respectively (see Central Bank's Annual Report 1992, tables 3 and 35). Thus there has been a sharp decline in the relative importance of this sector. Table 10.1 shows that there has been a decline in all three tree crops.

Table 10.1:
Value added and exports of tea, rubber and coconuts - Sri Lanka 1990-1992

	Value added (1982 prices)				Exports			
	1982		1992		1982		1992	
	Rs bn	%	Rs bn	%	Rs bn	%	Rs bn	%
Tea	2.4	2.5	5.3	1.3	6.3	29	14.9	14
Rubber	0.8	0.8	1.7	0.4	2.3	11	3	3
Coconuts	3.3	3.5	9.7	2.5	1.5	7	3.7	3
Totals	94.7	100	384	100	21.5	100	110.1	100

Source: Central Bank of Sri Lanka, Annual Report, 1992, Tables 3, 35.

10.2 Protection of tree crops and restructuring - a historical perspective

The causes of this decline are seen as all or some of the following:

- falling world prices (especially for tea and rubber)
- strong competition from new entrants (e.g. Kenya in tea)
- the nationalisation of the tree crop sector in Sri Lanka in the 1970s (under the Land Reform Laws of 1971 and 1975), placing a large part (about two-thirds of tea production, one-third of rubber production and a much smaller percentage of coconuts) of the tree crop sector in the hands of an inexperienced state bureaucracy
- the state's continued intervention in the labour market
- inadequate research and development support
- (excessively) high (export) taxation of the tree crop sector

To discuss the relative contribution of each of these is beyond the scope of this report. It is only the last of these which is relevant here.

As section 3 pointed out, Bhalla, in an article on Sri Lanka in Krueger et al, 1991, emphasised the heavy taxation of the tree crop sector over the period 1953-1985. For 5-year averages over that period, tree crop (export) taxes provided between 20% and 30% of all government revenue (ibidem 1991, 204). Over this period the direct protection of the tree crops sector was always heavily negative - as shown in table 10.2.

Table 10.2:
NPCs for Tree Crops 1953-1985 (from Bhalla 1991)

NPC	1953-55	1956-60	1961-65	1966-70	1971-77	1978-85	1953-85
Tea	-19	-25	-24	-26	-21	-41	-27
Rubber	-10	-9	-14	-12	-25	-39	-21
Coconut	-26	-22	-21	-26	-22	-21	-23

Source: Bhalla in Krueger et al, 1991, table 6-6, 214.

In all cases and for all periods the (negative) effective rates of protection were greater than the nominal rates, but only by between 5 and 15 percentage points (see Bhalla 1991 214) so that they have not been shown separately in table 10.2.

However, in the context of the tree crop sector, there were two defects in Bhalla's methodology. First, he seems to have treated coconuts as an exportable commodity. As discussed below, most of the coconut production in Sri Lanka is sold domestically. Second, Bhalla treated Sri Lanka as a 'small country' and therefore as a price-taker for all tree crops. Thus the whole burden of the export taxes on tree crops was assumed to be borne by the producers in Sri Lanka. This is a reasonable assumption for rubber where Sri Lanka's share of world production is small (over the 1982-84 period, Sri Lanka's share of world production for rubber was less than 4% - see World Bank 1988, table 9). However, for tea, this is less convincing since Sri Lanka's share of world exports was 22% in 1981 and about 19% in 1991. As Lipton has pointed out, there is a 'fallacy of composition' in considering each of the major producers as a 'small country' in isolation from the others (Lipton 1987). As a result, production in each country is assessed on the basis of FOB prices and independently of other countries' production levels. However, the likely collective effect is for a decline in 'real prices' as expanding production is sold in a market characterised by low income and price elasticities of demand. In this context, it is interesting to note the dramatic decline in the real price of tea over the 1970s and 1980s. Between 1970 and 1990, the real tea price fell by 59% (World Bank 1993, 5).

Thus there is a case for considering the imposition of an optimum export duty on tea in Sri Lanka. However, for this study it is sufficient to note that the negative protection for all the tree crops is now quite small, since a major plank of the World Bank-inspired restructuring of the tree crop sector has been the reduction of export duties. The other significant step in the recent restructuring has been the privatisation

of the management of the estates through 22 private companies (see World Bank 1993, 3).

10.3 Protection in the 1990s - Tea

By 1990, the export levies (duties, ad valorem tax and export cess) on the tea sector had been reduced to 11% of the FOB price (see World Bank 1993, XX), but in December 1992 the ad valorem tax and export duty were abolished, leaving only the cess which amounts to only about 2% of the FOB price. Thus the direct (negative) nominal protection on tea is now negligible (especially if the replanting subsidy of about Rs 1/kg - see World Bank 1993, 37 - is taken into account).

According to the World Bank, the DRC ratio of the tea industry is low in spite of low yields. The DRC ratio on state tea lands is estimated to be 0.8, which is higher than the DRC on private holdings, estimated to be 0.6 - see World Bank 1993, Annex III[1] - because yields on state tea lands are lower (World Bank 1993, 10).

10.4 Protection in the 1990s - Rubber

For rubber there was also heavy negative protection through the 1980s, but by 1990 the export levy was down to about 29% of the FOB price (World Bank 1993, XXI). The duty on rubber exports was completely abolished by December 1992. In the rubber industry (as in tea) there is a subsidy on replanting so that although the direct protection is negative it is (as for tea) quite small (less than 5%).

The DRC ratio on rubber in Sri Lanka is low (only about 0.4 on small-holdings and 0.7 on state holdings - World Bank 1993, 22) in spite of low yields. The average yield in Sri Lanka is only about 800 kgs per hectare compared to average yields almost double this in Malaysia, Indonesia and Thailand (World Bank 1993, 20). Since the rubber sector in Sri Lanka is dominated by small-holders, who accounted for about two-thirds of total output in 1990 (World Bank 1993, 18), the weighted average DRC in Sri Lanka is about 0.5.

10.5 Protection in the 1990s - Coconuts

Production and exports

By contrast to tea and rubber, most of the coconut produced in Sri Lanka is sold domestically. Total coconut production in 1992 amounted to 2296 million nuts, of which approximately 81% was consumed domestically, and 19% was exported (CDA 1992, table1). Coconut products can be classified as kernel products, husk products and shell products; the latter two products are by-products in the manufacture and consumption of kernel products. Exports of nuts are a very small proportion (less than

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1. The DRC was calculated by the World Bank 1993 report on the basis of an 11% premium on the exchange rate and a 90% shadow wage rate for labour (World Bank 1993, Annexures II and XII).

1%) of total nut production. Production, exports and consumption figures for kernel products -- coconut oil, copra and desiccated coconut -- are given in table 10.3.

Table 10.3:
Production, Exports and Consumption of Coconut Products in Sri Lanka 1987-1992

Year	Coconut Oil (1000 MT)			Copra (1000 MT)			Desiccated Coconut (1000 MT)		
	Production	Export	Consumption	Production	Export	Consumption	Production	Export	Consumption
1987	71.6	17.3	54.3	125.4	9.0	116.4	51.4	53.2	2.0
1988	34.5	5.4	29.1	62.0	5.8	56.2	22.8	22.4	0.4
1989	74.6	29.7	44.9	129.6	8.3	121.3	46.9	43.2	3.7
1990	74.8	12.2	62.6	128.8	7.3	121.5	55.3	52.7	2.6
1991	32.6	1.0	31.6	60.6	7.7	52.9	49.3	46.8	2.5
1992	30.2	2.4	27.8	55.0	5.9	49.1	53.6	53.3	0.3
Average 1987-92	53.1	11.3	41.7	93.6	7.3	86.2	46.6	45.3	1.9
% 1987-1992	100	21	79	100	8	92	100	97	3

Notes and Sources:
CDA (1992), tables 10, 14
Consumption = Production - Exports
In 1987, more desiccated coconut was exported than produced because of the carry-over of stocks from the previous year.

The importance, in terms of export earnings (1992), of coconut products is given in table 10.4. Export earnings of kernel products accounts for approximately 65% of the total, of which desiccated coconut alone accounts for 82% of export earnings from kernel products.

Table 10.4:
Exports of Coconut Products 1992

Item	FOB Value
	Rs. mn.
1.0 Kernel products	2886
1.1 Fresh coconuts and seed nuts	216
1.2 Coconut oil	105
1.3 Copra	188
1.4 Desiccated coconut	2366
2.0 Coir products (mattress fibre, bristle fibre, coir yarn, coir twine, etc.)	739
3.0 Shell products (charcoal, coconut shell pieces, activated carbon, etc.)	784

Source: CDA 1992, tables18, 37, 38, 39, 40, 41, 44, 50

Over the period 1987-92, approximately 97% of total desiccated coconut production was exported and therefore, this product can be unambiguously treated as an exportable. By contrast, over the same period, roughly 8% of total copra produced and 21% of total coconut oil produced was exported (note that copra is an input of the coconut oil industry). According to the Central Bank Annual Reports, there were no imports of coconut products up to December 1992. However, following the duty concessions given to coconut oil imports in January 1993 (see below), approximately 25,000 MT of coconut oil has been imported during the first ten months of 1993, while the figure for exports is 1,600 MT (verbal communication from CDA sources).

Tariffs on Coconut Products

The system of export duties on coconut products which prevailed until December 1992, when all duties on the export of coconut products were abolished, depended on the FOB price of one metric ton of coconut oil which operated as a threshold price. For instance, the threshold price of coconut oil in November 1992 (just prior to the abolition of all export duties on coconut products) was Rs. 28,000/MT. At this price of coconut oil, Rs. 500 was levied on a ton of copra and Rs. 750 on a ton of desiccated coconut. Beyond this price threshold, specific duties on a sliding scale were levied. Even though export duties on coconut products were abolished in December 1992, cesses - introduced in September 1991 - continue to be levied on exports.

Although the import of coconut products is subject to heavy gazetted import duties, because of the high domestic price of coconut oil, a concessionary duty rate of 20% has been levied on this product since January 1993 instead of the gazetted 50%. Substitutes for coconut oil like palm kernel oil and soya oil are taxed heavily at 50% and 35% respectively. Table 10.5 shows the system of export cesses and import duties currently in operation.

Table 10.5:
Export Cesses and Import Duties on Coconut Products
(November 1993)

HS Code	Exports	Cesses
	Fresh nuts (Rs/1000 nuts)	500
	Coconut oil (Rs/MT)	400
	Desiccated coconut (Rs/MT)	500
	Copra (Rs/MT)	550
	Imports	**Duties**
801.1	Fresh nuts	50%
15.13	Coconut oil	20%
1203	Copra	50%

Source: Customs Statistics Department

Consumption

Production, export and consumption figures for 1991 for coconut oil and desiccated coconut given in table 10.3 correspond to those given in the Food Balance Sheet (table 85b) of the 1992 Statistical Abstract. The Food Balance Sheet also gives figures for the production, exports and consumption of coconuts as 743, 8 and 735 thousand metric tons respectively. According to the Consumer Finance and Socio-Economic Survey 1986/87, Part ii (table 4.37), coconuts account for 6% of the average Sri Lankan consumer's food budget. In addition, cooking oil accounts for 1.4% of the expenditure on food and, given the food habits of the majority of Sri Lankans, it can be safely assumed that expenditure on coconut oil accounts for most of this figure. Coconut oil provides 32 calories per capita, per day, while coconuts provide a daily per capita intake of 366 calories. These products together account for 17% of total daily per capita calorie intake. The average Sri Lankan consumes 30 kgs of coconuts and 1.3 kgs of coconut oil per annum (table 85b, Statistical Abstract 1992).

Protection, and the effect on consumption and production

In World Bank 1991, 101, the direct protection coefficient on coconuts is given as 1.2 for 1987. It is not easy to see the source of this. On page 106, a border price of Rs 2.52 per nut is compared with a farm- gate price of Rs 3.29 per nut, but this gives a protection coefficient of 1.3, not 1.2. The source of the border price is not given and it is difficult to see how the border price was arrived at since there is little trade in coconuts as such. Here the protection has been estimated for each of the main coconut products, but it is worth noting that a similar conclusion is reached as to the overall level of protection.

Coconut oil

In the five-year period (1987-1992) approximately 79% of the coconut oil produced in Sri Lanka was consumed domestically, and the rest exported (see table 10.3 above). Exports of coconut oil for the last three years have been insignificant because the domestic price has been much higher than the international price. Traditionally, coconut oil is regarded as an exportable in Sri Lanka. But its high domestic price relative to the world price, and the possibility of coconut oil imports substituting for domestic oil consumption, make it also an importable. In other words, the market is segmented. Hence, the average nominal protection coefficient (NPC) facing the producer may be different from the average NPC facing the consumer.

Table 10.6 shows the Nominal Protection Coefficient as a ratio between the domestic wholesale price and the border price. Accordingly, between 1990 and 1992, the price to the consumer has been about 40% on average above the border price equivalent (at the official exchange rates). Given that the import duty on coconut oil was 50%, the difference between the border price and the wholesale price more or less represents the import duty.

Table 10.6:
Protection on Coconut Oil 1990-92

	1990	1991	1992
1. Domestic wholesale price (Rs/kg) (Colombo)	18.4	31.1	41.4
2. CIF Price (US$/kg)	0.34	0.43	0.54
3. Exchange Rate (Rs/US$)	40.2	42.6	46.0
4. CIF Price (Rs/kg)	13.7	18.3	24.8
5. Port charges, handling, transport (Rs/kg)	0.40	0.44	0.48
6. Importer's margin	0.96	1.28	1.74
7. Border Price at wholesale stage (Rs/kg)	15.0	20.0	27.1
NPC	1.2	1.6	1.5

Notes and Sources:
1. From CB AR 1992, Table 41
2. From World Bank1993, Table 2
3. From CB AR 1992, Table 55.
4. row3 x row4
5. From Laursen (1990). The figure for 1992 has been inflated by the % change, of 1992 over 1991, of the Wholesale Price Index (CB AR 1992, Table 24)
6. Taken as 7% of CIF price. This is the same ratio used by Laursen (1990).
7. row 4 + row 5 + row 6

Calculating the NPC faced by producers has been confounded by the fact that the FOB price per ton of Sri Lankan coconut oil (see CB AR 1992, table 41) has been very much above the CIF (Rotterdam) price quoted in World Bank 1993. The latter refers to edible coconut oil exported by the Philippines which has more than 1% of FFA (Free Fatty Acid). In contrast, the relatively small Sri Lankan exports of coconut oil contain less than 1% of FFA and hence are sold at a price almost twice that of the world market price, most of it to Bangladesh where it is used in the cosmetics industry. In addition, it has not been possible to estimate the export duty rate for 1990-1992. Therefore, making the heroic assumption that it would have been about 20%, we get an NPC for exports of 0.9 for this period. Thus, the price faced by the producer is the weighted average of the NPC on exports and the NPC faced by the producer in the domestic market which is 1.4 (see table 10.6). The weighted average NPC is 1.3.

The situation in 1993 is somewhat different. With respect to Sri Lankan sales, import duty on coconut oil has been reduced to 20%. Hence the NPC facing consumers is approximately 1.2. With regard to exports, export duty has been abolished and only export cesses are levied. Hence the NPC on exports is approximately 1.0. This yields a weighted average NPC facing producers of 1.1.

Copra

Copra can be regarded as an importable since only 7% of total production is exported. Accordingly, table 10.7 indicates that the NPC was on average 1.4 over the

period 1990-1992. Thus the domestic price of copra has been about 40% above the border price due to import protection.

Table 10.7:
Protection on Copra 1990-1992

	1990	1991	1992
1. CIF Price (US$/kg)	0.23	0.29	0.38
2. Exchange Rate (Rs/US$)	40.2	42.6	46.0
3. CIF Price (Rs/kg)	9.2	12.4	17.5
4. Port charges, handling, transport (Rs/kg)	0.40	0.44	0.48
5. Importer's margin	0.65	0.86	1.22
6. Border Price at wholesale stage (Rs/kg)	10.3	13.7	19.2
7. Wholesale Price - Est. No. 1 (Rs/kg) Colombo	13.2	22.3	27.2
NPC	1.3	1.6	1.4

Notes and Sources:
1. CIF Prices for copra are from World Bank 1993, Table 2.
2. End of Period Exchange Rates from CB AR 1992 (Table 55)
3. row1 x row2
4. From Laursen (1990). The figure for 1992 has been inflated by the % change of 1992 over 1991 of the Wholesale Price Index (CB AR 1991, 1992, table 23,24).
5. Taken as 7% of CIF price; this is the same ratio used by Laursen (1990)
6. row 3 + row 4 + row 5
7. From CB AR 1992, Table 41

Desiccated Coconut

Since only about 2-3% of total desiccated coconut produced in Sri Lanka is consumed domestically, this product is clearly an exportable. Table 10.8 indicates that Sri Lankan producers of desiccated coconut faced an average NPC of 0.83 over the period 1990-1992. Thus the price they faced in the domestic market was approximately 17% below the price at which Sri Lankan desiccated coconut competed in the international market.

Table 10.8:
Protection on desiccated coconut (1990-1992)

	1990	1991	1992
1. Domestic wholesale price (Rs/kg)	22.3	26.2	38.4
2. FOB. Price (Rs/kg)	26.9	32.8	44.4
NPC	0.83	0.80	0.86

Notes and Sources:
1. and 2. From CB AR 1992, table 41.

Table 10.9 gives a summary of the NPCs for the three kernel products discussed above. When weighted by the average production figures (1990-92) for each commodity, an overall NPC of 1.2 for producers and of 1.4 for consumers emerges for the sector as a whole. This corresponds to the overall level of protection obtained in the World Bank study (1991) as mentioned above. However, under the 1993 tariff regime, consumers face an NPC of 1.2 and producers face a weighted average NPC of 1.1.

Table 10.9:
NPCs on Coconut Products (1990-1992)

	Production NPCs			Consumption NPCs
	Domestic Use	Exports	Average	
Coconut oil	1.4	0.9	1.3	1.4
Copra	1.4	0.9	1.3	1.4
Desiccated Coconut		0.9	0.9	
Weighted			1.2	1.4
Weights (1000 MT)				
Coconut oil	122	15	137	
Copra	223	21	244	
Desiccated Coconut	5	153	158	

Compared with its competitors, Sri Lanka's coconut yields are low. However, production costs are also low, such that the industry is profitable. The DRC ratio for the state sector in 1988 is given as 0.33. The DRC is lower for the private smallholder sector which has higher average yields (World Bank 1993, Annex V). However, it should be noted that 1988 was an exceptionally good year for rainfall reliability (see CDA 1992, table 5). Nevertheless, it seems that Sri Lanka has a strong comparative advantage for coconut production (World Bank 1993, 28).

Appendix I

TERMS OF REFERENCE (MODIFIED) FOR THE STUDY OF EFFECTIVE PROTECTION IN SRI LANKA

Dr Chris Edwards,
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7th April 1993

The IDA has agreed, under the Public Manufacturing Enterprises Adjustment Credit (PMEAC), to finance an effective protection study to be executed by the IPS with my help. The purpose of this short paper is to set out my understanding of the modified terms of reference and objectives of this study.

A paper that I drafted for, and briefly presented to the Commissioners of the Presidential Tariff Commisssion (PTC) in November 1992 provides a background for this study. In that paper I reviewed some aspects of the 1991 PTC report on protection in the manufactiuring sector and I made some suggestions for the future analysis of protection and for policies to be pursued by the PTC. In that paper, I emphasised that if future studies are to be the responsibility of consultants they should work closely with counterpart staff in the PTC so that local expertise is continuously developed.

Subsequently to my paper, agreement has been reached between the World Bank and the Government of Sri Lanka that the study of protection will be carried out covering the two objectives as set out in my paper namely:

(i) to upgrade the capability of the staff of the Presidential Tariff Commission to carry out studies of effective protection;
(ii) to review, compare and update the studies of effective protection in the manufacturing sector of Sri Lanka

However, in agreeing to the study, the World Bank has asked for the study to cover agriculture, in addition to the industrial sector. Accordingly following my arrival in Sri Lanka on April 4th 1993 to begin the study, I have discussed the extension of the terms of reference with officials in the World Bank and the Government of Sri Lanka. It has been agreed that the study will be extended to cover agriculture, including rice, tree crops and 'other agriculture'.

Thus it is envisaged that in addition to the 'original' two objectives, the study will be extended to review, compare and update studies of protection in the agricultural sector where these have been carried out (an example is the 1991 IFPRI/ARTI study on rice) and to carry out additional date collection where necessary.

The major objective of the study remains as before, namely to assist in the upgrading of the capability within the Sri Lankan government of carrying out studies of effective protection and of drawing out the policy implications. I think that it is fair to say that the studies of effective protection that have been carried out on the manufacturing sector in recent years have involved little participation by government staff in Sri Lanka. It is not only desirable that this study be different but necessary. It is desirable to enable Sri Lankan staff to gain experience in the analysis of protection; it is now also necessary (as well as desirable) given the extension of the study to cover agriculture.

It has been agreed that my assignment will be for two periods, one month in March/April 1993 and two months in September/October 1993. In this first period, I will do the following:

(i) review the studies that have been done on protection in the agricultural and the manufacturing sectors over the past 5 to 10 years and summarise their results;
(ii) identify the further information that needs to be collected to fill the gaps or to update the studies;
(iii) set out and agree guidelines for the collection of further information (especially on direct price comparisons) by counterpart staff from the PTC.

I am anticipating that two staff will be assigned to work as counterparts on this study, that these staff will work with me during the rest of this month and will be available to continue to work on the study from the beginning of May to the end of October 1993.

In my second visit to Sri Lanka covering September and October 1993, I anticipate that I (together with the two counterparts) would produce a report which would analyse the protection in the agricultural and manufacturing sectors and provide policy guidance. I wish to emphasise that the analysis will be presented in the report in such a way that both the source of the information and the method of analysis are clear. I have succesfully completed and presented such a report on effective protection in Malaysia in 1990 when working as Chief Technical Adviser to the Economic Planning Unit and Ministry of International Trade and Industry. It is intended that such a presentation, together with the active involvement of counterpart staff, will ensure that studies in the future can be carried out without dependence on foreign consultants.

Appendix II

PROTECTIONISM AND POLICY IN AGRICULTURE AND INDUSTRY: SRI LANKA

PROGRESS REPORT
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(as modified following a meeting
with the PTC on 24th April 1993)

1. THE CONTEXT AND OBJECTIVES OF THIS REPORT

This is a brief progress report written after working for a little over three weeks in Sri Lanka between April 3rd and April 29th 1993. It is a progress report on a study of effective protection in the agricultural and manufacturing sectors in Sri Lanka. The progress report was discussed with the Presidential Tariff Commission (PTC) at a meeting of April 24th 1993. This is a slightly modified version. The IDA has agreed, under the Public Manufacturing Enterprises Adjustment Credit (PMEAC), to finance this study at a cost of $50,094. The terms of reference for the study are attached to the end of this report. I am scheduled to return to Sri Lanka at the beginning of September 1993 for a longer (two months) visit. The final report will be completed and submitted at the end of that visit, that is in October 1993.

From the terms of reference for this study, it can be seen that the objectives of this first period of work were;

- to review the studies on effective protection in Sri Lanka over the past 5 to 10 years;
- to identify the information that needs to be collected and
- to set out and agree guidelines for the collection of further information (especially on direct price comparisons in agriculture and manufacturing) by counterpart staff from the PTC.

These objectives have been fulfilled. Early in my stay the terms of reference for the study were modified and agreed with the World Bank and the PTC and the assignment of two counterpart staff to the study was agreed at meetings of the PTC. In addition interviews have been held and information collected from a range of officials and consultants. Some progress has been made in analyzing the studies that have been done on agricultural commodities and in collecting further data. As a result a start has been made on a draft of the final report. Furthermore three half-day training sessions have been held with the two counterpart staff allocated to the study and a detailed

programme of work agreed with them for the period from the middle of April 1993 through to the end of September 1993.

The aim of this report is to briefly summarise the progress made so far, to provide a framework for the work being done by the counterpart staff in the PTC and to request an increase of 12.5 per cent in the budget for the project (see page 6 of this report).

2 THE COVERAGE OF THIS STUDY IN TERMS OF SECTORS AND COMMODITIES

As stated above, it is intended that this study will cover protectionism in both the agricultural and manufacturing sectors of Sri Lanka. What does this mean in terms of specific commodities or products?

The focus of the study is on assessing the desirability and effects of a further liberalisation of trade. This means that it is sensible to emphasise those commodities or products which are heavily protected or heavily discriminated against. In analyzing the protection, I have split the agricultural and manufacturing sectors into three sub-sectors as follows;

A. tree crops (tea, rubber and coconuts);
B. the paddy, wheat flour and 'other agriculture' sub-sectors;
C. manufacturing (the 'factory industry' sub-sector).

Where necessary, where possible and where time and the quality of data permit, I am assessing the protection in each sub-sector by carrying out direct price comparisons. Otherwise, given the limited time and resources available for this study, the emphasis will be on bringing together the data and the analyses in other studies so as to avoid unnecessary duplication. The final report will attempt to present the results in as simple a way as possible so as to facilitate policy-making.

The emphasis will be on highlighting both the 'production' effects of protection (by estimating the effective protection coefficients (EPCs), the Net Subsidy Equivalents (NSEs) and the real Domestic Resource Costs of earning Foreign Exchange (DRCs/FE) in the various sub-sectors) as well as the 'consumption' effects.

In sections A-C below, I set out for each of the three sub-sectors;

(i) the coverage of the sub-sector;
(ii) the approach that is being adopted by this study, the information to be collected and the likely sources of information;
(iii) the studies that have been done over the past five years or so and which seem (from a quick reading) to be relevant to this study. I list here only those 'special' studies additional to the regular published reports of the Central Bank, the Department of Census and Statistics, Department of Agriculture, etc);

(iv) the studies that are being carried out, seem likely to be relevant and which are likely to be available between now and September 1993.

A. TREE CROPS

(i) INTENDED COVERAGE; under this heading the study will include the processing of tea, rubber and coconuts, which the Central Bank includes within the manufacturing sector under the heading of 'export processing'. Defined in this way the value added of the tree crop sub-sector was 6.9% of Sri Lanka's GDP in 1991, compared to 8.8% in 1982 (see CBoSL AR 1991, table 2).

(ii) THE APPROACH BEING ADOPTED AND THE INFORMATION BEING COLLECTED; The study will estimate the effective protection coefficients (EPCs), the NSEs and DRCs/FE for the tea, rubber and coconut products over the past 5 to 10 years. To do this the study is collecting data on the costs of production of the major products and the nominal protection on the outputs and traded inputs.

(iii) RELEVANT STUDIES THAT HAVE BEEN CARRIED OUT WITHIN THE PAST 5 TO 10 YEARS

- Maxwell Stamp 1991;
- Asian Development Bank 1990 (Vol 2; Annexes 1-3)

(iv) STUDIES THAT ARE SCHEDULED TO BE COMPLETED BETWEEN NOW AND SEPTEMBER 1993 AND WHICH PROMISE TO BE RELEVANT - none.

B. THE PADDY, WHEAT FLOUR AND 'OTHER AGRICULTURE' SECTORS

(i) INTENDED COVERAGE; this is a large sector and the one on which I will focus most of my attention. The counterpart staff will be assisting me in this part of the study from August 1993 but at least initially (because of their experience with the manufacturing sector and while I complete my analysis of the agricultural data so far collected), they will focus their attention on the manufacturing sector.

From the production side, paddy and other agriculture accounted for 17.9% of GDP in 1991 (CBoSL AR 1991 Table 2). In addition to the commodities produced in Sri Lanka, there are those commodities which are imported in significant quantities and which are important in the consumption budgets of Sri Lankans. The most important of these is wheat flour. Wheat is not produced in Sri Lanka but wheat flour accounts for about 14% of total calorie intake in Sri Lanka (1989 figure from DCS 1991, 225-226) and for about 17% of total expenditure on food and drink (1985/1986 data from DCS

1985/86, 67). Finally, in addition to the agricultural commodities presently produced in Sri Lanka or imported in significant quantities, I will look at the protection on (or discrimination against) those horticultural commodities which seem to offer promise as new exports (see Dunham 1992, 22)

(ii) THE APPROACH BEING ADOPTED AND THE INFORMATION BEING COLLECTED; for this sector, I have been focusing my attention on the costs of production and the net returns per hectare and per labour-day in terms of both domestic and free trade prices. This is being done for the major commodities being produced in Sri Lanka. In addition, costs of production and net returns are being estimated for the commodities which offer potential. Finally, the protection is being estimated for the imported commodities.

My emphasis so far has been on the comparison of prices for outputs since traded inputs are much less important for this 'sector' as compared with manufacturing. Nevertheless the cost of production data are important for calculating the incentive effects - the returns per hectare and per labour-day. By September 1993 this collection of price data will be completed and the difficult task undertaken of assessing the effects of protection given the 'joint production' effects in non-plantation agriculture and the substitution effects in consumption.

The major focus in this sector as in the others is on those commodities the markets for which seem to have been most heavily-protected and/or controlled (the major ones being rice, wheat flour, potatoes, big (Bombay) onions and red onions, chillies and red lentils). The price comparisons should confirm which commodities have been and are most heavily-protected.

(iii) RELEVANT STUDIES THAT HAVE BEEN CARRIED OUT WITHIN THE PAST 5 TO 10 YEARS; there are numerous studies that have been carried out in recent years on the commodities covered under this heading. The major ones published since 1987 and to which I have obtained access are;

- Alex et al 1989;
- ADB 1990 (Vol 2, Annexes 4-6);
- Borsdorf 1992;
- Borsdorf 1993;
- Dunham 1992;
- Edirisinghe 1990;
- Gleason et al 1990(a);
- Gleason et al 1990(b);
- IIMI 1990;
- Jiron 1987;
- Shand (ed) 1990

The studies by Alex et al 1989, ADB 1990, Borsdorf 1992 and 1993, Edirisinghe 1990 and Jiron 1987 in particular contain useful data on price comparisons. In addition cost of production data and price data have been

and will continue to be collected from the ARTI, FAO and the various relevant Ministries, Departments and parastatal organisations.

(iv) STUDIES THAT ARE SCHEDULED TO BE COMPLETED BETWEEN NOW AND SEPTEMBER 1993 AND WHICH PROMISE TO BE RELEVANT;

- a study by Bob Hunt of the World Bank on protection in the agricultural sector - not due to be completed it seems until the end of 1993;
- a study by a team led by Hugo Diaz of the World Bank on poverty assessment in Sri Lanka. This included some price comparisons of particular commodities and the effect on poverty. The report is expected to be produced within the next few months, that is by the middle of 1993;
- a study of the impact of wheat imports, prices and consumption on staple food production is expected to be financed by USAID for execution in the middle of 1993

C. THE MANUFACTURING ('FACTORY INDUSTRY') SECTOR.

(i) INTENDED COVERAGE; This part of the study is looking at what the Central Bank refers to as 'factory industry'. 'Export processing' of tea, rubber and coconuts will be covered under the tree crop sub-sector. In 1991, 'factory industry' and 'export processing' accounted for 92% of total value added in the manufacturing sector (the remaining 8% consisting of 'small industry and other'). Thus by covering 'factory industry' and 'export processing', this study will cover the vast bulk of the manufacturing sector.

(ii) THE APPROACH BEING ADOPTED AND THE INFORMATION BEING COLLECTED; Many studies of protection of the manufacturing sector have been carried out in the past 8 years, the most recent ones being PTC Report 1991 (covering 1988) and Maxwell Stamp 1993 (two volumes). As yet and in spite of numerous attempts, I have not been able to get access to volume 2 of the Maxwell Stamp 1993 report. By contrast with the Maxwell Stamp report, which contained studies of 56 companies, the PTC 1991 report studied protection by sub-sectors, as did its predecessors. This study will compare the EPCs, NSEs and DRCs/FE derived by the previous studies for each of the major industries (at the 4-digit ISIC level) and identify and explain major differences in the studies. Using the previous studies, the study will then derive the input-output coefficients for each of the major sub-sectors (defined at the four-digit level) and update the EPCs, NSEs and DRCs/FE to 1992 making direct price comparisons for both traded outputs and traded inputs wherever possible. Most of the data analysis for this part of the study will be carried out by two counterpart staff based within the PTC.

(iii) RELEVANT STUDIES THAT HAVE BEEN CARRIED OUT WITHIN THE PAST 5 TO 10 YEARS;

- Walton 1987;
- PDP Consultants Ltd., 1990;
- PTC 1991;
- Maxwell Stamp 1993, Vols 1 and 2

(iv) STUDIES THAT ARE SCHEDULED TO BE COMPLETED BETWEEN NOW AND SEPTEMBER 1993 AND WHICH PROMISE TO BE RELEVANT;

- a study by Frank Flatters on dumping (to be carried out in June or July 1993 for the Ministry of Industries)

3. THE FUTURE PROGRAMME OF WORK AND REQUEST FOR ADDITIONAL RESOURCES

The time presently allocated to me (and budgeted) for this study is three months. This report is being written at the end of the first of two visits to Sri Lanka. This first visit has covered a period of 27 days. The original plan was that I should make a second visit to Sri Lanka of a little over two months in September and October 1993 with the report being completed by the end of October 1993.

I expect to spend about 10 days working on the study in the UK to achieve two objectives;

(i) answer any queries from the counterpart staff and to direct their work - a week-by-week programme of work has been drawn up for the counterpart staff covering the months of May through to the end of July and progress on this work will be monitored by Ben Isaac (consultant to the PTC) and by me from the UK.
(ii) to complete the analysis of the material and data collected on the agricultural sector and to collect, if possible, additional data from the studies that are in progress.

The original plan for the study was for an input of three months or 90 days from me. Thus the 27 days of this first visit to Sri Lanka plus 10 days of work in the UK leaves 53 days for the second visit to Sri Lanka. However it would be useful if the second visit could cover about 9 weeks that is 63 instead of 53 days. This means an extra input by me of 10 days. The cost of this in terms of fee (at $300 a day) and subsistence in Colombo (at $106 a day) would be $4,060. There would be no additional travel expenses.

At the meeting of the PTC on 24th April 1993, it was agreed that two counterpart staff (Bandula Amarasiri and Ms. Sesha Ariyatilake) will be assigned to the study for four days in each week. However the PTC has stated that to enable them to be assigned to the study and for the normal work

of the PTC to be completed, it will be necessary for the four staff of the PTC to work on Saturdays during the field-work period. It is expected that the counterpart staff will be doing field work from the beginning of May through to the end of September 1993, that is for about 22 weeks or about 88 days on the basis of 4 days a week. It is expected that their field work would end at the end of September 1993, although they would continue to assist me in the study during October, when I expect to be completing, presenting and discussing the report.

The cost of the work for 22 Saturdays over the five-month field work period between the beginning of May 1993 and the end of September 1993 is estimated below.

	Rs '000 (at Rs 48/US$)	US$
- Ben Isaac, consultant: 22 days at Rs 1,000 a day	22	458
- Bandula Amarasiri, Ms. Sesha Ariyatilake and T. Ariyawansa: 22 days at Rs 500 a day for 3 people equals ...	33	688
- total	55	1146

In addition the local travel and subsistence expenses for the two counterpart staff working on the study plus the cost of stationery and publications are estimated to be as follows:

	Rs '000 (at Rs 48/US$)	US$
- travel - an average of Rs 150 per day x 88 working days equals ...	13.2	275
- subsistence - an average of Rs 100 per day for each of 2 assistants for 88 working days equals Rs 200 x 88 days equals ...	17.6	367
- stationary and publications; a maximum of ...	20.0	416
- total	50.8	1058

Thus the requested addition to the budget for the study is $4,060 plus $1,146 plus $1,058 = $6,264. This is an increase of about 12.5 per cent on the original budget of $50,094. I feel that the returns (in terms of quality of work) resulting from this increase will be high. Furthermore, the original estimate of three months for the study was made when it was anticipated that the study would cover only the manufacturing sector. Subsequently it was agreed that the study would be expanded to cover the agricultural sector and even though there has been a reduced emphasis on the manufacturing sector, the addition of 12.5 per cent to the total budget seems to be a small price to pay for the extra coverage.

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Appendix III

LIST OF ABBREVIATIONS

ARTI	-	Agrarian Research and Training Institute
ASI	-	Annual Survey of Industries
BTT	-	Business Turnover Tax
CB of SL	-	Central Bank of Sri Lanka
CIF	-	Cost, Freight and Insurance (Import prices)
CWE	-	Cooperative Wholesale Establishment
DCS	-	Department of Census and Statistics
DPC	-	Direct Price Comparisons
DRC	-	Domestic Resource Cost
EPC	-	Effective Protection Coefficient
FCD	-	Food Commissioner's Department
FOB	-	Free On Board (Export prices)
GoSL	-	Government of Sri Lanka
IOCs	-	Input-Output Coefficients
IPS	-	Institute of Policy Studies
MPCSs	-	Multi-Purpose Cooperative Societies
NEC	-	Not Elsewhere Classified
NES	-	Not Elsewhere Specified
NPC	-	Nominal Protection Coefficient
NSE	-	Net Subsidy Equivalent
PMB	-	Paddy Marketing Board
PTC	-	Presidential Tariff Commission
RRC	-	Real Resource Cost
SER	-	Shadow Exchange Rate
SFCs	-	Subsidiary Food Crops (the crops studied in section 7)
SLFP	-	Sri Lanka Freedom Party
UNP	-	United National Party

Appendix IV

CONVERSION RATES

End of Period Exchange Rates (1985 - 1992):

Rs/ US $	1985	-	27.4
	1986	-	28.5
	1987	-	30.8
	1988	-	33.0
	1989	-	40.0
	1990	-	40.2
	1991	-	42.6
	1992	-	46.0

Source: Central Bank of Sri Lanka, Annual Report 1992, Table 55.

Milk - 7.5 litres of liquid milk equivalent to 1 kg of milk powder

Rice - 0.68 MT of rice per 1 MT of paddy

Sugar - 0.075 MT of 'refined' sugar per 1 MT of sugar cane

Wheat - 0.74 MT of flour per 1 MT of wheat (Prima contract)

Appendix V

IMPORT WAIVERS AND EXEMPTIONS IN SRI LANKA - 1992

A major problem in attempting to update the estimates of effective protection for the manufacturing sector focusses on the derivation of the import duties (the nominal protection coefficients). This would seem to be a simple matter of taking the import duties as gazetted. (Import duties can be found in the Gazetted list of November 12th 1991 - and have since been amended).

However, there are two reasons why these listed import duties may not be a good reflection of the differences between domestic and world prices of outputs and inputs. **First,** the import duties may be waived either partially or completely; and **second,** companies in Sri Lanka may not fully utilise the duty. The latter situation may arise because of competition in the domestic market or even if one domestic producer has a monopoly of the domestic market. The situation in which a duty is not fully utilised is usually referred to as 'tariff redundancy' and can only be discovered by making direct price comparisons of the world and domestic prices.

Neither the PDP study of 1987 nor the PTC study of 1991 carried out direct price comparisons nor, it appears, did they take account of duty waivers and exemptions. In this study the research assistants have not been able to make direct price comparisons in the manufacturing sector but, in the absence of direct price comparisons, it is important at the very least to take account of duty waivers and exemptions. It is this problem on which this section focusses. It is important that, as far as possible, the duties are taken as levied (after taking account of waivers) rather than as listed in the Gazette.

It seems that the arrangements for duty waivers and exemptions are as follows.

The Gazette of November 12th 1991 (a resolution under the Revenue Protection Act of 1962) which lists the import duties also contains various concessions and exemptions under code sub-headings, under the list of concessions (under chapter 97) and under the list of exemptions at the end of the Gazette. However, in addition to these, the Minister of Finance can impose an import surcharge for a specified time under section 10A of the Customs Ordinance - and, furthermore, under section 19A of the Customs Ordinance, the Minister of Finance has the legal authority to waive (partially or completely) any duty. (We also understand that while any Ministry can recommend waivers on duties, waivers can only be authorised by the Ministry of Finance). These waivers granted by the Ministry of Finance have to be tabled in Parliament within 60 days of their being gazetted. Unfortunately, there is a considerable backlog on items to be gazetted and we understand that none have been gazetted from 1989 onwards.

Thus there are waivers given through the Ministry of Finance but, for 1989 onwards, they are not available in gazetted form. Unfortunately, the number of consignments on which duty waivers have been granted has been large, namely:

Year	No. of duty waivers granted
1988	2,178
1989	5,107
1990	7,885
1991	7,796
1992	8,060
1993 (up to 21/9)	5,483

(Information from the Treasury)

There has not been sufficient time in this study to go through the waivers individually for any one year. However, some attempt has been made to get an idea of the significance of duty waivers.

An initial approach to estimating the significance of the waivers is to compare the actual duty collected and the duty as it would be if the gazetted duty rates applied to all imports. Here the latter is referred to as the 'gazetted duty revenue'.

Such a comparison of the actual and gazetted duty revenue was carried out for the 11 month period from January to November 1991 by Patrick Low of the World Bank. The findings were as follows:

	January-November 1991
Value of imports (Rs. bn.)	112.3
Actual import duty revenue (Rs. bn.)	16.1
Actual duties as % of imports	14.0
Gazetted duty revenue (Rs. bn.)	44.6
Gazetted duty revenue as % of imports	40

The above figures for the value of imports and import duties are similar to those given in the Annual Report of the Central Bank as shown below:

	Imports (Rs. bn.)	Import duties (Rs. bn.)	% of duties to total
Central Bank AR 1991	127.8	19.2	15
- 11/12th of this	117.2	17.6	15
- Patrick Low's figures for January to November 1991	112.3	16.1	14

Sources: CB of SL, Annual Report 1992, Tables 46 and 59
Information also from Patrick Low of the World Bank

Unfortunately, the above figures do not give much idea of the size of duty waivers, since the difference between the gazetted and actual duties (amounting to Rs 44.6 bn - Rs 16.1 bn = Rs 28.5 bn) consists mostly of imports into bonded areas and which are export-related (e.g. goods incorporated into exported goods such as

clothing). In a fax dated September 30 1993, Patrick Low has said that the data available to him did not enable him to distinguish between export-related and other duty exemptions.

Nor has it been possible to get a very firm idea of the distinction in this study, in spite of a detailed analysis of imports for 1992. Using print-outs from the Statistics Department of the Customs, an analysis was made of all imports under HS codes where the value of imports in 1992 exceeded Rs 10 million. This turned out to be a sample of 1408 HS codes from a total of about 6,000, but the sample was reasonably comprehensive inasmuch as it covered about 90% of the total value of imports for 1992. The data collected for the sample included, for each HS code, the value of imports, the value of dutiable imports and the actual duty revenue collected. Then, against each HS code, the gazetted import duty was listed and the gazetted duty calculated.

A major problem with analysing this data is that the import values are taken from the External Trade Statistics while the duty values are taken from the Customs Statistics. This is a problem inasmuch as the import values are recorded when they enter the country, whereas the duty is paid when the goods enter the Principal Customs Area. If the goods go through a bonded zone, there could be considerable lags between the recordings. An attempt has been made here to clean up the data as much as possible but undoubtedly some errors remain.

The total figures for the sample compared with the data in the Central Bank's 1992 Annual Report and the Customs data are as follows:

	Offical data	Sample data	% of sample to official data
Total imports (Rs bn)	152.4	136.9	90
Import duties (Rs bn)	21.4	19.1	89
Import duties as % of all imports	14.0	14.0	
Gazetted import duties (Rs bn)	58.8		
Gazetted import duties as % of all imports		43.0	

Sources: Central Bank of Sri Lanka, Annual Report 1992 (tables 50 and 59); Customs data and the sample data

As can be seen, gazetted import duties totalled Rs 59 bn or 43% of the total imports of Rs 137 bn for the sample. The difference between the gazetted import duties and the actual import duties totalled Rs 59 bn. less Rs 19 bn. = Rs 40 bn. Unfortunately, it has not been possible to break this down precisely into export-related and other duty exemptions.

Estimates have been made by the IMF and the Customs for all non export-related duty waivers and exemptions. An estimate for duty waivers and exemptions (on goods for domestic consumption) was contained in a 1991 IMF study on the Computerisation of the Customs. The IMF report's estimate was Rs 4 bn for 1990 (see IMF 1991, Appendix VIII)[1]. Another estimate has been made by the Director of Imports

in the Customs. According to this estimate, the duty waived in 1992 was approximately Rs 5 bn. of which Rs 2.3 bn applied to motor vehicles.

In this study a crude attempt has been made to distinguish between export-related and other waivers and exemptions. Table 1 summarises the data from the sample survey carried out for this study and shows the derivation of the actual and gazetted import duty. It was pointed out above that the actual duty rate was 14% while the gazetted duty rate was 43%. Table 1 shows this comparison for all HS chapters and table 2 shows an (admittedly crude) attempt to allocate the differences between the actual and gazetted duties - between those that are export-related and those that are on goods consumed in Sri Lanka. As table 2 shows, the total of export-related waivers and exemptions is estimated to be Rs 33.2 bn. while those on goods consumed in Sri Lanka is about Rs 3.9 bn. with Rs 2.6 bn unallocated.

Thus from this very tentative analysis, it would seem that the waivers and exemptions on goods destined for the Sri Lankan market were probably as least as high as Rs 4 bn on the sample looked at in this study which, it should be noted, covered about 90% of imports and of import duties in Sri Lanka.

Table 1:
Actual and Gazetted Import Duty Revenue for 1992

HS chapter code	Description	All values in Rs. million			%	
		Value of imports	Actual import duty	Gazetted import duty	Actual duty	Gazetted duty
01	Live animals	40	4	20	11	50
02	Meat	50	14	25	27	50
03	Fish	1,797	183	180	10	10
04	Dairy products	2,867	333	953	12	33
05	Dairy products	83	4	23	5	28
06	Plants	16	0	2	3	10
07	Vegetables	2,227	630	744	28	33
08	Fruits	182	75	75	42	41
09	Coffee, tea	930	108	141	12	15
10	Cereals	6,038	554	1,197	9	20
11	Starches	67	8	17	12	26
12	Oil seeds	129	3	13	2	10
13	Gum/resins	12	1	1	9	10
14	Planting materials	222	217	226	98	102
15	Fats	1,019	262	475	26	47
16	Meat/fish/prep.	607	59	61	10	10
17	Sugar, confectionery.	5,099	1,717	1,821	34	36
18	Cocoa	48	10	21	20	43
19	Cereal prep.	295	82	95	28	32
20	Veg/fruit prep.	23	7	11	30	50
21	Misc. prep.	539	132	135	25	25
22	Bev.,spirits	482	48	243	10	50
23	Animal feed	565	12	57	2	10
24	Tobacco	1,208	1,535	8,875	127	734
25	Salt	2,608	171	372	7	14
26	Ores	27	0	3	0	10

HS chapter code	Description	All values in Rs. million			%	
		Value of imports	Actual import duty	Gazetted import duty	Actual duty	Gazetted duty
27	Mineral oils	13,291	4,376	4,577	33	34
28	Chemicals	866	97	113	11	13
29	Chemicals	1,050	70	98	7	9
30	Pharmaceuticals	2,088	21	25	1	1
31	Fertilisers	1,313	0	0	0	0
32	Tanning, etc	1,481	111	362	7	24
33	Perfumes, etc	331	54	86	16	26
34	Soap	144	11	24	8	17
35	Juice extracts	88	8	9	9	10
36	Explosives	39	7	8	17	20
37	Photographic	440	83	85	19	19
38	Misc.chemicals	1,133	118	133	10	12
39	Plastics	3,697	414	898	11	24
40	Rubber	954	244	344	26	36
41	Raw hides	146	0	13	0	9
42	Leather	86	7	43	8	50
44	Wood	777	29	82	4	11
47	Pulp	133	13	13	10	10
48	Paper	3,528	470	970	13	27
49	Printed materials	657	3	4	0	1
50	Silk	43	0	22	0	50
51	Wool	139	0	36	0	26
52	Cotton	10,259	235	6,592	2	64
53	Other fibres	13	0	4	0	35
54	Man-made yarns	2,798	116	1,165	4	42
55	Man-made fibres,yarns	10,083	611	7,375	6	73
56	Yarn, twine etc	883	36	299	4	34
58	Woven fabrics	1,631	55	737	3	45
59	Lamin. fabrics	913	51	411	6	45
60	Knitted fabrics	5,570	7	8,466	0	152
61	Knitted clothing	344	1	502	0	146
62	Non-knitted clothing	159	24	106	15	67
63	Other textiles	213	41	44	19	21
65	Headgear	43	4	4	10	10
66	Umbrellas	48	5	5	11	10
67	Feather articles	12	1	6	8	50
68	Cement artcles	279	37	73	13	26
69	Ceramic articles	154	30	57	19	37
70	Glass	991	161	208	16	21
71	Pearls	1,100	3	159	0	14
72	Iron and steel	3,168	455	539	14	17
73	Iron and steel articles	2,369	383	564	16	24
74	Copper	330	32	40	10	12
76	Aluminium	629	73	104	12	16
78	Lead	30	3	3	10	10
79	Zinc	94	9	9	10	10
82	Tools	542	61	105	11	19
83	Misc. articles	412	83	116	20	28
84	Machinery	12,623	815	1,769	6	14
85	Electric machinery.	6,566	632	1,213	10	18
86	Rail equipment	1,102	110	110	10	10

		All values in Rs. million			%	
HS chapter code	Description	Value of Imports	Actual import duty	Gazetted import duty	Actual duty	Gazetted duty
87	Vehicles	9,120	2,487	3,186	27	35
88	Aircraft	160	0	16	0	10
89	Ships	11	1	1	9	10
90	Instruments	2,469	88	247	4	10
91	Clocks, watches	74	5	24	6	32
92	Musical instruments	34	2	12	6	35
94	Furniture	148	19	68	13	46
95	Toys	195	18	56	9	29
96	Misc. articles	1,750	91	699	5	40
TOTALS		136,925	19,092	58,825	14	43
ALL IMPORTS		152,407	21,391	n.a.	14	n.a.
% of sample to total		90	89			

Sources:

- sample figures from the analysis carried out by research assistants at the Presidential Tariff Commission from printouts supplied by the Statistics Division of the Customs.
- Data for all imports from the Central Bank of Sri Lanka Annual Report 1992 (tables 50 and 59) and the print-outs from the Customs Department

Notes:

The table above shows the value of imports, actual import duty revenue, 'gazetted' import duty revenue, and percentage duty rates (actual and 'gazetted'). The 'gazetted' duty revenue is the duty revenue that would have been raised if the gazetted import duties had been levied on the goods actually imported in 1992.

All figures are for 1992 and are given by HS code chapter. The figures above are for a sample of 1408 HS codes from a total of 6,000 HS codes. The sample was selected by taking all HS codes for which the import value was more than Rs 10 mn. As can be seen from the end of the table, the sample covers about 90% of total imports into Sri Lanka and about the same proportion of import duty revenue collected by the Government (For the figures on individual HS codes, see files called R1, R2 and R3).

Notes on columns:

- the column headed 'Value of imports' is from the External Trade Statistics for 1992;
- the column headed 'Actual import duty' is the duty revenue taken from a Customs print-out;
- the column headed 'Gazetted import duty' is obtained by multiplying the import values for each sample HS code by the gazetted import duty rate (for detailed calculations see computer files R1, R2, and R3);
- the column headed Actual duty (%) is calculated by expressing the actual import duty as a percentage of the value of imports;
- the column headed Gazetted duty (%) is calculated by expressing the 'gazetted' import duty as a percentage of the value of imports.

Table 2:
Actual and Gazetted Import Duty Revenue for 1992

		All values in Rs million			
HS chapter code	Description	Gazetted less actual duty	Sources of differences		
			Export-related	Consumption in Sri Lanka	Not identified
01	Live animals	15			15
02	Meat	11			11
03	Fish	-3			-3
04022101	Whole milk powder	531		531	
04022102	Other milk	47		47	
04	Other dairy prods.	42			42
05	Dairy products	19			19
06	Plants	1			1
07134001	Red lentils	45		45	
07134009	Other lentils	57		57	
07	Other vegetables	12			12
08	Fruits	0			0
09	Coffee, tea	33			33
10019000	Wheat	285		285	
10051009	Maize	57		57	
10063000	Rice	154		154	
10064000	Broken rice	138		138	
10	Other cereals	9			9
11	Starches	9			9
12	Oil seeds	10			10
13	Gum/resins	0			0
14	Planting mat.	9			9
15020001	Tallow	57		57	
15119001	Palm Stearin	137		137	
15	Other fats	19		19	
16	Meat/fish/prep.	2			2
17011109	Refined sugar	104		104	
17	Other sugar, confecty.	0			0
18	Cocoa	11			11
19	Cereal prep.	13			13
20	Veg/fruit prep.	5			5
21	Misc. prep.	3			3
22083000	Whiskies	124		124	
22	Other bev.,spirits	71			71
23	Animal feed	44			44
24011002	Tobacco	65	65		
24011009	Tobacco	7,155	7,155		
24022002	Cigarettes	89		89	
24	Other tobacco	31	31		
25232902	Cement	56		56	
25232903	Cement	81		81	
25	Other salt	64			64
26	Ores	3			3
27100007	Gas Oils	213		213	
27	Other min.oils	-12			-12
28	Chemicals	16			16
29	Chemicals	28			28

HS chapter code	Description	All values in Rs million			
		Gazetted less actual duty	Sources of differences		
			Export-related	Consumption in Sri Lanka	Not identified
30	Pharmac.	4			4
31	Fertilisers	0			0
32099000	Paints and varnishes	203			203
32	Other tanning, etc	48	48		
33	Perfumes, etc	32		32	
34	Soap	13			13
35	Juice extracts	1			1
36	Explosives	1			1
37	Photographic	2			2
38	Misc.chemicals	15			15
39262009	Plastic apparel	160			160
39269013	Plastic fittings	88			88
39	Plastics	236			236
40	Rubber	100			100
41	Raw hides	13			13
42	Leather	37			37
44	Wood	53			53
47	Pulp	0			0
48191000	Corrugated boxes	41	41		
48219000	Labels	42	42		
48229000	Bobbins	129	129		
48	Other paper	288	288		
49	Printed material	1			1
50	Silk	22	22		
51	Wool	35	35		
52	Cotton	6,357	6,357		
53	Other fibres	4	4		
54	Man-made yarns	1,049	1,049		
55	Man-made fibres, yarns	6,764	6,764		
56	Yarn, twine etc	263	263		
58	Woven fabrics	682	682		
59	Lamin. fabrics	360	360		
60	Knitted fabrics	8,459	8,459		
61	Knitted clothing	501	501		
62	Non-kn. clothing	82	82		
63	Other textiles	3	3		
65	Headgear	0			0
66	Umbrellas	0			0
67	Feather articles	5			5
68	Cement articles	36			36
69	Ceramic articles	27			27
70	Glass	47			47
71023900	Diamonds	66	66		
71	Pearls	91	91		
72	Iron and steel	84		84	
73	Iron and steel articles	181		181	
74	Copper	8		8	
76	Aluminium	31		31	
78	Lead	0		0	
79	Zinc	0		0	

HS chapter code	Description	All values in Rs million			
		Gazetted less actual duty	Sources of differences		
			Export-related	Consumption in Sri Lanka	Not identified
82	Tools	44		44	
83	Misc. articles	33		33	
84521009	Sewing machines	43	43		
84522100	Sewing machines	46	46		
84522900	Sewing machines	66	66		
84	Other machinery	799			799
85281009	TVs	93		93	
85	Electric machinery	488		488	
86	Rail equipment	0		0	
87032305	Motor vehicles	164		164	
87033205	Motor vehicles	294		294	
87	Vehicles	241		241	
88	Aircraft	16			16
89	Ships	0			0
90189000	Medical instruments	103			103
90	Instruments	55			55
91	Clocks, watches	19			19
92	Musical instruments	10			10
94	Furniture	49			49
95	Toys	38			38
96062100	Buttons	378	378		
96071100	Slide fasteners	50	50		
96071900	Slide fasteners	119	119		
96	Misc. articles	62			62
TOTALS		39,734	33,239	3,887	2,608

Notes: Details are given by individual HS code where the gazetted less actual duty is greater than Rs 40 mn (except for HS chapters 52-64)

Appendix VI

ELECTRICITY, FUEL AND OTHER NON-TRADED INPUTS

In section 4, the method of estimating the EPCs was explained. The 1991 PTC study (and the other studies on protectionism in the manufacturing sector of Sri Lanka) treated electricity and 'other non-traded inputs' partly as traded and partly as non-traded inputs. About 14% of the electricity was treated as a traded input with an applicable NPC of 1.15; fuel was treated entirely as traded input with a NPC of 1.0; while about half of all other non-traded inputs was treated as traded with a NPC of 1.17.

For 1993, the treatment was the same in terms of input-output coefficients. The NPC used for fuel was 1.20 since it was assumed that fuel inputs are assumed to be diesel oil and fuel oils.

For diesel oil, the import duty in September 1993 was 35% and this was almost exactly the difference between the CIF price of diesel oil into Sri Lanka (at Rs 8.7/litre) and the domestic wholesale price of Rs 11.7/litre provided as of May 1993.

For heavy fuel oil, the import duty is 10%. Thus assuming that diesel oil and heavy fuel oil are the major fuels used by the manufacturing sector and that their proportions are roughly equal in use, then the NPC will be a simple average of the 35% NPC on diesel and the 10% NPC on heavy fuel oils, namely 23%. Thus 1.20 is the NPC assumed for fuels for 1993.

For electricity, the NPC is simply assumed to be zero for the tradable portion. In 1988 the domestic price of electricty was probably well below its marginal cost of foreign exchange (see Government of Sri Lanka, 1991, 59, where it was stated that the shadow ('world') price of electricity was 1.57, 57% above the, then 1988, market price. The report stated "...rail transport, water and sewerage and electricity are subject to government pricing policies that ensure market price values seriously understate economic costs" (page 60). However, with the sharp price increase recently (July 1993) introduced by the CEB, it is likely that the price of electricity matches its shadow 'world' price. Therefore in this study for 1993, a NPC of 1.00 has been assumed for the traded part of electricity.

For the traded portion of 'other non-traded inputs', a NPC of 1.20 was assumed for 1993.

Appendix VII

SOME EFFECTS OF TOTALLY LIBERALIZED RICE IMPORTS ON DOMESTIC PADDY PRODUCTION

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Introduction

The objective of this note is to provide a rough indication of the likely magnitude and regional impact of the adjustments to production that would follow the liberalization of rice imports. Four questions are addressed, albeit at a preliminary level:

* what order of magnitude could be involved when we talk of the likely impact of liberalization on total domestic paddy production ?
* how much land might have to go out of paddy production?
* how would these losses be distributed across the country?
* where would specialized paddy production be most likely to continue, and which parts of the country would feel the biggest problems of adjustment?

Seasonal variations are taken into account in the course of the analysis.

Data and assumptions

The estimates involved in this exercise are based on *Paddy Statistics* of the Department of Census and Statistics (DCS) for the 1985/86 *maha* and 1986 *yala* seasons. Use of a longer time frame would be preferable methodologically, but it is not believed to bias the exercise unduly at this level of analysis. These two seasons accounted for the highest paddy output recorded in Sri Lanka in any one agricultural year. It will therefore tend, if anything, to underestimate losses.

DCS estimates of paddy production for each of the two seasons were re-estimated by district and by water source. District-specific correction factors of the DCS were used to arrive at the net harvested areas by water source and the latter were multiplied by average yield (again by water source) to obtain estimated production. Percentage standard errors for yield estimates are at times rather large (an important qualification of the exercise) - especially those of Polonnaruwa District in *maha* and

Kurunegala in *yala*, these being major producing areas. However, confidence limits suggest that markedly different results would not emerge from more refined data on yields.

For the purposes of this exercise, it was assumed that the effects of trade liberalization on domestic paddy production could be expressed in simplified form in terms of a yield threshold: paddy yields/hectare below a certain stipulated threshold would become unprofitable, and a cut-off point could be established below which land could be expected to go out of paddy because competition from imports would mean that it was no longer profitable. In practice, other factors (regional variations in producer price and costs of production, the viable alternatives available and the fact that rice is a subsistence crop) will invariably play a role in what happens - especially in the short-term, but the broad contours of the effects of liberalization can be traced under these simplified assumptions. Three thresholds were assumed, based on Edirisinghe (1991) as interpreted in Section 5: namely 4 MT/hectare, 3 MT/hectare and 2MT/hectare.

Effects on Total Production

The figures in Table 1 are aggregated from spread sheets showing production by type of water use (i.e. by major schemes, minor schemes and rainfed cultivation) for each district in the *maha* and in *yala* seasons separately (adjusted as indicated above). The table was then obtained by excluding all production below a stated yield threshold in a given season and then summing the rest. The results provide a first, very rough indication of the possible magnitude of the effect of total liberalization on output.

What emerges is a marked reduction in domestic paddy production at the 4MT and 3MT/hectare thresholds (62% and 26% respectively), but no difference at the 2MT/hectare level. If paddy production was still profitable at the 2MT/hectare level in the face of imports, then liberalization would lead to no real change. Losses incurred at the higher levels would be far greater in *yala*. *Yala* output at the 4MT/hectare threshold would be severely reduced (with a 72% loss in output) though, even in *maha*, output would fall to less than half.

Table 1:
Production at Selected Threshold Levels
(in million metric tonnes)

Season	Threshold (MT/hectare)		
	+4MT	+3MT	+2MT
Maha	0.77 (54)	1.34 (21)	1.69 (0)
Yala	0.21 (72)	0.58 (35)	0.88 (2)
Total	0.98 (62)	1.92 (26)	2.57 (1)

Note: Bracketed figures are the percentage of domestic output that would have been lost.

Converting paddy production at each threshold into rice equivalents (with a conversion ratio of 1MT paddy = 0.68 MT rice) shows that the loss of output from land with a yield of less than 4MT or 3MT/hectare would result in a considerable fall in the self-sufficiency ratio (see Table 2). The actual self-sufficiency ratio recorded in 1986 was 89%.

Table 2:
Likely Impact on Imports and Self-Sufficiency in Rice
(Million MT unless indicated)

Variables	Threshold (MT/Ha)		
	+4MT	+3MT	+2MT
Consumption 1986	2.06	2.06	2.06
Rice production	0.67	1.31	1.75
Necessary imports	1.39	0.75	0.31
Implicit self-sufficiency (%)	33	64	85

The Area No Longer Competitive

Table 3 gives the gross sown area under paddy which is below the 'threshold' yields. The total area involved at the 4MT and 3MT/hectare thresholds would imply a major adjustment in peasant production throughout the country. How much of this land (given soil, prevailing water conditions etc.) could be used for other crops cannot be estimated. But the total area is massive.

Table 3:
The Area of Paddy Land 'Lost' at Selected Thresholds
(in thousand hectares)

Season	Threshold (MT/hectare)		
	+4MT	+3MT	+2MT
Maha	358 (65)	170 (31)	11 (1)
Yala	275 (81)	149 (44)	0 (0)
Total	633 (71)	319 (36)	11 (1)

Bracketed figures are expressed as a percentage. Area refers to the gross sown area.

Since losses at the 2MT/hectare level would be insignificant, they are excluded from the subsequent analysis.

The Regional Distribution of These Losses

The next question is where the losses would be located. Table 4 gives their distribution by district. It can be seen that, regardless of the threshold or the season, Matara and Galle Districts would contribute 10-15% of the losses. Kandy would also lose in *yala* at either threshold. In other cases, distribution varies according to the threshold applied and/or according to the season.

Table 4:
Regional Distribution of Land Lost from Paddy
(district loss as a % of the total land lost)

District*	4MT/Ha.		3MT/Ha.	
	Maha	Yala	Maha	Yala
Colombo	1.8	2.1	3.4	3.3
Gampaha	4.5	3.7	8.3	6.9
Kalutara	5.4	6.1	8.5	11.2
Galle	5.7	7.5	12.0	13.8
Matara	5.3	6.6	11.1	7.3
Ratnapura	4.5	5.4	3.5	3.5
Kegalle	3.1	3.9	0	7.1
Kurunegala	16.6	17.5	0	25.7
Puttalam	3.8	1.9	5.5	3.6
Kandy	2.1	5.6	0	8.0
Matale	2.0	2.4	0	4.4
Nuwara Eliya	1.6	1.4	0	0.5
Badulla	3.1	2.8	1.2	0
Moneragala	2.0	1.7	2.0	0
Jaffna	3.0	0	6.4	0
Kilinochchi	5.1	2.8	4.7	0
Vavuniya	2.4	0	4.1	0
Mullativu	2.3	1.8	3.0	3.4
Mannar	0.6	0	0	0
Anuradhapura	0	5.0	0.7	0
Polonnaruwa	0	10.5	0	0
Trincomalee	1.4	1.9	3.0	0
Batticaloa	9.3	5.2	19.5	0.6
Ampara	13.0	0	2.5	0
Hambantota	0	1.2	0.8	0
Uda Walawe	0	0	0	0
Mahaweli H	0	2.4	0	0
Total	98.6	99.4	100	99.3

Notes: * Districts, as defined for the purposes of paddy statistics, take Uda Walawe and Mahaweli H as separate units.
Percentages below 0.5 have been rounded to 0.

At the 4MT level Kurunegala takes the brunt of the loss, accounting for 17-18% in both the *maha* and *yala* seasons. Batticaloa (5-10%) and Kalutara (5-6%) are also large losers in both seasons. In *maha*, Amparai and Killinochchi Districts (both Dry

Zone areas) would also account for an important part of the loss. In *yala*, Pollonaruwa, Anuradhapura, Ratnapura and Kandy would contribute a sizeable share of the losses.

At the 3MT level the pattern is very different. Apart from Galle and Matara, which have already been mentioned, the only other districts that account for a notable proportion of the total loss ***in both seasons*** are Gampaha and Kalutara Districts in the Western Province (15-20% of losses). In *maha*, the biggest single loss would be in Batticaloa District (20% of the total), with smaller contributions from Puttalam and Jaffna (assuming for the present purposes restoration of normal conditions). In *yala*, a large part of the total loss in Kurunegala District - accounting for over a quarter. Other main contributors are neighbouring Kegalle and Kandy.

Implications of These Losses for Individual Districts

Table 5 shows the percentage of a district's paddy land that would be lost in the course of this exercise. It gives an indication, in a sense, of the pattern of regional specialization that could be expected in the response to sharply increased competition from imports.

It can be seen that, regardless of which threshold is applied, major adjustments would be forced on producers in the south of the country (Galle and Matara Districts), in the areas surrounding Greater Colombo (Colombo District itself, and Kalutara and Gampaha Districts), and in Puttalam. These would no longer be competitive paddy producing areas in either season. There are some signs of alternative crops emerging in the latter area, and the second group could be expected in time to gain from their proximity to the capital, but the south could be expected to emerge as a source of some concern.

Looking more specifically at the effects of **the 4MT/hectare threshold**, Uda Walawe and Hambantota Districts emerge as specialist areas that would compete in both seasons. In *maha*, Anuradhapura, Pollanaruwa and the Mahaweli H Districts - all irrigated Dry Zone areas (and to a lesser extent Mannar, Trincomalee and Moneragala in the Dry Zone, together with Badulla, Kandy and Matale in the Intermediate Zone) would continue as areas of production. The main losers would be the South (other than Hambantota) and the Western Province (as indicated above), plus a large area in the Coconut Triangle and Intermediate Zone comprising Kurunegala, Kegalle, Ratnapura, Putalam), and Batticaloa and Amparai in the East. Paddy production in the north would be virtually eliminated with the exception of the irrigated production in Mannar District.

In *yala*, Amparai District would remain important (alongside Uda Walawe and Hambantota). The main areas that would lose would be Anuradhapura, Polonnaruwa, Batticaloa, Trincomalee and the Mahaweli H area in the Dry Zone, Kurunegala District, and the others areas mentioned above that would lose in both of the seasons.

Table 5:
The Percentage of Paddy Land Lost per District Under Selected Thresholds

District*	4MT/Ha.		3MT/Ha.	
	Maha	Yala	Maha	Yala
Colombo	100	100	88	100
Gampaha	100	100	88	100
Kalutara	100	100	74	100
Galle	100	100	100	100
Matara	100	100	100	60
Ratnapura	1001	100	100	36
Kegalle	100	100	0	100
Kurunegala	83	100	0	80
Puttalam	100	100	68	100
Kandy	34	100	0	78
Matale	46	100	0	100
Nuwara Eliya	84	-	0	-
Badulla	57	100	29	0
Moneragala	64	-	29	-
Jaffna	100	-	100	-
Kilinnochchi	100	99	43	0
Vavuniya	100	-	83	-
Mullativu	100	-	62	-
Mannar	15	-	0	-
Anuradhapura	3	100	3	0
Polonnaruwa	4	100	0	0
Trincomalee	30	100	30	10
Batticaloa	100	100	100	7
Ampara	100	2	9	0
Hambantota	7	21	7	0
Uda Walawe	0	0	0	0
Mahaweli H	0	100	0	0

Notes: * Districts, as defined for the purposes of paddy statistics, take Uda Walawe and Mahaweli H as separate units.

0 indicates a gross sown area of less than 5,000 hectares.

At the lower 3MT/hectare level, regional specialization would obviously be less pronounced. Anuradhapura, Polonnaruwa, Amparai, Hambantota, Uda Walawe and Mahaweli H (and to a lesser extent Trincomalee) would be competitive in both seasons. In ***maha*** the Intermediate Zone (Kurunegala, Kegalle, Kandy, Matale and Moneragala Districts) and Mannar District in the north would also be important. The main losers would be Batticaloa - again, together with the Western Province area around Colombo and Galle and Matara in the south. In ***yala***, Batticaloa District would remain an important production area alongside the other Dry Zone areas that have been mentioned earlier. The main losers would be in the Intermediate Zone (Kegalle, Kurunegala, Puttalam and Matale).

Discussion

The central issue, when it comes to effects of a liberalization of imports on domestic paddy production, is the level of tariff protection. The difference between a 4MT and a 2MT cut-off is of major significance. Given a 4MT/hectare threshold, over 60% of domestic paddy output would by our estimates be jeopardized, whereas in the 2MT case the impact would seem likely to be rather minimal. The question is which would apply.

The three cut-off points used in this paper were derived from Edirisinghe (1991). His working hypothesis was that, as long as the foreign exchange that is saved by producing paddy exceeds the costs of production, it is more profitable to grow paddy. The problem is how to value the labour component of these costs of production and how to value the the exchange rate. Using the market wage for labour and the official exchange rate, Edirisinghe arrived at a 4MT cut-off; taking 60% of the market rate (as a more realistic indication of the likely opportunity cost of labour) and making a 10% adjustment in the exchange rate to account for effects of the liberalization itself yielded a cut-off of 3MT/hectare; and 20% adjustment in the exchange rate yielded a cut-off of 2.2MT/hectare. Which of these is the most realistic is extremely difficult to say.

Nevertheless, this will determine the magnitude of the necessary adjustment. Several observations, however, can be added, based on the present exercise. First, it suggests that, even at the 3MT threshold, there would be a significant displacement of paddy production (equivalent to over a third of the current sown area). This would create major problems of adjustment. Secondly, it suggest that the problem could be exacerbated by regional patterns in these losses -- (i) because of the concentrated effects of large displacements in major areas of production (Batticaloa in *maha*, Kurunegala and Polonnaruwa in *yala*); and (ii) because of the political implications of the regional pattern that emerges (e.g. losses in the south, in the Kurunegala-Kegalle-Ratnapura area, and in the Eastern Province). These are sensitive issues that will have to be weighed against technical factors, but the availability or otherwise of alternative crops or alternative employment opportunities will be an important variable in the equation.

Appendix VIII

Liberalistion and the Shadow Exchange Rate[2]

The objective of this study has been to analyse the levels of protection in the agricultural and manufacturing sectors. The comparison is between the prices **with** the existing tariffs and the free market prices, that is the prices **without** any protection. This comparison has been done either **implicitly,** by assuming that the domestic prices are equal to the border prices plus the listed import duties or it has been done **explicitly** by comparing the domestic and border prices. For manufacturing, the direct protection has been estimated implicitly whereas for the agricultural sectors the price comparisons are mostly explicit. Where quantity restrictions (or prohibitive tariffs) exist - as in the agricultural sector - then explicit comparisons must be made.

The comparisons of prices in this study have all been done at the official exchange rate (mostly between the Sri Lankan rupee and the dollar) prevailing at the time of the comparison. This is referred to as the **direct protection.**

However, in addition to the direct protection, there would be an **indirect** effect resulting from complete liberalisation and the removal of protection, since the liberalisation would result in a change in the exchange rate and a change in the relationship between domestic and border prices. In general this indirect effect is likely to offset the direct effect to some extent, since with liberalisation there is likely to be a real devaluation of the rupee as the domestic production of both import substitutes and exportables becomes more competitive. The purpose of this Appendix is to show how this indirect effect has been estimated in this study.

The equations used are the same as those set out in the Appendix to Volume II of Krueger et al 1991. The relevant equations are (A7) and (A8) set out and explained on pages 284 and 285 of Krueger et al 1991.

The first equation (A7 in the Appendix to Krueger et al 1991) defines E^* as the exchange rate which equilibrates the current account in the absence of tariffs and quotas on imports (t_M) and duties on exports (t_X). Thus E^* is the new, with-liberalisation exchange rate, and E^* / E_0 is the ratio of the 'new' exchange rate to the 'old'. This ratio is called the shadow exchange rate (SER). E^* is given as:

Equation A7:

$$E^* = \left(\frac{\Delta Q_1}{\varepsilon_S Q_S + \eta_D Q_D} + 1 \right) E_0$$

In the above equation, ΔQ_1 is the term for the change in the trade balance which results from liberalisation.

The second equation (A8 in the Appendix to Krueger et al 1991) shows the derivation of this change from:

- the nominal rates of protection on imports and exports;
- the elasticities of demand for, and supply of foreign exchange; and
- the initial demand for, and supply of foreign exchange.

This second equation is:

Equation A8:

$$\Delta Q = \frac{t_M}{1+t_M} Q_D \eta_D - \frac{t_X}{1-t_X} Q_S \varepsilon_S$$

The approach is essentially partial equilibrium in nature and assumes that:

- there exist independent aggregate demand and supply functions for imports and exports (and therefore that cross elasticities between imports and exports are zero);

- the prices of non-tradable goods remain constant and do not change (relative to traded goods) with the change in the exchange rate (most probably a devaluation); and

- the change being measured is only due to liberalisation. No other actual or potential imbalances in the Balance of Payments are considered (for a wider discussion of the balance of payments and exchange rates in Sri Lanka, see Edwards 1993).

For almost all the 18 countries in the Krueger et al 1991 study, the 'small country' assumption was used, namely that the prices of goods imported and exported are not changed by the small country's own demand for imports and supply of exports. As argued in the main report of this study, it is difficult to sustain this assumption for Sri Lanka's production of tea, and it is reasonable to assume that some part of the export duties on tea would have been passed on to foreign consumers of tea.

However, in this Appendix, the presence or absence of this 'small country' assumption is not an issue, even for tea, because export duties are now very small. Thus for this study t_X is assumed to be only 5% and the relaxation or otherwise of the small country assumption makes virtually no difference to the estimate of indirect protection.

Table A8.1 shows the assumptions for the calculation of the SER in full. In this base case the calculated SER is 1.18. However, especially given the rough nature of many of these data, it is important to conduct a sensitivity analysis. Such analysis, reported in detail below, shows the calculated SER to vary over a small range for quite large variations is assumptions about initial protection rates and elasticities.

Table A8.1:
Data assumptions for calculation of the shadow exchange rate in the base case

Share of Agricultural Goods in Import Price Index	0.70
Nominal Protection Rates:	
Agriculture (t_A)	0.30
Manufacturing (t_{NA})	0.40
Overall (Weighted Average, t_M)	0.33
Export tax (t_X)	0.05
Elasticities:	
Supply of foreign exchange (ε_S)	0.75
Demand for foreign exchange (η_d)	2.00
Initial demand (imports) and supply (exports) of foreign exchange:	
Demand (Q_d)	Rs.152.0 bn
Supply (Q_s)	Rs. 110.0 bn
Equation (A8) is used to get the current account deterioration from full trade liberalisation.	
Current account deterioration (ΔQ_1)	Rs. 71 bn
Therefore use (A7) to derive equilibrium exchange rate in absence of trade controls (as ratio to prevailing exchange rate).	
Shadow exchange rate, E^*/E_0	1.18

Sources:
Elasticities from Bhalla (232)
Imports and exports from Central Bank Annual Report (1992, table 34)
Nominal protection rates are own calculations (see main report)
Share of agriculture in the import price index is based on the consumption share

The two tables below show the sensitivity of the calculated SER to changes in assumptions regarding import protection rates and supply and demand elasticities for foreign exchange. The main point to note from these tables is that the range of calculated SERs is, for a wide range of assumed values, quite small: running from 1.07 to 1.23.

The range of feasible SERs is narrowest for the sensitivity analysis with respect to nominal protection rates. These rates were assumed to run from 0.25 to 0.40 in agriculture and 0.10 to 0.40 in manufacturing. Since the SER is a measure of the exchange rate adjustment required to clear the current account if protection is removed the calculated SER is greater, the greater the initial rate of protection. Hence the

lowest SER (1.12) is given at the lowest assumed values of t_A and t_{NA}, and the highest (1.21) when these rates take their maximum values.

Table A8.2:
Sensitivity of SER to nominal protection rates

Manufacturing (t_{NA})	Agriculture (t_A)			
	0.25	0.30	0.35	0.40
0.10	1.12	1.14	1.16	1.17
0.20	1.14	1.16	1.17	1.19
0.30	1.15	1.17	1.19	1.20
0.40	1.17	1.18	1.20	1.21

A greater range of SERs is observed with respect to differing assumptions with regard to the elasticities of supply and demand. The greater the elasticity of supply of foreign exchange, the less the exchange rate adjustment required if trade controls are removed, so that the SER falls as the assumed (ε_S) rises. On the other hand, a higher absolute demand elasticity requires a greater adjustment so that this variable is positively related to the SER. The range of feasible SERs is given as 1.07 to 1.23, although the elasticities required to attain these upper and lower limits may be regarded as rather extreme.

Table A8.3:
Sensitivity of SER to elasticities of foreign exchange

Elasticity of demand (η_d)	Elasticity of supply (ε_S)			
	0.25	0.50	0.75	1.00
0.50	1.17	1.12	1.09	1.07
1.00	1.20	1.17	1.14	1.12
1.50	1.22	1.19	1.17	1.15
2.00	1.22	1.20	1.18	1.17
2.50	1.23	1.21	1.19	1.18

1. In discussing exemptions and waivers, the IMF made an error but it may not have affected their calculations. In Appendix VIIIb of the report, a list of exemptions is given wrongly as those under Section 19A of the Customs Ordinance. In fact the exemptions listed by the IMF are those given under the Revenue Protection Act of 1962 and listed as such at the end of the Gazette of November 12 1991. They are not import duty waivers given under section 19A.

2. The help of Howard White in the calculations for and preparation of this appendix is gratefully acknowledged.

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