Industrialisation: Import Substitution to Export Promotion

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INDUSTRIALISATION: IMPORT SUBSTITUTION
TO EXPORT PROMOTION

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ABSTRACT

Import-substitution policy creates biases in the incentive structure and lowers the growth of potential exports in the long run. Trade reforms in this respect are likely to reduce the gap between domestic and border prices. The expectation is to bring better industrial performance on the lines of comparative advantages. This paper examines the import-substitution policy and the effect and impact of trade liberalisation.

INTRODUCTION

Neoclassical economic theory focuses on the market or exchange with the assumption that the price mechanism works well and allocates resources efficiently. A focus on the effectiveness of the market mechanism in allocating resources is a core theme of this approach. Promoting foreign trade to access the potential static and dynamic gains and removing the widespread inefficiencies in developing countries due to higher level of protection are some of the issues that the supporters of the market mechanism focus on. In the light of the above argument during the 1980s many developing countries initiated economic adjustment programmes and focused on export promotion along the lines of comparative advantage.

Economic adjustment package includes reducing public sector activity, reforming markets such as international trade, labour, financial and other microeconomic activities. For a majority of countries the general picture is that the price system has been highly distorted through government intervention. In other words, there was a divergence between shadow prices and market prices. It is well established in the literature on shadow pricing that the world price will represent the market price. The economic adjustment package has been oriented to shifting resources into the export sectors by bringing market prices more in line with opportunity costs. Bringing

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opportunity costs more in line with world prices was felt necessary in shifting resources into the export sector.

In recent years neo-classical theory has come to be linked with stabilisation and adjustment programmes by world organisations and applied in many developing countries. Trade reform has been given a prominent role under stabilisation programmes in the expectation that it would promote growth performance and efficiency along the lines of comparative advantage; it would also reduce monopolistic conditions in domestic markets and reduce price markups. The objective of this paper is to study the role of trade strategies in industrialisation. The first three sections of this paper deal with trade strategies, government interventions and import-substituting industrialisation. The rest of the sections deal with export-orientation, trade efficiency and conclusion.

TRADE STRATEGIES

Government intervention in foreign trade is often associated with the concepts "Import Substitution" (IS) and 'Export Promotion' (EP). The former entails higher intervention, the latter less intervention. It is difficult to have a precise definition for the concepts IS and EP. Two basic approaches measuring the intensity of intervention may be distinguished. One was a single-criterion based on the underlying incentive structure; the other is multiple-criteria using choice of trade policy variables.

Little, Scitovsky and Scott (1970), Balassa (1971), Bhagwati (1978) and Krueger (1978) measured trade strategy by use of an almost identical single criterion. For example Bhagwati (1978) treated export promotion as the situation in which

$$EER_X = EER_M$$

where EER_X and EER_M indicate the effective exchange rate for exports and for imports respectively. The EER incorporates all form of incentives and disincentives offered to the economy (for details see P.15, export orientation: trade liberalisation).

Greenaway and Num (1988) adopted a multiple criteria approach. They argued that a single criterion approach is not appropriate for a number of reasons. First, classification into import and export sectors is difficult as industries produce a range of products. Second, the actual and intended effects of policies may be entirely different in developing countries. Third, the evidence suggests that only a few economies persistently pursue a strategy through time. The authors noticed that the initial stages of industrialisation are characterised by import substitution and that it is only after some 'take off' point that resources need to be mobilised into higher value-added activities through export promotion.

Michaely, Papageorgiou and Choksi (1991) adopted multiple criteria and introduced liberalisation indices for each country in a study of nineteen countries and twenty-nine episodes. The liberalisation indices were constructed for each episodes annually during the period studied and were assigned a value ranging from 1 (for the highest possible degree of trade intervention) to 20 (for complete trade liberalisation). For each episodes intensity was derived based on strength and speed and their sustainability[1]. Various quantitative and qualitative factors were taken into account.

The difficulties in defining trade strategies are reflected in the vast variation in approaches to measurement. Between the two extremes, stringent import control and export-orientation policy, there exist various degrees of combinations. In brief, trade strategy can be defined in terms of changes to incentive structure using a single-criterion and changes in the choice of trade policy instrument using multiple criteria[2]. However, the single criterion definition is used in most of the literature.

INTERVENTIONS AND PRICE DISTORTIONS
There are static and dynamic gains of free trade. As a result of exchange of goods and services and specialisation there will be more production and income in the line of comparative advantages. There will be an increase in saving as a result of rise in income, which in turn allows resources to be relocated from the production of consumption goods to the capital goods.

National governments do often intervene in foreign trade in number of ways. These include tariffs, quotas, export barriers, anti dumping duties, local content requirements and administrative policies. Among the other reasons, interventions are intended to protect domestic industries from foreign competition. It was widely noted that these interventions introduce widespread distortions in the pricing system and they pose some of the most intriguing policy problems.

Interventions in Import

Tariffs

A tariff is a tax on importing a good or service into a country, gathered by customs officials at the place of entry. Tariffs fall into two categories. A specific tariff is a money amount per physical unit of import. For example a $ per ton of textiles. An ad valorem tariff is a percentage of the estimated market value of the goods imported. For example a 25 per cent of the value of textiles imported. In general, as a result of a tariff consumers will end up paying higher prices, buying less of the product or both. A tariff brings gains for domestic producers who face import competition.

It is likely that tariffs of importing country result in retaliation from exporting country and both countries end up losing most of the gains from trade. Suppose we assume that the terms of trade of the nation imposing the tariff improve and those of the trade partner deteriorate. Facing both a lower volume of exports and deteriorating terms of trade, the trade partner's welfare declines. As a result the trade partner is likely to retaliate and impose a tariff of its own. The volume of trade further declines. If the process continues, all nations end up losing most of the gains from trade.

Import Quotas and Voluntary Export Restraints

The government gives out a limited number of licences to import items legally and prohibits importing without a license. A quota gives government officials greater administrative flexibility and power. A quota is a shelter against further increases in import spending when foreign competition is becoming severe. The quota cuts the quantity imported and derives the domestic price of the good up above the world price at which the licence holders buy the good abroad.

The way in which a quota is allocated will have impact on consumer welfare. Competitive auction is the best way. The competitive auction is likely to yield a price for the import licences that roughly equals the difference between the foreign price of the imports and the highest home price at which all the licensed imports can be sold. In the case of a public auction, the quota system does not cost the nation any more than an equivalent tariff. Allocating quota on a fixed favouritism is the most illogical way. In this method the government allocates fixed shares to already established firms without competition. A third method is resource-using application procedures. This is considered the least efficient way and a non-price method of allocation. For example, the quota may be allocated on a first-come first-served basis (Lindert 1996).

A voluntary export restraint is a kind of quota on trade imposed by the exporting countries, at the request of the importing countries[3]. For example, textiles, clothing and footwear were subject to voluntary export restraints during the last four decades in which importing countries requested the exporting countries to limit their exports to them. By agreeing to export restraints, foreign producers/exporters secure their minimum export and avoid far more damaging tariffs or quotas by importing countries. The Uruguay Round agreement called for the elimination of restraints on exports of textiles, clothing and footwear.

The Japanese automobile industry was subject to voluntary export restraints in the 1980s. USA automobile producers were running low on profit and workers were subject to massive job layoffs. There were two options to address the protectionist pressure available to USA Congress: imposing quota restrictions on automobile imports from Japan, and imposing voluntary export restraints. The first option was out of favour as USA leads global progress towards freer trade. Instead, Japan agreed to limit its exports to the United States of America. In this case the importing country is a powerful country having trouble with facing rising import competition, and forces the exporting country to deserve so-called "voluntary" export restraints. Voluntary export restraints may benefit Japanese producers by reducing import competition in the importing country and raising their price-markup profits. USA consumers do not benefit as a result of increase in the prices of imported goods. When imports are

limited, this bids the prices up for that limited foreign supply. The world as a whole loses as voluntary export restraints limit trade between nations (Hill 1999).

Anti dumping

The governments of importing countries levy antidumping tariffs against dumping. Dumping is a form of international price discrimination in which an exporting firm sells its product at a lower price in a foreign market than it charges in its home-country market. Dumping is considered a method by which firms unload excess production in foreign markets. There are two types of dumping. Predatory dumping occurs when the firm temporarily discriminates in favour of some foreign buyers with the purpose of eliminating some competitors with the intention of later raising its prices after the competition is over. Persistent dumping occurs when price discrimination goes on forever.

Dumping by an exporting country is often subject to retaliation by the importing country. The governments of importing countries levy antidumping tariffs. In a way, antidumping policies are designed to punish foreign firms that engaged in dumping. The objective is to protect domestic producers from so called "unfair" competition. Usually domestic producers file a petition with the appropriate government agencies. The government agencies investigate the complaint and, if appropriate, impose the antidumping tariff. Such duties are prohibited under the International Antidumping Code signed by most parties to the GATT. However, current GATT practices permit retaliation against dumping.

An antidumping duty is likely to lower world welfare. It is possible uncompetitive domestic producers can call for antidumping duties from firms that may not be dumping. In a way this is an excuse for protectionism. In this case antidumping duties are like usual tariffs and generate costs to the world and to the importing nation as well.

Local Content Requirements

National governments can require firms to use a specific minimum proportion of inputs of a good to be sourced domestically. For example, it was a practice in

Australia that 85 per cent of component parts for automobiles, or 85 per cent of the value of automobiles must be produced locally. Canada forced the radio and television stations to give a certain share of their airtime for local songs and shows. Developing countries frequently use this method as a device for promoting local manufactured products and components. For example Colombia once allowed the free import of the world's best steel on the condition that the buyers should show that they bought certain amount of finished steel from Colombian mills.

By limiting foreign competition the producers of local content benefits. Restrictions on imports raise the prices of imported contents. Higher prices for imported contents raise the cost of the final products produced locally and in turn raise the prices. Overall this scheme tend to benefit producers but not consumers.

Administrative Policies

Some times a range of administrative trade policies or bureaucratic rules can restrict imports and boost exports. The resulting delays due to bureaucratic rules can have direct impact on imports. Bureaucratic rules benefit producers and harm consumers by denying access to superior and lower cost foreign products.

Interventions in Export

Export interventions are export quotas, export tax and export subsidy. Export quotas are rarer, but tend to be more severe, than import quotas. For example to avoid national famines governments used to control exports in the past. In the extreme they can take the form of an export ban or export embargo, both refers to complete bans or economic sanctions. For example United States impose export bans and quotas more often than other industrial nations[4]. Export tax is common, which has effects that are symmetrical to those of an import tax. An export tax, in the face of a fixed world price, discourages exports and directs supplies back onto the home market, pushing down the domestic price.

Exports are often subsidised. For example, governments use taxpayers' money to give low-interest loans to exporters, engage in advertising and export promotion on behalf of exporters and give tax relief based on the value of goods or services each firm

exports. Lower prices of exports due to subsidy likely to benefit consumers and harm producers of importing countries. The governments of importing countries have a good reason to protect their producers from unfair competition. They do retaliate by imposing a tariff against exporters which is widely known as countervailing duties. Higher domestic prices of importing countries as a result of countervailing duties suppose to protect the domestic producers. GATT/WTO do proscribe export subsidies as "unfair competition" and allow importing countries to retaliate with protectionist countervailing duties. The net effect of the subsidy plus countervailing duty together determines the world welfare.

Advocates of strategic trade policy support granting subsidies to strategic industries/firms[5]. This form of subsidy is different from the infant industry argument for protection. Countries may predominate in the export of certain products because they had firms that were foremost in technology and able to attain first-mover advantages in industries that would support only a few firms because of substantial economies of scale. Government should use subsidies to support promising firms in emerging industries and should provide this support until the domestic firms establish first-mover advantage in the world market. Both home market protection and export subsidies are advocated. For example the United States of America supports Boeing and a number of European countries support Airbus.

IMPORT SUBSTITUTING INDUSTRIES

Development economists justify import substituting industrial policies on a number of grounds. Given the low productivity and low income elasticity of demand for the primary goods mainly produced by developing nations known as periphery underwent long term deterioration of prices and short-term export revenue instability (Prebisch 1984). Given the high productivity and high income elasticity of demand for the manufacturing goods produced by rich countries known as centre received continuously higher prices for their products[6]. If a secular decline of terms of trade of periphery is true forecast for future trends, long-lasting expansion of traditional exports cannot be relied upon for sustained long-run growth. It was felt that switching into import-substitution industrialisation was the only option for periphery to grow with the given export pessimism case[7]. Switching into import substituting industries

was also perceive as a means of reducing the income elasticity of demand in the periphery for its manufacturing imports from the centre.

The classical economists and later structuralists brand the manufacturing sector as an engine of growth[8]. This sector relatively generates increasing returns in the long-run not only within the sector itself but also in the other major sectors, that is rising productivity as output expands. Manufacturing sector has the potential of interrelated branches of activities and generates greater linkages and externalities. Agricultural and service sectors do generate linkages. However, the expansion of these sectors does not offer specialisation and division of labour within the sectors as like manufacturing sector. Productivity gains and technical change arising in manufacturing sector pass on to these sectors through purchase of capital and intermediate goods.

Switching into domestic production satisfying domestic demand replaces the imports. The government interventions in foreign trade and the price distortions arise due to that is to protect the import substituting manufacturing industries. Price distortions are expected to shelter the higher-cost local producers by allowing the domestic production more profitable. The above process can be an important strategy in raising manufacturing sector through foreign exchange savings and the generation of externalities and learning effects.

The danger is that this strategy targets the internal demand and neglects the external demand from export sector. Weiss (1988) has noted developing countries failed to lower their imports, while reducing the exports below its long-run potential for many cases. One can look at various explanations for this. First the composition of imports may change but not overall imports that includes capital and intermediate goods. Second the growing income inequalities can lead to shifts in consumer demand towards import-intensive commodities. Finally there is also a tendency that import-substitution policy creates biases in the incentive structure, lower the growth of potential exports. It is inevitable to call for an export-oriented policy at this stage which demand removal of biases in the incentive structure.

Externalities and Linkages

Generation of externalities and linkages are vital step for import-substituting industrialisation process. Externalities are generally defined as the effects created by individual producers/consumers that are felt elsewhere in the economy not reflected in the cost and revenue of the originator of the effect. Technological externalities and pecuniary externalities are two types of externalities. For example 'Firm A' incurs cost for their worker training for future needs. Suppose the worker leaves from 'Firm A' and joins 'Firm B' then these potential benefits are lost and 'Firm A' is left with bearing cost. The expectation is that protected firms, in this case 'Firm A', can have the ability to expand their expenditure including expenditure on training; the rest of the firms benefit by workers with no cost. The above direct interdependence among producers can be referred as technological externalities.
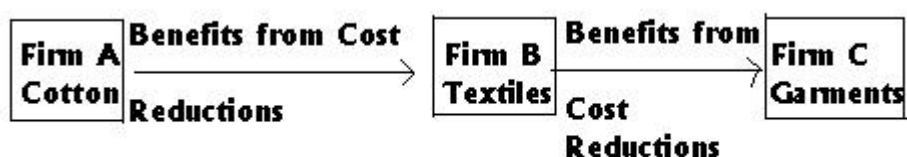

Figure 1: Pecuniary Externalities

Figure 1 indicates some of the possible pecuniary externalities. Pecuniary externalities are defined as the effects that revealed in price terms through market mechanism. Suppose if expansion of textiles production by 'Firm B' is subject to increasing returns of scale then there will be cost reductions. So that garment producer of 'Firm C' generates higher profit. Growth of textile production by 'Firm B' will create a demand for cotton production by 'Firm A' and will create higher profits in 'Firm C'. These are positive pecuniary externalities. In case if output of textiles by 'Firm B' is higher cost or lower quality than the competitors, and 'Firm C' is compelled to use the textiles from 'Firm B' rather than alternatives then this situation generates negative pecuniary externalities. Economic planners usually target broad economic perspective and higher existence of positive externalities.

There are number of scepticism over externalities. First, one can argue that it would be less costly for the government to directly subsidise such worker training rather than blindly protecting the industry. Direct subsidisation for worker training avoids the consumer welfare loss arises from protection. Second, by definition import substituting industries focuses limited small domestic market and this is major constraint of achieving economies-of-scale in the process of industrialisation.

Linkages are closely related with externalities and some times synonymous. It is narrowly defined as a series of production relationships in an intra-industry framework. Hirschman (1958) introduced backward and forward linkages reflect production interdependence. Backward linkage is from particular industry to its input suppliers. Forward linkage is from particular industry to its users.
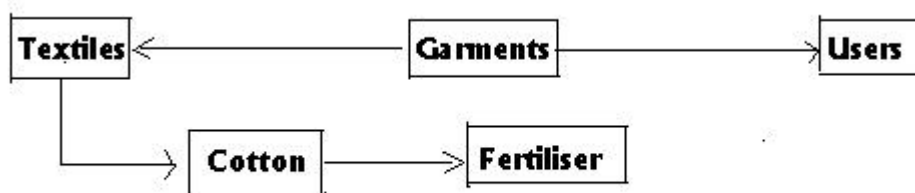
Figure 2: Backward and Forward Linkages

Figure 2 shows the backward and forward linkages. The garment industry needs textiles; these links are referred to as direct backward linkages. Textiles generate the need for cotton and fertiliser; these are known as indirect linkages. Users can be final consumers, retailers, and wholesalers; these are known as forward linkages. The Leontief inverse of an input and output table incorporates total linkages, both direct and indirect. The expectation here is that the higher the total linkages, the greater will be the inducement to expansion.

It is often argued that it is the manufacturing sector that generates higher linkages and having potential for generating higher externalities. Within manufacturing one should give main concern to the activities that form the maximum linkages. However, not all linkages create economically desirable outcomes, for example, establishing a garment

production creates a demand for textiles and encourage establishing higher capacity. If the domestic market is not adequate or the cost of production of textiles is relatively high then the cost of garment product is more than the world standard. If the garment industry is protected, leaving the industry profitable, then still the linkages can be justifiable. Linkages of this type will result in the establishment of a number of high cost supplying industries.

Infant Industry

A number of government interventions in foreign trade have the intention to promote infant industries. Imposing tariffs is one example, but this is not an effective method for a number of reasons. First, tariffs may not be an effective tool to target the specific industry. Second, tariffs are not easily removed once they are written into legislation and there is a danger that an infant never becomes efficient. Finally, tariffs generate both misallocation of resources and consumer welfare loss due to misalignment of domestic and world prices. A subsidy to an import substituting industry is an effective tool to target a specific industry[9]. Subsidising production can promote infant industries more cheaply compared to tariffs on imports. A subsidy can still lead to misallocation of resources but avoid consumer welfare loss due to the alignment of domestic and world prices. The other option is low-interest loans. If an industry's current high costs are outweighed by the later cost reductions, then the industry can borrow against its own future profits.

Advocates of protectionism promote the infant industry argument. This states that a temporary tariff is justified because it cuts down on imports while the infant-domestic industry learns how to produce at low enough costs to compete without the help of tariffs. Central to the argument is that new industries cannot be expected to compete on equal terms with established overseas producers. These industries need a limited period of protection from import competition while learning. The expectation is that, over time, costs of production will fall to international standards.
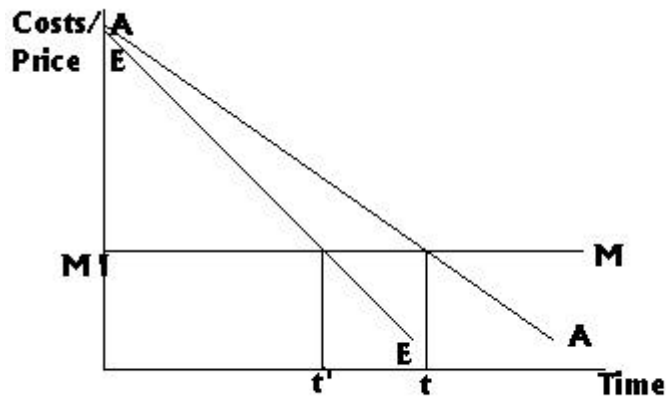
Figure3: Infant Industry: Learning and Externalities

Weiss (1991) has depicted the infant industry arguments using diagrams that relate costs of production of infants at a point of time. This is shown in Figure 3. The vertical and horizontal axes represent costs/prices and time respectively. The real average cost curve of an individual producer is falling as learning takes place over time and represented by the curve 'AA'. The Cost, Insurance and Fright (CIF) price of comparable imports remains constant in real terms and represented by 'MM". At the time of 't' the infant reached the international standards. If costs fall beyond 't' the firm can compete in the export market. The curve 'EE' represents externalities. This curve is derived from the infant's own cost curve 'AA' minus the external benefits per unit of output that are created for others. With the inclusion of 'EE' curve the maturity occurs at time 't"; the learning costs are lower; the gains after 't" are greater.

Figure 3 demonstrates that infant-industry protection generates more benefits wherever there are positive externalities. But to be realistic it is important that one should show more than the costs fall to international standard. First, this can be done by a detailed cost-benefit evaluation of the infant. Over the lifetime of the investment of an infant the discounted value of the later benefits should offset the discounted value of the initial costs. Second, the assumption that international prices remain constant is unrealistic. International prices can fall with the improvement in productivity. Finally, only firms which are prepared to understand, adapt and technologically active can be successful infants, not all the firms that are given protection.

The import substitution approach is subject to a number of criticisms. First, a real possibility of government failures and the costs associated with resulting from the attitudes of bureaucrats, influence of powerful pressure groups and substituting private interests on the expense of public interests by politicians and employees needs to be addressed. Second, prevailing foreign exchange controls may tend to promote the use of more inappropriate capital-intensive techniques of production. Third, exchange controls and protections together may result in a vast increase in rent-seeking activities. Forth, a forgoing view is that infant industries in developing countries have had a tendency never to grow up[10]. Finally, import-substitution policy creates biases in the incentive structure and lowers the growth of potential exports in the long term. This necessitates the need of export-oriented policy over time[11].

EXPORT ORIENTATION: TRADE LIBERALISATION

The concept 'trade liberalisation' does not mean complete free trade, but fewer trade barriers or a neutral trade regime. The process of removal of quota and tariff may continue until a neutral trade regime appears. A neutral trade regime may be defined as a situation with equal incentives to domestic sales and exports. Trade protection instruments such as tariffs and non-tariff barriers tend to discriminate between domestic and border prices. Trade reforms in this respect are likely to reduce the gap between domestic and border prices and tends to narrow the market prices with opportunity costs. Bhagwati (1978) defined a neutral trade regime as in equation (1) where

$$EER_X = EER_M \qquad\qquad (1)$$

where EER_X and EER_M indicate the effective exchange rate for exports and for imports respectively. The former refers to the number of units of domestic currency that can be obtained for a dollar worth of exports by considering all factors that affect the price of exports, such as export duties and subsidies. The latter refers to the number of units of domestic currency that would be paid for a dollar worth of imports by considering all factors that affect the price of imports such as tariffs and

surcharges. It is assumed that EER_M determines the nominal protection for import-competing firms selling in the domestic market. In a situation where:

$$EER_X < EER_M \qquad\qquad (2)$$

the policies are directed toward import substitution, and where

$$EER_X > EER_M \qquad\qquad (3)$$

the policies are directed towards over-subsidization of exports. The process of moving towards a neutral trade regime may be defined as trade liberalisation.

As a result of liberalisation, some activities may contract while others may expand. As resources in the contracting activities are likely to be affected, this would involve some political implications. Macroeconomic imbalances such as higher inflation and severe balance of payments problems are likely with liberalisation. To avoid uncertainties Michaely (1986) suggested an optimal path to trade liberalisation. Michaely recommended a multi-stage implementation, as being superior to a one-stage implementation on the grounds that one-stage implementation is not feasible politically or socially, as this would lead to greater unemployment and larger changes in income distribution.

Michaely further argues that the desirable first step is to eliminate all forms of quantitative restrictions. Further he suggested a uniform treatment of activities as far as tariff reductions are concerned. Three alternative "uniform" paths can be looked into. First, equiproportional(across-the board) reduction of protection of various activities. This would lead to a gradual reduction of the protection system. Second, equally large absolute reductions between various activities. The third method is named the 'concertina method'. In the initial stage of the policy, all protection rates above a certain ceiling are lowered to that ceiling, with no changes in other rates. The next step is that all rates are again brought to the lower ceiling and so on. This would

allow consistency in the lowering of the variance in the protection system. This tends now to be the approach used as bringing highest net benefit.

It is recognised within the Neoclassical literature that effective trade liberalisation requires the effective operation of all inter-related and inter-dependent markets, such as those for foreign exchange, finance, labour and capital market. In the absence of free movements in related markets, the benefits that accrue from liberalisation may be significantly reduced. Macroeconomic policies appear to be important in determining the survivability of trade liberalisation. Trade liberalisation may not be effective in countries with growing fiscal deficits, worsening external balance and rising inflation. For example, with the liberalisation, inflationary pressures lead to appreciation in the real exchange rate and worsen the current account deficit. High real lending and excessive debt-burden rate due to inflationary pressures lead to lower investment.

Adjustment assistance is the policy of compensating those jobs and investments that are displaced by import competition. Greater import competition entails displacement costs, in terms of worker, capital and other resources. Job losses need to be addressed in order to avoid the social and political unrest. Who pays this cost? One can argue that as long as the free-trade policy brings net gains to the nation, the gainers can compensate the injured while still retain the net gains from the free trade. The Government can play the mediator role between gainers and losers. This is referred to as adjustment assistance. This assistance can be used to relocate and retrain workers (and firms) for reemployment in sectors where employment is expanding.

TRADE EFFICIENCY
Economy as a whole
Government intervention in the form of foreign trade protection creates direct and indirect costs to the economy as a whole. The misallocation of resources in production and the reduction in consumer welfare because of the misalignment of domestic and foreign prices generate direct costs to the economy. Indirect costs derive from unproductive activities associated with protection such as evading tariffs, under-capacity utilisation and smuggling.
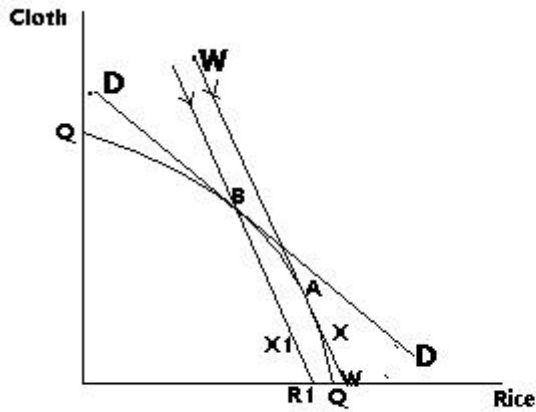
Figure 4: Allocative Cost of Protection

Kirkpatrick and Weiss (1992) explained some of the above impacts diagrammatically using the standard production possibility frontier in a two good model of cloth and rice. It is assumed in 'Figure 4' that protection creates costs, not benefits. The production frontier QQ signifies the maximum output of the economy in a situation where resources and technology are limited. WW and DD indicate international and domestic price lines respectively with DD incorporating some form of protection for cloth. In a free trade situation, 'A' is the efficient production point on the frontier, whilst trade along WW allows the combination of goods 'X' to be attained. In the situation of protection, 'B' is the production point and trade under these restricted conditions along WW will allow a lower combination of goods 'X1' to be obtained. 'R1W' is the allocative efficiency loss measured in terms of rice along the horizontal axis due to protection.
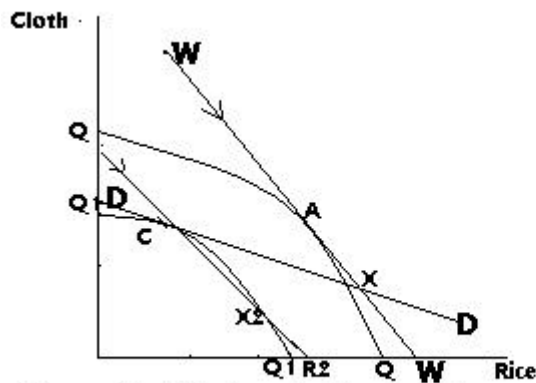
Figure 5: Total cost allowing for rent-seeking

Apart from allocative inefficiency, protection generates 'X- inefficiency', either by encouraging rent-seeking behaviour in order to receive preferential treatment from protection or by creating negative incentive effects. These processes raise unit costs. This can be illustrated by shifting the production possibility frontier to the left to Q1Q1(Figure 5). Under protection, point 'C' is the production point now, and trade along 'PW' allows the combination of goods 'X2'. Now 'R2W' is the loss due to protection which is higher than the loss in Figure 1.
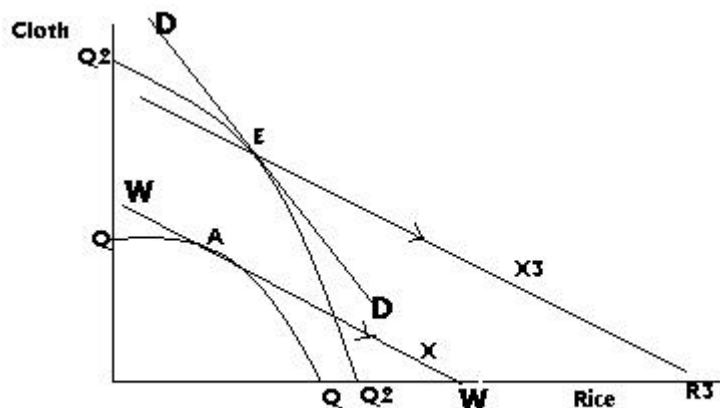
Figure 6: Gains from Protection

If the assumption that protection creates costs but no benefits is removed, then there is a possibility that the frontier can shift outward relative to the free trade position. The possibility arises when there are dynamic benefits from trade protection. In figure 6, a new frontier Q2Q2 is drawn, which as a result of protection is skewed towards greater cloth production compared to the original frontier QQ. In this figure, production under protection is at point 'E', and trading along 'PW' allows a combination of goods 'X3', which is above the original free trade combination of 'X'. The gain in terms of rice is R3W. These are alternative views on the merits of trade liberalisation. Kirkpatrick and Weiss (1992) argue that these alternative perceptions still need to be demonstrated conclusively.

Sector/Industry level

The neo-classical literature on industrialisation noted that the level of protection was high in developing countries and this, in turn, led to discriminatory impacts not only on import-competing industries but also various other branches and sectors. Export-

oriented industries need to be competitive in the world market to progress. To be competitive, the economy should move to an export promotion strategy which encourages greater competition and associated productivity gains, technological know-how and knowledge of international standards. Protectionist policies allow and maintain an exchange rate well above the free trade situation and result in local exporters receiving less local currency for a given unit of exports than the free trade situation. In addition, import controls raise domestic prices. Exporters are forced to use domestically produced inputs, which are relatively expensive and possibly inferior to that those available in foreign markets.

Protecting the industrial sector may harm the agricultural sector and generate price distortions in factor markets. Supporting the industrial sector at the expense of the agricultural sector can result in the agricultural sector suffering from an anti-export bias. A protectionist policy is just one among a range of government interventions that introduce distortions in factor prices. It is widely recognised that there is a divergence between the opportunity cost of wages and interest rates and the market price of wages and interest rates in developing countries. The need to introduce shadow price estimates of labour and capital into calculations of investment viability is essential in this circumstance. Therefore, it is argued that removal of protection is essential to promote efficient resource allocation among branches and sectors of the economy.

At the industry level the removal of trade protection generates efficiency in a number of ways. First, by eliminating foreign exchange constraints it increases the importing capacity of the economy. Second, by removing quantitative restrictions, it reduces the wastefulness from the stockpiling of goods in expectation of later shortages. In addition, it reduces the forced inactivity of resources due to the shortages of matching import components. Third, by eliminating X-inefficiency it raises the efficiency level in an industry and by eliminating monopoly profits it allows optimum resource allocation in an industry. Thus, it is expected that the process can lead to specialisation along the lines of the economy's comparative advantages.

Market level

It is argued in welfare economics that monopoly leads to inefficiency in pricing. Profit-maximising behaviour will ensure economic efficiency only in the context of a perfectly competitive market. Since protection allows domestic firms to operate under either monopoly or monopolistic competition, a rise in profits may represent the exercise of the firm's monopoly power in the market, rather than an improvement in efficiency.

Figure 7 compares the firm in perfect competition and in monopoly. In perfect competition, the firm faces a perfectly elastic demand curve, where average revenue (AR) is equal to marginal revenue (MR). In equilibrium, the firm is earning normal profits and the average total cost (ATC) is tangent to the demand curve. With profit maximisation, marginal revenue (MR) is equal marginal cost (MC), this leads to the efficient price P, where P = MC. In monopoly, the firm/industry faces a down-ward sloping demand curve. Profit maximisation behaviour (MC = MR) results in the price and output combination 'PQ', where efficiency pricing (P = MC) requires the combination P'Q'.
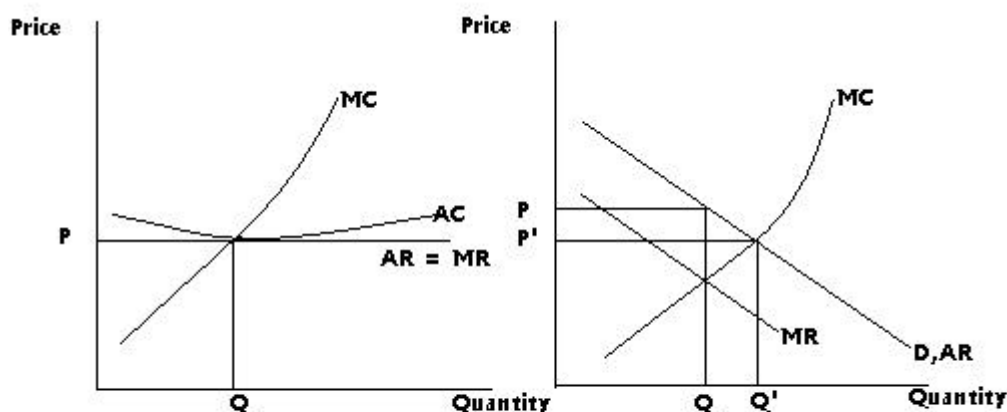
**Figure 7: Perfect Competition and Monopoly**

At the market level it is expected that with the opening to trade, domestic prices have to equate with the average cost of the firms in operation, since they cannot make excess profits. The protection factor is included in the present prices and cost structure of the firms. Thus liberalisation is expected to reduce domestic prices and this will

induce some of the inefficient firms to leave the industry. Thus liberalisation will reduce the average cost of operating firms. This process will go on until price equals marginal cost.

Firm level

A key argument behind trade liberalisation and an Export Promotion (EP) policy is that export expansion increases international competition and forces domestic firms to achieve international standards. At the firm level export expansion and import liberalisation creates an implicit 'Challenge Response' mechanism among domestic firms and this, it is argued, will eventually increase domestic efficiency.

'Best practice' production frontiers illustrate three types of technical advance which trade can promote[12]. Figure 8 illustrates the optimum point at the present state of technology. The vertical axis shows unit labour requirement and the horizontal axis shows unit capital requirement. PPo is the 'Best Practice' production frontier estimated from a sample of firms and represents the firm's existing state of technology. The efficient decision lies at the point where the relative factor price line is tangent to the production frontier PPo. F1, F2 and F3 are the factor price lines and represent the relative prices of a unit of labour and a unit of capital. Point B is technically efficient since it is on the frontier but point 'C' is technically inefficient. The overall inefficiency of point C is OD/OC. This can be divided into allocative (OD/OB) and technical (OB/OC) components. Point 'A' is the least cost techniqe in terms of factor prices and the existing state of technology. When a firm moves from point 'B' to point 'A' it regains its allocative efficiency. In other words, the already existing inefficiency, perhaps due to misallocation of resources has now been removed. Firms that are at point 'C' or point 'B' are inefficient and this may be partly the result of using labour biased technology due to prevailing import substituting policy.
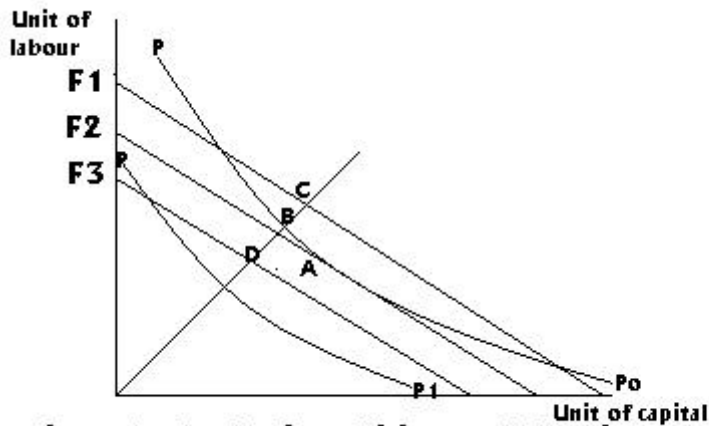
Figure 8: Productive efficiency of the Firm

It is also expected that investment by enterprises in respect to trade liberalisation may promote research and development activities, movement of relative factor prices, quality control and staff training and move the firm to the new frontier PP1, towards the origin. The proponents of liberal trade regimes agree that, in the long-run, further gains from improved allocative efficiency will not remain and only benefits from improved technical efficiency will continue. Pack (1988: 364) argued that liberalisation may have a substantial initial impact but not yield any steady-state benefits. However, since all the elements are subject to change in the long-term, as a result of foreign or domestic technical change and of changing prices both internationally and domestically, the concept of long-term productivity growth is ambiguous. We need further evidence in this regard.

MEASURES OF EFFICIENCY

Static measures of efficiency

The impact of trade policy on static efficiency is widely measured in terms of Nominal Protection Coefficient (NPC), Effective Rate of Protection (ERP), Cost-Benefit (CB) and Domestic Resource Cost (DRC) estimates.

Nominal protection coefficient (NPC)

Protection in the form of quota, tariff, taxes and subsidies on inputs and outputs generates drastic changes in resource allocation and output levels. This necessitates an awareness of the end result of protection. The Nominal Protection Coefficient (NPC)

can be defined as the ratio of the domestic price to the world price for a comparable commodity. The estimates of NPC will not capture the entire effects of protection. NPC represents the price rising effect of tariffs on a product and can be defined as

$$NPC = P_d / P_w \qquad (4)$$

where P_d is domestic price and P_w is world price. If NPC is greater than one then government protects producers.

Effective rate of protection (ERP)

Effective Rate of Protection (ERP) is defined in the literature as the percentage excess of domestic value-added obtainable by reason of the imposition of tariffs and other protective measures on the product and its inputs over value-added at world prices. In other words ERP is the percentage of domestic price value-added to world price value-added:

$$ERP = \frac{v_i^* - v_i}{v_i} \qquad (5)$$

where V_i^* is value-added at domestic prices in activity 'i' and V_i is value-added at world prices in activity 'i', under liberal trade. Other things being equal, it is expected that the higher the ERP level in an activity 'i' the greater will be output as compared with what its output would be in the absence of protection. The higher the anti-exports bias the greater the incentive to domestic production. The following situations tend to increase the ERP, (a) high import duty on output and low import duty on inputs, (b) low export tax on output and high export tax on inputs, and © imposition of licensing on output. The ERP is not strictly a measure of the efficiency with which resources are employed, but rather of the incentive to shift resources into particular activities.

Cost-benefit analysis

It is widely believed that market prices often fail to represent national opportunity costs, so that an alternative basis of valuation of an investment or project is required. Price distortions arise for various reasons such as state intervention in economic activities and lack of resource mobility. Where distortions are important shadow prices should be used for commodities or factors instead of prevailing market prices.

Cost benefit analysis is a commonly used technique for appraising new investments in public projects by incorporating economic prices. It is used for measuring the efficiency of existing projects. To decide whether an existing project continuously requires government support through either protection or subsidy this analysis can be used. In addition, this technique can be employed as part of an interventionist policy that attempts to direct private sector activity.

An investment or a project may be beneficial to the country if NPV > 0 and IRR > d are satisfied:

where NPV $= \dfrac{\sum NB}{(1+r)^t}$ (6)

and NPV, NB and IRR refer to "net present value", "net benefit" and "internal rate of return" respectively. One can derive NPV by using the appropriate discount rate (r). When NPV > 0, it means that in today's value terms, the stream of economic net benefits would be positive. The higher the r, is the lower the NPV. The IRR criterion focuses on the rate of discount (d) at which the NPV becomes zero:

$$NPV = \frac{\sum NB}{(1+d)^t} = 0$$ (7)

In other words, one can accept a project as feasible if it has an IRR greater than the interest rate (d > r). If one invests in this particular project, then one receives 'd' whilst elsewhere one receives a rate of return of 'r'.

Domestic resource cost

The Domestic Resource Cost (DRC) is an estimate of the opportunity cost in terms of domestic resources of generating a net marginal unit of foreign exchange. It gives the cost of domestic resources that are necessary to save or earn one unit of foreign exchange by producing a unit of value-added, for a particular plant or enterprise. In empirical research, DRC can be defined in the following notation[13],

$$DRC_i = \frac{\sum a_{Li} * L * CF_L + \sum a_{Ki} * K * CF_K + \sum a_{Ni} * N * CF_N}{(P_i - \sum a_{Ti} P_t)} \qquad (8)$$

where a_{Li}, a_{Ki} and a_{Ni} refer to the units of labour, capital and non-traded goods respectively required per unit of output 'i'. L, K and N indicate the unit market prices of labour, capital and non-traded goods respectively. CF_L, CF_K and CF_N represent the conversion factors of labour, capital and non-traded costs respectively[14]. P_i and P_t are the world prices of output 'i' and traded input 't' respectively. a_{Ti} represents the unit of input 'T' per unit of 'i'. $\sum$ refers to summation.

In the algebraic notation of the DRC ratio, non-tradables are in the numerator and tradables in the denominator. To determine whether or not a good falls into the tradable or non-tradable category, one must look at its ultimate impact on exports and imports and this often depends on judgement. If extra demand that arises in the domestic economy is met by imports or exports then the item falls into the tradable category. For consistency it is suggested that non-traded goods should be decomposed into non-traded and traded components and traded inputs be included in the denominator of the DRC ratio (Bruno 1972). The same treatment is appropriate to the annualised capital stock used in the calculations. The part of capital that is itself imported should be included in denominator while keeping domestically produced capital in the numerator (Bruno 1972).

The DRC criterion is an explicit expression of the comparative cost principle in international trade. A country has a comparative cost advantage if DRC < SER, where SER is the shadow exchange rate. This is the situation in which a country experiences

a positive net foreign exchange impact. If DRC > SER, then it reflects comparative disadvantage and a negative net foreign exchange benefit.

Two types of DRCs can be distinguished, one ex-ante and the other ex-post. The former is often used in micro level project evaluation and the latter for industry level cost of protection studies. DRCs at the ex-ante level can be made equivalent to conventional CB ratios or IRR[15]. DRCs at the ex-post level have two wings of which one includes only short-run variable cost (short-run DRCs) and the other includes past investment costs (long-run DRCs). The long-run DRCs incorporate the annualised replacement costs in the prices of the base year. Still, if ex-post long-run DRCs are static single year measure, they are inferior to the CB ratio of IRR which cover the whole life of an activity.

The main differences that can be identified between ERP and DRC measures is that in the case of the DRC shadow prices are used, whilst the ERP is based on market prices. In the absent of shadow pricing these two measures are same provided equivalent assumptions are adopted.

Dynamic measures of efficiency

Productivity growth

The impact of trade reform can also be assessed in dynamic terms. There can be three possible links between trade liberalisation and productivity growth. First, opening to trade encourages foreign competition and 'challenge response' and hence affects domestic efficiency. Second, the availability of imported inputs may lead to cost reductions partly due to improved capacity utilisation. Third, expansion of output due to opening to trade reduces the production costs and hence leads to better productivity performance.

Labour productivity and total factor productivity growth measures indicate the change in technology in the production function as well as a number of other effects such as changes in allocative and technical efficiency and in capacity utilisation rates. Labour productivity may be defined as,

- output per worker

- output per manhour, and

- value-added per worker

Total factor productivity is often referred as the 'residual' or the index of 'technical progress'. In other words this part of the changes in output cannot be explained by the changes of total inputs. The interpretation of the changes in total factor productivity differs according to the way in which inputs are measured and specified. When there is error in measurement it is wrong to conclude that the residual is productivity growth. Total factor productivity may be defined as

$$TFP = VA - a_1 L - a_2 K \tag{9}$$

where VA refers the growth of value-added at constant prices, L refers the growth of labour inputs in number of workers, K indicates the growth of capital inputs at constant prices and a_1 and a_2 the mean shares of labour and capital respectively. Share of labour is the average of the ratio of wages divided by value-added at the beginning and the end of the period under study. Share of capital is the average of the ratio of non-wage value-added divided by value-added divided by value-added at the beginning and end of the period of study.

Price-cost margins

There are links between price-cost margins and trade liberalisation. First, foreign competition and free entry restrain the exercise of market power by domestic firms in the domestic market. In other words, import competition may weaken the collusive agreements of domestic firms. This eventually leads them to cut their prices in order to avoid their loss of market share. Second, foreign competition improves the productive efficiency of inefficient producers and allows them to cut their prices. Third, as oligopolistic export firms tend to face greater difficulties in achieving tacit collusion with importers, largely because of communication, they are forced to cut their prices to compete in the export market. Finally, there is a possibility that an import competition induces mergers among domestic firms, as long as imports are close substitutes for domestic products.

The monopolistic profit maximisation model best explains the theoretical aspect of the price cost margin (PCM) measure. The model can be written as

$$MC = MR = P(1 - 1/n) \qquad (10)$$

where n is the price elasticity of demand. Rearranging equation gives:

$$\frac{P - MC}{P} = \frac{1}{n} \qquad (11)$$

The left hand side of the equation gives PCM and that is equal to the inverse of the elasticity of demand. Also, if MC equals average variable cost, then one can show that the ratio of profit to sales revenue (thus multiplying the numerator and denominator of PCM by output) is equal to the reciprocal of the demand elasticity. This is a version of Structure-Conduct-Performance (SCP) models, where performance (PCM) is determined by structure (n) and conduct is monopolistic.

Export growth

Export growth of a country may be an alternative measure of competitiveness. Trade liberalisation eliminates restricted markets due to protection allows domestic producers to access inputs cheaper than the earlier protected system. Growth in exports is likely by enhancing price competitiveness, increase in external demand and reductions in internal demand.

CONCLUSIONS

Structuralists, who believe in government involvement in foreign trade, hold the strong view that import-substituting industrialisation can be an important strategy for raising earnings and savings of foreign exchange, generating externalities and learning effects. In general, misallocation of resources and consumer welfare loss due to misalignment of domestic and world prices and rent-seeking activities are costs associated with protectionism. Import-substituting strategy creates biases in the

incentive structure and likely to reduce the potential exports. Focus is also on limited domestic market where industry unlikely to reap the benefits of economies-of-scale.

The expectation of the trade reforms is to generate trade efficiency in the short-run by eliminating allocative and technical inefficiency that possibly arises from trade protection. Long-run productivity growth is ambiguous one as there is vast range of changes in technical conditions and prices both internationally and domestically. It is possible to capture the short-run effects of trade reforms by using static and dynamic measures.

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[1] Seven of the entire episodes experienced a relaxation of quantitative restrictions. Seven other episodes had low quantitative restrictions to begin with. The rest experienced tariff cuts. Authors found that there appears to be not a single case in which higher tariffs were consciously used to improve neutrality.

[2] For a comprehensive account, see Helleiner (1990).

[3] Voluntary export restraints mean that the importing country gives exporters monopoly power, forces them to take it, and calls their compliance "voluntary" (Lindert 1996, p.140).

[4] The United States was the originator of about 54 out of the world's 89 major embargo occurrence between 1945 and 1983.

[5] New trade theorists introduced strategic trade policy argument. For review, see P.R. Krugman (1992).

[6] Development economists in the 1950s and 1960s, for example Prebisch, Nurkse, Lewis and Myrdal, shared the view of 'export pessimism' regarding traditional primary exports from developing countries.

[7] Export pessimism case was not completely acceptable as developing countries had the capabilities of expanding non-traditional exports or expanding south-south customs unions as a means of widening their markets.

[8] Structuralists are pessimistic in their view of how markets perform, but optimistic concerning the government's involvement in problem solving. Weiss (1988 pp107-16) argues for and against the industrial specialisation and dynamic increasing returns suggested by structuralists.

[9] Lindert (1996) pp.159-62 argues that production subsidy is preferable to the tariff in an import substituting industry since it achieves any given expansion of output or jobs at lower social costs. If the priority is to promote jobs then a subsidy tied to the number of workers employed might be better than a subsidy tied to output.

[10] For details Grabowski (1994) and Weiss (1988).

[11] Prebisch (1984) has shown his dissatisfaction of policies which create excessive biases against exporting.

[12] Farrell (1957) has used the term 'best practice' for the production frontier and has shown technical efficiency and allocative efficiency in a systematic manner.

[13] See for example Weiss (1991) for a detailed derivation of DRC.

[14] A conversion factor may be defined as the ratio of the shadow to the market price of any activity in an economy.

[15] Warr (1983) concludes that the DRC criterion is capable of distinguishing between projects generating positive and negative net present value. He found that all three criteria – CB ratio, IRR and DRC – are helpful in distinguishing desirable from undesirable projects but, none of them can be relied upon to rank a set of mutually exclusive projects correctly.