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A Policy Approach to Import Substitution for Papua New Guinea

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I. INTRODUCTION

For many countries import substitution has proven to be a trap. Although import substitution originally was conceived as a strategy for the larger economies of Latin America, smaller countries, faced with apparently intractable problems over foreign exchange, have been lured by the promise of declining balance of payments deficits, an expanding industrial sector, and fuller employment to try to produce at home what they had previously bought abroad.

Some import substitution will occur naturally as an economy grows, and the phrase 'import substitution policy' is used here to refer to active steps that might be taken by a government, through incentives and other means of encouragement, to speed up the process and even channel it into particular directions.

Policies of this sort have been actively pursued in all the major underdeveloped regions of the world and in countries of all sizes from the small island states of the Caribbean to the largest economies of Latin America and Asia. Nearly always the results have come nowhere near expectations. Typical examples, even among all this diversity, can be taken from almost anywhere. One, fairly representative, is the West African state of Ghana. As has often been the case, the strategy there was aimed specifically at industrialisation and it did, in fact, succeed in replacing some imports at the consumer product level. However, most of the resulting activities were based on imported raw materials and components. Therefore, these activities still had to rely on the availability of foreign exchange in order to stay in production, and this was not always forthcoming.

Ghana's experience also supports evidence from elsewhere that, far from always improving the foreign exchange situation, import substitution is just as likely to worsen it. An estimate in the late 1960s showed that a quarter of all manufacturing in that country was undertaken at a net loss of foreign exchange. Indeed, this problem was not confined to manufacturing industry; even the fishing industry managed to be a net user of foreign exchange for a time.

As a solution to unemployment, the strategy again has often been disappointing. In Ghana manufacturing units tended to be so capital intensive that by the early 1970s they were contributing 10 per cent to GDP but only 1.6 per cent to total employment.
Finally, far from always stimulating the economy, import substitution can in fact slow the rate of growth. In Ghana this happened because the emphasis on manufacturing was at the expense of other sectors, particularly those involved with food production. This in turn caused inflation and created pressures to import increasing quantities of food.  

Most of these experiences have been repeated elsewhere, sometimes in very different types of countries. The Philippines underwent a period of encouraging import substitution especially in the 1950s and 1960s. Here also it was based on consumer goods and led to little in the way of domestic production of raw materials and intermediate goods, again causing an increased dependence on imports for manufacturing with the primary exporting sector’s having difficulty supplying the foreign exchange necessary to keep industry going. Despite the relatively large domestic market in the Philippines, recent attempts to correct this trend are only achieving slow and spotty results. Here too, although some small-scale industries were established, an emphasis on capital intensity did not have the hoped for impact on labour absorption. In fact, despite the overall growth in manufacturing during the two decades up to the 1970s, most of which occurred in the initial stages of the policy, the sector’s contribution to total employment actually dropped from about 13 per cent to about 10.5 per cent.

These tendencies have been confirmed even in those countries regarded as having had some success with industrialisation strategies, including the larger ones such as Brazil and Mexico in Latin America or India and Korea in Asia. An increasing dependence on imports and a painful slowness in achieving any degree of self sufficiency, as well as a bias toward capital intensity, have been the common experience. Therefore, far from solving balance of payments problems or diversifying and expanding the structure of production, therefore, import substitution strategies have often simply shifted the burden of imports from consumer to intermediate goods without reducing imports, and have left behind them production units dependent on the protection that led to their establishment.

Part of the difficulty is institutional and transitional involving, for example, the displacing of traditional suppliers, or the usual infant-industry problems of learning management and production techniques. In small countries, however, there are deeper structural constraints on the expansion of production for domestic consumption which are not directly responsive to government policy tools. Restricted resource availability and limited market size are the most
often cited of these. Modern technology is usually developed out of a need to satisfy mass consumption and does not adapt easily and efficiently to production for limited markets. If a small country is to provide the variety of goods and services that its inhabitants are persuaded to accept by international demonstration effects, it must take advantage of both wider markets and resources the world offers. A decision to concentrate on production for the domestic market simply reduces the availability of goods and services.

This is not to say that, at least in Papua New Guinea, the potential for replacing imports with locally produced items has been exhausted. The problem, as for any government that takes active steps to promote import substitution, is to understand the limits to which import substitution can be pushed and stay within them. It is when encouragement is arbitrarily given to any investor who claims to be able to substitute for imports, in the hope that the costs involved will eventually be repaid, that real distortion in the production structure can occur. This applies not only at the level of individual projects but also to attitudes toward sectoral strategies. For Papua New Guinea in particular this may mean abandoning the traditional identification of import substitution with industry and concentrating on more immediate potential in agricultural sectors.6

The position taken in this paper is that indiscriminate encouragement of projects, in the vague hope that they might achieve some ill-defined goals of import substitution, is counter-productive. It suggests that incentives to be given to specific investments should not be provided automatically but with a clear understanding of what the costs and benefits are and who receives them. It also outlines very broadly some of the goals that might be achieved by import substitution and some of the places to look for the impact of the costs and benefits of the policies.

One danger of justifying incentives on the merits of individual cases is that it will aggravate 'red tape' and lengthen the time it takes to vet applications, hence discouraging investment. This danger is real and points to the need for a relatively simple and consistent framework within which to vet applications and, where smaller projects are concerned, to see that procedures do not get out of proportion to the project's size.8 In the case of larger projects the government will often identify those of particular interest before investors are found and then undertake active promotion of activities it finds viable in relation to its own goals. In these cases the main studies will therefore be complete before the investor is available.
Insofar as unsolicited applications from foreign sources to invest in Papua New Guinea are concerned, a case by case approach is already routine through the National Investment and Development Authority. The procedures involved have led to considerable criticism, however, and the aim being suggested here is to channel such studies into a consistent framework rather than to lengthen them. A positive contribution toward shortening the time it takes may be made, in fact, if responsible officials know what to look for and how to look.

Finally, of those investors who are discouraged by the procedures involved, many will have projects that are 'marginal' and would not in any case have been likely to succeed. In particular it will certainly not be a bad thing to discourage investors whose chief objective is to gain advantage from incentives.

Attention is required from policy makers on all these questions and this is intended to be a discussion paper in the most literal sense: the hope is to present some of the issues and so promote debate about whether the government should take an active role in promoting import substitution and, if so, what it should look for in potential projects. It stops short of discussing the important question of the relative efficiency of incentives themselves, but deals with the prior problem of whether and when incentives might be appropriate.

I emphasise that the paper deals in particular with investment aimed at the domestic market. In some cases there may be conflict between efforts to increase import substitution on the one hand and policies for export expansion on the other. Points will also be made about expanding production for the domestic market which apply equally to export markets. This paper is about import substitution, however, and no attempt is made to flag points that refer to both.
II. THE CONTROVERSY OVER IMPORT SUBSTITUTION

(1) The dangers

In general, businessmen probably would not complain if offered protected markets and other incentives by the government. For most, however, government interference goes against the grain and entrepreneurs are unlikely to approve in principle of production that could not survive without this type of encouragement. The general view would probably be that any profitability that depended on such assistance would be precarious indeed, and any investment that was inherently profitable would sooner or later be implemented anyway, without need of government intervention.

It is not difficult to find support for this attitude in economic theory. The idea that only a free market will lead to an optimal allocation of resources is central to one school of economic thought. Secondly, pure trade theory uses the principle of 'comparative advantage' to point out that gains from trade can be maximised only if each country produces those goods which use resources in which it is relatively abundant, and trades with other countries that are doing the same. Finally, balance of payments theory also advocates free trade, whereas the promotion and encouragement of import substitution activities involves protection, subsidies and other practical implications which, except under very special and unusual circumstances, will worsen rather than improve the balance of payments.

Neoclassical economic theory therefore advises against the adoption of special measures to promote import substitution. So too does most practical experience in countries that have tried to follow these strategies. The output of traditional import substitution industries is typically priced higher, is of poorer quality and offers less variety than its imported equivalent. Worse still, these activities may not even save foreign exchange. When the cost of imported inputs and the high cost of local resources, which might otherwise have been used to earn foreign exchange, are taken into account, there is often a net loss. 9

There are other difficulties too. The import content of many import substitution industries commits the country to purchasing
their inputs from abroad. If supplies are stopped, whether as a result of a balance of payments crisis or for any other reason, these industries will be unable to continue production and direct unemployment of investment will result. Furthermore, the links such producers have with foreign suppliers also implies an inability to generate inter-industry linkages within the domestic economy, a crucial aspect of developing an integrated domestic structure of production.

(ii) The constraints

The practical constraints that lead to these difficulties are simple to find, particularly in a small country such as Papua New Guinea. In the first place the small market makes it difficult to take advantage of economies of scale when only the domestic market is available. Production for the domestic market is likely to be at a higher unit cost, therefore, and so is price to the consumer. Furthermore, the need to take full advantage of what market there is results in a concentration on fewer varieties, while poor quality (when it really exists and is not simply an illusion based on prejudice against domestic products) is often a result of trying to keep costs down.

The second major structural constraint against expanding production in a small country is the relative scarcity of resource variety, making it necessary to import many inputs. What is more, even where the resources are locally available, the scale constraint may still inhibit production.

These twin problems of small markets and limited resources therefore interact with one another, especially in the case of manufacturing industry which is traditionally the sector at which import substitution is aimed. Furthermore, it is often in the earlier stages of manufacturing that these constraints operate most strongly. So while it might be possible to convert existing paper into toilet paper with reasonable efficiency on a small scale, it is not possible to produce the original paper under the same conditions. The establishment of 'backward linkages' from the finishing industry is therefore prevented. On the other hand, it may be possible to grow coffee but more difficult to create the 'forward linkage' into the manufacture of instant coffee for the domestic market alone.
It is these problems that lead to openness of small economies: the lack of resources implies a need to import inputs, and the small markets implies a need to export output.

Such constraints are inherent in the nature of small economies and are not directly responsive to policy manipulation. They are reinforced, however, by institutional problems that are a result of policy, though not necessarily of policy under the control of a national government.

All countries operate within an international system where the activities and interests of other countries have to be taken into account. This may be obvious in the case of export production where, for example, markets already serviced by other supply sources must be penetrated. The activities of other countries also impinge on production for the domestic market, however, where international demonstration effects and the power of foreign suppliers mould consumption patterns and inhibit import substitution. This applies not only to manufactured goods, where preferences are developed for imports that could never be locally manufactured, but also for agricultural products, such as wheat or rice, where preferences are developed for goods that could never be locally grown.

(iii) Justification for an active import substitution policy

Despite all the dangers of trying to encourage import substitution, the pressures to do so can be strong. Rising imports, for example, especially at a time when exports are not performing well in either quantity or price, and the difficulty of reducing imports in other ways when export earnings fall, encourage the government to intervene. Its options for improving the balance of payments include trying to diversify exports into commodities that do not have such volatile prices as primary products, and secondly, promoting production for the local market.

Beyond simple balance of payments problems there are also political pressures to create a greater degree of self-sufficiency in key areas, encourage a more modern structure of production, reduce unemployment, and so on. If the government responds to these pressures by promoting import substitution, the consequences will not necessarily be as disasterous as the theory and practice outlined above suggests. For example, there is room for
## Table 1

### Characteristics of Successful Import Substitution Activities

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<tr>
<th>THE DEMAND SIDE</th>
<th>Relevant Product Characteristics</th>
<th>Particular Influences in PNG</th>
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<tbody>
<tr>
<td>Objective Factor:</td>
<td>Homogeneity</td>
<td>Population size</td>
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<td>Market size</td>
<td>Indirect substitutability</td>
<td>GDP</td>
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<td>Availability of export markets</td>
<td>Income distribution</td>
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<td>Size of non-monetary sector</td>
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<td>Market fragmentation</td>
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<td>Infrastructural facilities</td>
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<th>THE SUPPLY SIDE</th>
<th>Relevant Product Characteristics</th>
<th>Particular Influences in PNG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objective Factor:</td>
<td>Technical economies of scale</td>
<td>Availability of raw materials</td>
</tr>
<tr>
<td>Production costs</td>
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<td>Transport costs</td>
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<td>Institutional incentives</td>
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<td>Input costs, e.g.</td>
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A. The Demand Side: Market Size

The most obvious characteristic of a successful import substitution activity, if it is to rely on the domestic market alone, is that the technology it uses should be able to operate competitively at the scale allowed by that market.

Among the many different factors determining demand are included population size, real income levels and the distribution of that income. In PNG a number of specific problems relevant to each of these must be taken into account. Although there is a population of around 3 million and a total national disposable income of around K1,700 million, or about K570 per capita (in 1981), and this constitutes a relatively large market when compared to other small countries, the effective market is constrained by:

(1) The large non-monetary sector. The figures given include an estimate of the non-monetary sector at around K300 million, leaving a disposable monetary income in the region of K1,400 million, or K470 per capita.12

(2) The fragmentation of the market both:
(i) geographically, in terms of a wide dispersal of population centres combined with poor transport facilities, and
(ii) distributionally, as a result of some inconsistencies in the operation of the market and non-market sectors. A large proportion of the population is involved in both market and non-market activities, causing a distribution of demand that differs from what it would be if the non-monetary and monetary sectors were isolated. At the other end of the scale the unusually large proportion of expatriates, and a growing group of high income Papua New Guineans, also destroys the uniformity of the market and introduces strong demonstration effects for high cost consumer goods that have little potential for domestic production.

All these factors make it difficult to compare levels of demand in PNG at the macro level with levels of demand in other countries with populations of a similar size.

The most popular approach to determining levels of demand for a potential activity at a commodity level is to study import statistics. Although such an exercise may provide a rough idea of the market, there are also many of reasons why the results must be used with care.
Homogeneity of goods

Even at the commodity level of the import statistics a number of goods may be aggregated into the same item, obscuring different types of demand and, perhaps, requiring different production techniques. In general, standardisation of a commodity is likely to be an advantage for import substitution, whereas product differentiation and variety will make it more difficult to substitute domestic production. It is easier to overcome consumer prejudice toward domestic substitutes when goods are homogeneous and varieties not important.

Completely standardised goods are rare, but some commodities are relatively homogeneous. Salt, rice, sugar, coffee, and even tyres are all subject to differences in quality, but not as seriously as shoes, for example, where fashion or status is important. In general, homogeneity is most likely among foodstuffs, although even in these cases, differences in quality can be important.

The quality and appearance of packaging is closely related to product differentiation and may be more important than differences in quality. Detergents, for example, differ more in appearance of packaging than in performance. This problem is generally more easily dealt with than substantive differences in quality, however.

The existence of variety and product differentiation makes it much more difficult to estimate the size of the market for a product. Import statistics are unlikely to reflect these variations even if alternative qualities of the same good serve quite different markets. Sometimes, where qualities supplied from different countries vary, it may be possible to infer variations from the average prices calculated for imports from different countries. However, in general, import statistics are too aggregated to be useful as more than a preliminary guide, and only a direct analysis of the market is conclusive.
(ii) Indirect import substitution

Another reason import statistics might not give an accurate reflection of the available market is that import substitution activities need not produce precisely the same commodity they are replacing on the import bill. Indeed, the import a local product is designed to replace may differ substantially from the replacement, the aim of the domestic alternative being to remove the need for imports rather than to replace them. In other words there may be potential for 'indirect import substitution'. At the top of the scale, for example, local production of ethanol, which could be domestically produced, might eventually be a substitute for refined gasoline, or the production of coconut oil for diesel fuel. In the building industry it may be possible to substitute clay bricks for cement and, among foodstuffs, corn for rice or wheat.

In many of these cases there may be market resistance in the face of international demonstration effects in favour of the import. Wheat flour, for example, is preferred to all other types of flour even though wheat could never be produced in PNG, although a substitute, such as corn, might be. Another example of indirect import substitution may be in the adoption of alternative production techniques. Heavy machinery is impossible to produce on a small scale and often figures large in the import bill, increasing in importance as domestic production expands. One way of dealing with this problem is through the development and use of alternative techniques not so dependent on the import of capital goods. A difficulty here for PNG is that the substitution of alternative factors of production for capital is generally taken to imply greater labour intensity. The high wage structure of PNG inhibits this type of substitution, however, and it may be necessary to calculate the trade offs between efficiency, factor intensity, and saving of foreign exchange.

(iii) Availability of export markets

Finally, under certain circumstances, it may be possible to consider the availability of export markets. In principle the primary aim of an import substitution activity is the production of goods for the domestic market. In a small country, this restricts scope for taking advantage of scale economies.
For many of the more traditional manufacturing import substitution activities there is little potential for expanding into foreign markets. Such industries often do little more than the final processing of imported inputs 'wrap and pack' or 'screwdriver' industries that use few local inputs other than labour and utilities and have little or no potential for generating domestic linkages.

These industries generally do not have dramatic economies of scale. Nevertheless mass production and more efficient marketing techniques are likely to give producers in larger and more developed countries a competitive edge in the export markets that PNG producers might otherwise be able to enter. In any case, industries that can function relatively efficiently for a protected domestic market by producing a final good from imported inputs on a small scale are precisely those industries that other countries may wish to establish for themselves. For such industries, therefore, foreign markets are difficult to penetrate even at the regional level.

On the other hand there may be some activities, especially in the area of primary products and industries based on local resource inputs and their processing, where it is possible to contemplate production for export markets in addition to the domestic market. However, if the export market is crucial for the survival of the industry, whether because of economies of scale or for other reasons, the industry should gear its production in such a way as to compete on the world market and not regard the satisfaction of domestic consumption as its primary concern.
B. THE SUPPLY SIDE: PRODUCTION COSTS

Problems on the demand side of feasible production refer to the determinants of the size of the market. The supply side, on the other hand, is concerned with the costs of production, also affected by the size of the market through scale economies, as well as by the availability of inputs.

(i) Technical economies of scale

In general, economies of scale depend on technologies developed in advanced countries where production is organised to serve very large markets.

One often cited general rule is that certain basic industrial activities, such as steel and petroleum based industries, involve very large scale economies whilst agricultural production and the final stages of industrial production tend to be more adaptable to smaller-scale economies. This is not inevitable since, for example, food processing industries are often more efficient at a larger scale than the output of primary inputs that go into them. It is, however, one reason why import substitution traditionally starts with the final stage of production and gets stuck as attempts are made to move back into the earlier stages of production. On the manufacturing side the result of this approach is generally a collection of industries involved in the finishing of commodities and using imported inputs with its linkages abroad.

However, the formation of an integrated structure of production depends on an ability to produce a much greater proportion of value added at home. For this, each stage of production must be acceptably efficient at the given market size.

(ii) Local raw materials

The ability of an activity to operate at a small scale is only part of the difficulty of generating linkages. A further question relates to the source of raw materials and whether it is necessary to import inputs.
Maximising local value added obviously implies domestic production at every stage of output product right back to the raw material. In an agriculturally oriented society the obvious sectors this points to for development are agriculture itself and food processing. As just noted, however, in food processing particularly economies of scale may be large and export markets necessary before an efficient level of output can be achieved. In this case the structural constraints of market size and resource availability are less important than some of the institutional difficulties of, for example, breaking into the world market. Nevertheless, where large scale is an essential part of production, this is an obvious longer run strategy already recognised by the government of PNG.

There also may be some activities where raw materials are not immediately available, but may become so in the future. Examples of this include leather based manufacturing and cigarette production. In these cases it might be necessary to import inputs in the short term if their use in production is feasible, and then switch to local inputs if and when they become available.

Finally, there are cases where inputs, even the major input, such as water in drinks or fruit for jams, exist locally while other necessary inputs, such as bottles and jars have to be imported. The cost of these subsidiary inputs can make a significant difference to production costs and materially affect efficiency.

(iii) Transport

Traditionally, transport costs are considered to provide natural protection for locally produced goods. The extra cost of transporting goods that are bulky or heavy from abroad provides some scope for absorbing diseconomies that arise from operating at less than optimum scale.

PNG is not in a position to benefit from this as much as some countries because it is geographically large and its population is dispersed, so the market is fragmented. Furthermore, infrastructure is not yet well developed and alternative foreign sources of supply are available from places that have transport costs competitive with those from place to place within PNG.
There are many aspects to this problem, each with its own constraint. For example, action to obtain a downward adjustment of coastal shipping rates may be administratively difficult, but cheaper than developing a comprehensive road system. Until some action is taken on the transport problem, however, goods that traditionally benefit from this natural protection, such as beverages or cement, are unlikely to be viable unless they can be produced efficiently by world standards. For many beverages, where economies of scale are not large anyway, this is not so important, but economies of scale in the production of cement are very large and natural protection needs to be very high before they are overridden.

(iv) Institutional protection and incentives

A further influence on production costs is the attitude of, and concessions made by, the government. In fact perhaps the major question for government policy with respect to import substitution activities relates to the extent to which local production should be allowed institutional protection and encouragement. Indeed, many of the difficulties that have already been pointed out in the early part of this paper as being a consequence of import substitution strategies have resulted from inappropriate protection.

In general, the aim should be to protect and promote only those industries that have the potential, ultimately, to survive without assistance from the government. There may be some exceptional cases where compelling reasons exist to protect activities whether they are viable or not. A need for self-sufficiency in some strategic item is one possible political justification for supporting production that is not obviously economically viable. There also may be a case for encouraging industries that, while not feasible in the short run, have longer-term or indirect benefits. These could include the role they play in transforming the economy, their use in moulding comparative advantage and future specialisation, or their more indirect spin-off effects in generating inter-industry linkages or creating employment.

Some of the longer-term or indirect benefits can be measured. However, the big difficulty here lies in knowing what potential the country has and thus what criteria would separate those
activities that do have a role to play in these respects from those that would simply lead to inefficiency and expensive protection.

(v) Wages and other input costs

The relatively high level of input costs constitutes one of the most often discussed disincentives to import substitution, indeed to all forms of production in all sectors in PNG. The high level of wages in particular, involves political decisions between distribution on the one hand and levels and type of economic growth on the other. Action on high utility and transport costs is also constrained by the availability of public investment funds and can be dealt with as part of a programme to encourage investment.
IV. IDENTIFYING POTENTIAL IMPORT SUBSTITUTION ACTIVITIES

The government's practical problem is to identify activities that have the characteristics likely to make them successful in helping reduce imports and save foreign exchange as well as achieving other goals of import substitution. The first step is the preliminary identification of sectors and industries that show promise, and the second is the investigation at project level of whether a particular activity is feasible and will achieve import substitution goals. Such projects may be those identified by the government itself as part of the first step, or they may be presented as an unsolicited proposal put forward by a potential investor. In all cases the procedures should be applied consistently as long as the goals they are to achieve are the same.

A. Identification of Sectors

There are a number of goals import substitution activities might achieve, and the identification of sectors and industries that show promise depends ultimately on what goals policymakers decide should be pursued.

(i) Identification criteria

(a) Maximisation of foreign exchange saving

An obvious aim of promoting import substitution is the saving of foreign exchange. It has already been pointed out, however, that it is not always easy, even after the project has been set up, to know whether this goal is being achieved.

It is not sufficient, perhaps not even necessary, that the project be financially profitable. Net saving must take into account the cost of imported inputs, the value of capital costs, repatriated profits, and even, for a complete analysis, the opportunity costs of local resources used and the foreign exchange impact on related activities.
The saving of foreign exchange is most likely to be maximised where raw materials are produced locally, of course. Indirect import substitution, where alternative goods based on local raw materials replace imports based on inputs not domestically available, may also help this strategy. For example, clay bricks and slates or wood may be able to replace concrete, asbestos or corrugated iron in construction. Changes in consumption patterns might be involved, but if the saving in foreign exchange justify it, the government may be able to use its influence in this matter.

Maximum potential for saving foreign exchange is not necessarily to be found among those industries that figure largest in the import bill. There may be very little potential for domestic production of those commodities that cost most foreign exchange. On the other hand, replacement by local production of goods at the top of the import bill would, if successful, have the greatest foreign exchange impact.

If the government is looking for import substitution activities to promote, therefore, the simple expedient of ranking imports by their total cost and considering the feasibility of domestic production for each at a project level would at least separate those commodities that have potential from those that must either continue to be imported or that can be replaced, through indirect substitution and a change in consumption patterns.

(b) Maximisation of industrial expansion

Where the major pressures to institute an import substitution strategy come from the balance of payments, any sectoral bias of the activities that result should depend on what the major items are in the import bill and what activities are most likely to be feasible. The import bill in PNG contains many agricultural commodities even though the country is basically a rural society with considerable resources in terms of arable land and a strong agricultural tradition. Therefore there is reason to suppose that the immediate potential for successful import substitution will come from the primary sectors.

Nevertheless, the traditional role of import substitution is as part of an overall industrialisation strategy and this is where most experience from other countries lies. In an extreme form
one goal of the policy could simple be to maximise the number of manufacturing plants and so create an industrial atmosphere suitable to the training of an indigenous workforce. In this case the tendency would be to encourage the more traditional import substitution industries producing, at a small scale, a wide range of often unrelated basic products from imported inputs. Items from wire nails through wood screws, spades and shovels, fertilizer mixing, paper bags, light engineering products, and a multitude of other goods can be included here. The major criteria for choice in these cases generally relate to the scale characteristics of the technology involved; and identifying suitable activities of this type is often the main objective of an import substitution study.

Such industries may have a role to play in establishing an industrial base for the country, but the domestic value added of most, and the actual foreign exchange saved when all different costs are included, often turn out to be relatively small.

Furthermore, since their inputs generally come directly from abroad and output is sold directly to the consumer, these activities do little to form the basis for an interconnected structure of production which depends on itself rather than on external sources of supply.

Investment depending on imports for recurrent inputs may also inhibit the government’s freedom to act in restricting imports during times of balance of payments crises, since restricting imported inputs will result in idle investment.

For these reasons, the traditional industrial bias has often been the cause of disappointing results from import substitution policies. Before such a bias is introduced, therefore, it is important to be clear about what it is hoped to achieve.

(c) Maximisation of potential for export growth

Import substitution may sometimes be regarded only as a first step in the diversification and expansion of export activity. In this case potential is restricted to items that can be produced and delivered to the export market at competitive prices.
Although the availability of export markets will offset the constraint of a small domestic market, there will be the new problem of displacing present suppliers in the foreign market. If the activity must rely on such markets for its survival, this matter should be dealt with before it is established as an import substitution activity. In such a case it will no longer be primarily an import substitution activity.

(d) Problem-oriented import substitution

It is not necessary for an activity to have a significant foreign exchange impact at the macro level for it to serve import substitution objectives. Neither is it necessarily the case that projects with maximum foreign exchange effect will have the greatest social effect. A relatively small project might have a considerable impact in a local area. Transportation difficulties may, for example, affect supplies of diesel fuel to a remote island community. It is here that a project to produce coconut oil as fuel for diesel generators might be relatively successful, even though in national terms the value of foreign exchange saved might be insignificant. Indeed, in the present state of the art, potential for replacing all diesel by coconut oil in the country as a whole may be far outweighed by loss of efficiency in generators, and even the cost of coconut oil relative to that of diesel. It is only at the local level, where there are special problems, that the replacement makes sense because, in this case, of the relief it brings from dependence on uncertain supplies of traditional fuels.  

It is not easy to identify projects of this sort from the viewpoint of a central government. The initiative is more likely to come from the local level where the problems are faced. When such projects arise, however, they can be investigated in much the same way as more conventional ones.

(ii) Examples of sectoral potential

Some of these categories overlap whilst others are mutually exclusive, but they do at least show the variety of goals that import substitution may set out to achieve. Although differing objectives will lead to the promotion of different types of industry, a few more or less obvious points might be made
concerning those sectors containing the most potential for import substitution activities.

The sectors that do show promise for successful import substitution are those in which local value added will be maximised. In general these will use local resources. As already pointed out, given the characteristics of PNG, this implies a bias toward agricultural products and industries based on agricultural and other locally available primary raw materials. Not all agricultural imports are directly substitutable domestically, of course. Even tropical products may face severe agronomic problems. However, research and development in this area is more likely to have an immediate impact on import substitution than attempts to develop alternative technologies in manufacturing industries; although for long-term self-sufficiency efforts must be directed in the latter direction also.

Local resource based activities are also likely to be promising for export expansion, of course. The difference is that there is a scale constraint on the activities aimed at the domestic market whereas the problem for export industries is in finding export markets where competition is possible even after taking transport and other exporting expenses into account.

There is clearly room for overlap here between import substitution and export expansion, but there will also be activities that are viable domestically without having to deal with export markets in the first instance. Similarly, there will be industries that cannot survive without the larger markets exporting provides.

Among manufacturing industries, those requiring heavy raw materials not available in PNG, and operating with large-scale economies must be ruled out in the foreseeable future for this country. Some of these industries, such as basic iron and steel production, are early in the the production process with strong forward linkages and do not in any case appear directly as an import. However, many heavy industries connected with them, such as the construction of machinery and transport equipment, do appear and will probably continue to appear in import statistics. The only likely potential in this area for domestic production is in the assembly of some machinery and vehicles, but even in such screwdriver industries economies of scale are often substantial.
Similarly, high technology industries, especially those still in the process of development, will be situated close to the centre of research. Again, assembly stages of production in these goods, including, for example, electronic and other scientific instruments, do have potential in developing countries. However, plants involved with such activities are generally large-scale and export-oriented rather than import-substituting. They create few linkages and in any case their location depends on an abundance of cheap labour, which PNG does not have.

Food processing provides the most obvious of the manufacturing activities that may have potential in the domestic market, along with the processing of raw materials such as wood,\textsuperscript{15} rubber, and leather. On the other hand, processing the minerals that exist in PNG tends to be a larger-scale activity and export markets are more likely to be necessary. It may also tend to be polluting and expensive on energy.

Finally, there are activities that seem to satisfy some of the most important conditions but not others. Cement, for example, comes in a number of forms but the most common, Portland cement, is a fairly homogeneous product. Domestic production would use local resources and, because of high transport costs, would enjoy substantial natural protection. On the other hand, economies of scale for this industry are very large, and domestic demand may not be sufficient to justify production at sufficient scale. Furthermore, there are more easily produced substitutes, such as wood and clay bricks, which could be promoted as substitutes to reduce demand still further. Also, the same transport costs that provide natural protection also make it difficult to produce cement for export.
B. ASSESSMENT CRITERIA AT THE PROJECT LEVEL

(1) The need for assessment procedures

Some of the goals of import substitution may lead the government to identify sectors or particular activities it would like to encourage. If it does, of course, the problem of finding sources for investment remains. In a few cases the government may be able to provide the finance itself, or it could make a particular effort to gain the interest of possible investors for a project. It would not be practical for this to be a general rule, however, and the final result of the identification exercise may be a list of activities that policy makers consider viable for local production, but that has little use other than in vague investment promotion activities. Furthermore, at the same time as the government tries to identify potentially viable activities, it will be faced routinely with suggestions and applications for activities it has not already considered.

In all instances, whether projects are put forward at the initiative of the government or of private investors, it is important that there be a consistent framework for determining in advance if the activity is likely to achieve national goals. Criteria are needed to help the government decide whether a project should be tolerated, encouraged, or even actively supported through financial incentives of various types, and if so how much support should be provided.

This paper concludes with some brief suggestions concerning how the assessment of projects aimed at import substitution might be approached.

(ii) The content of an assessment procedure

It has already been pointed out that the performance of an import substitution activity is likely to vary according to the interest group whose viewpoint is taken. For the investor, financial profitability will be the immediate, often the only, criterion for success. The consumer’s judgement will depend on the price and quality of the goods offered relative to those of competing
imports. For the Bank of Papua New Guinea the impact of the project on the balance of payments will be the relevant consideration, while the Ministry of Finance will be concerned with the repercussions of the project on government revenue. Policy makers concerned with the longer term future of the structure of production in general will be interested in the inter-industry linkages that are, or can be, generated and how the project fits in with sectoral priorities. Other interest groups will be concerned with the employment and distributional impact of the activity.

Not all of these implications stem directly from the import substitution character of the activity, of course, and some will be more easily identifiable and quantifiable than others. However, a full assessment should indicate which actors will be affected and by how much, in order that a clear idea of what is being gained or lost, and by who, can be obtained.

One possible approach to the assessment would be by making the usual calculations of financial profitability and modifying them according to other costs and benefits that accrue. This is essentially the approach of standard cost-benefit analysis and has the advantage of producing a single measure that leads to an apparently objective decision.

This objectivity is an illusion, however. The multitude of inevitable subjective judgements have simply been swept under the carpet of calculations that go into the final result. Furthermore, whilst that result attempts to incorporate a balancing of the gains and losses according to policy guidelines that specify distributional and allocative priorities, the policy makers themselves, who must ultimately make the final decisions concerning the project, may not be aware how the priorities they have set, perhaps arbitrarily, affect the result. Disentangling the quantitative and qualitative aspects of the results would involve a careful analysis of the whole study which a political decision maker might have neither the qualifications nor the inclination to do.

An alternative, more explicit, approach would be to specify the different effects separately and leave the decision on how they should be balanced as a political one to be taken when the study is complete. Costs and benefits, whether financial, economic, or social, of each type and for each interest group can be identi-
fied separately and then compared. The distributional aspects of the project will thereby be identified explicitly.

It is suggested here that a consistent framework for assessment could be based on arranging the analysis according to costs and benefits to the groups already specified. Perhaps they could then be presented in the form of a relatively simple table, such as suggested in Table 2 which uses the following disaggregation.

(a) Financial profitability

A standard financial analysis will be necessary to convince any private investor to take part in the project. In the case of an unsolicited application to invest this will often have been done by the investor himself. For projects the government wishes to encourage specifically, experts in the activity involved will have to be commissioned to report on the technical feasibility of the project and produce the usual cash flow and discounting analysis.

Where the returns to a project are long term, but the benefits accruing under other headings (below) justify it, there may be some advantage for the government to authorise incentives that will affect financial profitability directly in the initial years. Of course, these will have to be taken into account under this heading to be later set off against costs under government revenue. However, it would be useful to state the position with and without special treatment in order to assess the importance of incentives to the investment.

(b) Economic profitability

Modifications that might be made to the financial analysis according to accounting ratios calculated via 'Little-Mirrlees' principles, or using shadow exchange rates and UNIDO principles, would provide an accounting of the foreign exchange impact of the project.

As long as the various ratios have already been calculated this would not be a very time consuming exercise. It would be useful also for its inclusion of the opportunity cost of local resources in terms of foreign exchange.
<table>
<thead>
<tr>
<th>Alternative viewpoints of investment goals</th>
<th>Years ——&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Quantifiable:</strong></td>
<td></td>
</tr>
<tr>
<td>1. Financial profitability</td>
<td>Sources: Investment feasibility study</td>
</tr>
<tr>
<td>2. Economic profitability</td>
<td>Application of shadow prices to investment feasibility study</td>
</tr>
<tr>
<td>3. Balance of payments impact</td>
<td>Analysis of substituted imports, offset by imported inputs and other foreign exchange flows</td>
</tr>
<tr>
<td>4. Government revenue</td>
<td>Direct costs of subsidy and soft credit programmes offset by income from new duties on imports and other new taxes, depending on incentives granted</td>
</tr>
<tr>
<td>5. Consumer cost</td>
<td>Estimates of demand adjusted by the difference in retail price between import and local production</td>
</tr>
<tr>
<td><strong>Qualitative and partly quantifiable:</strong></td>
<td></td>
</tr>
<tr>
<td>6. Consumer cost</td>
<td>Specification of differences in quality and variety</td>
</tr>
<tr>
<td>7. Protection</td>
<td>Calculation of effective protection, and specification of import bans or other incentives</td>
</tr>
<tr>
<td>8. Other economic goals</td>
<td>Specification and/or calculation of distributional implications, generation of linkages, etc.</td>
</tr>
<tr>
<td>9. Social goals</td>
<td>Calculation and/or specification of employment levels, location of activity, etc.</td>
</tr>
</tbody>
</table>
Limited facilities of this sort are already available in the NPO, and include a number of optional distributional parameters reflecting government priorities. However, the procedure will not highlight the distributional impact of the project explicitly in the way that a separate accounting under each heading, as suggested here, will.

(c) Balance of payments impact

The direct balance of payments impact can be set out in terms of material flows and financial flows. The former will cover foreign exchange outflows on capital and other start-up costs spent abroad in addition to recurrent imported input costs.

The balance of payments will also be affected by financial flows, including repayment of loans and interest on those loans, profit repatriation, and even the behaviour of salary earners and hence the relative proportions of citizen and noncitizen employees of the project.

The nature and quantity of imported inputs will depend to a great extent on the type of project involved. If it is necessary to use imported inputs there is little that can be done about it. The government may have control over some of the financial flows, however, which could form part of an incentives package. If so, they must all be taken into account.

(d) Government revenue

Calculations of the impact on government revenue and expenditure presents little difficulty in principle but care needs to be taken to ensure accurate coverage. For example, it is clearly necessary to include the cost of any incentives that involve outflows. In addition, the direct cost of feasibility studies, the cost of soft loans and equity, and assistance with the cost of extra infrastructure will be included. Also shown on the cost side must be loss of revenue, such as that which would have accrued from duties, if any, on imports replaced by local production.

On the other hand, import duties might not have been levied, or at least might not have been so high, until the granting of
protection to the domestic producer. Hence the project might lead to some income from this source. There may also be income from company and personal taxes as a result of the new production. If these are waived as part of an incentives package, incidentally, they should not appear as a cost since, in the absence of the project, income from this source would not have arisen either. In this case the concession merely results in a postponement (and hence a discounting) of the income from taxes.

(e) Consumer cost

Some aspects of the measurement of consumer cost will not be easy to deal with. The most obvious cost will be the difference between the price of the commodity produced locally and the price of the import displaced. There may be some 'import parity' pricing arrangement provided as part of the concession package, but there will always be difficulty over determining what the price of imports would have been in the absence of domestic production. Furthermore, import parity pricing formulae often involve minimum cost escape clauses, and calculation of the true financial cost to the consumer, especially in advance as is necessary for a feasibility study, is complicated.

Other costs to the consumer will include differences in quality and variety. These are even more difficult to quantify directly of course, and may, like differences in price, affect demand and hence all the rest of the calculations of the feasibility study.

It might be possible to use calculations on income and price elasticities of demand to help, and where a project has forward linkages, its output being an input to some other activity, it may be possible to estimate more exactly the financial implications of a higher priced or poorer quality product.

It may in practice not be possible to quantify many of the consumer costs accurately, but some attempt should be made to specify them and their possible effects on the feasibility of the project.
(f) Other effects

These categories include the main interests that will be affected by every import substitution project and an analysis of them should form the minimum requirement of an assessment study.

There will be further effects, however, which in some cases may have a decisive influence on the acceptability of the project, even though they do not stem directly from the import substitution nature of the project. Employment creation is one of such effect, and another includes any special distributional issues, such as interpersonal distribution, numbers and different types of people affected, and regional distribution. Again these may not always be easily quantifiable, but where they exist (for example, a particularly depressed area is benefitted in some way) they can at least be specified and included for subjective judgement in the final decision.

Finally the linkages generated by the activity constitute yet another issue that may be important. If possible, potential linkage generation should be included as well as immediate linkages that may occur. Demand or supply from a new industry may not of itself be enough to generate a linkage, but it may make an important contribution to the development of demand or supply.
V. CONCLUSIONS

There are many dangers involved in trying to implement an active import substitution policy. They can arise in economies of all sizes but are compounded by the structural constraints of limited markets and few resources in small countries. Although it may always be possible to establish domestic production of imported goods, the relevant question is whether the cost of doing so in any particular case outweighs the benefits. There may be strategic grounds beyond economic profitability for producing output more expensively than competing imports, but in a small country the scope for this is limited.

So any active import substitution strategy must be considered with care if it is not to promote a structure of production based on inefficiency, still dependent on imports, without any useful impact on employment, and with no potential for overcoming any of these or other deficiencies.

The government can avoid problems such as these only if it is clear what aims it has in mind for its import substitution policies and is careful to encourage only those investors likely to achieve them. Even if it is not possible to look at every investment proposal on a case by case basis, an understanding of its goals should help to develop guidelines for investment. Where large investments are concerned, however, or where encouragement that involves direct costs to the government are involved, there is a stronger case for investigating each proposal in a way that reflects its size and importance.

This paper has been concerned mainly with pointing out what sort of characteristics should be looked for in import substitution activities, and in conclusion I would like to emphasise two points in particular about the relevance to PNG of conventional attitudes toward the strategy.

The first point concerns the way in which consumption patterns and technology are determined and how this affects the potential for import substitution. Import substitution refers specifically to the market sector and the discussion has been confined mainly to that part of the economy. It should not be forgotten, however, that most of the PNG population is still involved to a greater or lesser extent with
subsistence production which, by definition, depends on local resources.

It is a part of the process of 'development' that the subsistence sector will decline in favour of the market economy, and in this latter sector consumption patterns, as well as the technology and resources necessary to support them, are heavily influenced from abroad. As a result, the shift from subsistence will probably lead to increasing dependence on imports. Thus it is development that alters the consumption pattern from one that is indigiously appropriate to one that is less likely to be so. Import substitution then becomes a process of trying to force production back into a pattern that fits in better with the new consumption structure.

The point being emphasised here is that the conventional aim of import substitution is to alter production structures, while it remains generally passive as far as consumption patterns and technology is concerned. It generally does not regard the content of consumption patterns as a variable that can be manipulated in directions where production potential lies. There would, however, be much greater potential for import substitution if consumption patterns and technology, as well as the production structure, could be regarded as variables that are to some extent adaptable to local resources.

It is, of course, not easy in an open underdeveloped economy to alter either consumption patterns or technology in this way. On the other hand it is important to bear in mind that they too have evolved as a result of institutional and policy variables and so are open to influence. Potential for this in PNG is probably not dramatic in the short run but it may be possible to find significant potential for what I have called in this paper 'indirect import substitution', particularly in areas such as building materials and food, for example.

A second conventional idea about import substitution that needs to be treated carefully in the context of PNG is the one that regards the strategy as an industrialisation programme. It may be desirable to break away from a situation where developing countries depend on primary production while rich countries specialise in manufacturing. However, it is the attempt to do this by importing unmodified production structures and technology, based on the mass markets and access to a wide variety of resources rich countries have, that leads to the establishment of domestic finishing industries, saving little foreign exchange, creating little employment and having little potential for generating domestic linkages.
The small-country characteristics of PNG could well cause foreign technology to have just these effects. On the other hand, the abundance of land and the rural traditions of the country suggest that there is potential for diversifying production, maximising local value added, and saving foreign exchange if resource based industries are encouraged.

This does not imply shifting the conventional import substitution bias from secondary to primary industry so much as dispensing altogether with sectoral biases. Import substitution can still be used to encourage a manufacturing sector, but by concentrating on those activities that use local resources and by developing related primary industries where necessary. At the same time there is no reason why these resources should not be used to replace imported agricultural products directly.

The suggestion is, therefore, to orient the programme so that the use of local resources is encouraged both to replace imports directly and to support an appropriate manufacturing sector that will also replace imports.

A concentration on goals rather than sectors will also force the government to specify those goals and to study prospective activities in the light of them. It can do this both for activities it identifies itself as desirable, in which case it must also bear in mind the difficulty of obtaining investment funds, or for unsolicited applications by investors.

A corollary of this is that incentives and concessions should not be provided indiscriminately, but on the basis of the potential contribution the investment will make. In the case of each project the decision should depend on the answer to a single question: How will it contribute to the goals of import substitution?
FOOTNOTES

1. (p. 1) See, for example, Steel (1972) Table VI.


3. (p. 1) See Killick (1978), Ch. 8, for a more complete discussion of the issues raised in in relation to Ghana.

4. (p. 2) There is much literature on the experience of the Philippines with import substitution. Many of the most important points are made by the World Bank (1976) while Wong (1979) provides a summary comparison of results from using the strategy in several of the ASEAN countries.


6. (p. 2) The two classic studies on the more successful countries relevant to this topic are Little, Scitovsky and Scott (1970) and Malassa (1981).

7. (p. 3) This point is made again later in the paper and also argued in Wyeth (1983).

8. (p. 3) Garnaut and Baxter (1982) pp. 244–245 object to a case by case analysis but seem to be discussing merely the assurance that producers will stay within guidelines rather than the circumstances under which positive encouragement might be offered. Objections that a case by case analysis wastes excessive time relative to the investments involved may also reflect difficulties over guidelines on what to look for and efficiency of procedures.

9. (p. 5) There is considerable economic theory, not to say controversy, compressed in these two paragraphs. The aim of the present paper is to concentrate on practical issues, however, and no attempt will be made to deal in greater detail with the underlying theoretical debates, important though they are for the approach taken. The theory is available in basic texts on international trade, while the orthodox neoclassical perspective has been well described, for the PNG context, in Whalley (1982).

10. (p. 8) The dangers of allowing comparative advantage to determine trade patterns also forms a massive literature. One of the earliest qualifications is found in the nineteenth century ideas of Friedrich List now referred to as ‘the infant industry argument’. The best known of the modern generation is the ‘Prebisch–Singer’ hypothesis concerning declining terms of trade for primary products, another is Bhagwati’s idea of ‘immiserising growth’ and, from more radical literature, comes Arghiri Emmanuel’s ideas about ‘unequal exchange’. The point about imperfections elsewhere in system justifying a country like PNG, itself using protection, is an implication of the standard
neoclassical 'theory of the second best'. All these ideas may be
looked up in any good trade or economics text book.

11. (p. 9) This assertion might sound suspiciously like saying the
government should see that production should not expand beyond poten-
tial implied by the country's comparative advantage. I am avoiding
the phrase, however, because of looseness in modern literature about
what it is that determines comparative advantage. The neoclassical
explanation of factor abundance is complicated by what determines
factor abundance whilst in some literature the concept has come to
include pretty well everything, from factor abundance even to trade
restrictions, that could affect trade, so turning the theory of com-
parative advantage into a tautology of comparative advantage.

12. (p. 11) These figures are from PNG National Statistical Office,
(1982).

13. (p. 12) Ignoring this point is a common problem especially among
consultants concerned with identifying general production potential as
distinct from investors investigating the feasibility of a particular
project. At a general level the studies by Kent, Irlam, Wilson, and
Claringbould (1968 and 1972) concentrated on this method of assessing
demand. More recently and specifically, no attempt seems to have been
made by a team of UNIDO consultants to disaggregate different shoe
markets in their attempt to determine the feasibility of (someone else)
investing in shoe making in Papua New Guinea — not, perhaps,
that shoe making is a bad choice for PNG production.

14. (p. 22) The reason for dwelling on the case of coconut oil for
diesel here is that this is a project in the field of 'appropriate
technology' actually being undertaken by the Ministry of Works and
Supply at present. So also are experiments on the use of ethanol, the
production of which has been widely discussed in connection with Ramu
sugar and other projects.

15. (p. 24) Note that a number of studies undertaken by the Department
of Forests suggest that it is not in fact worth carrying out further
processing of wood for export under present circumstances. The vali-
dity of this conclusion refers to a limited type of processing, how-
ever, and depends on a number of assumptions referring to temporary
price and market conditions. Furthermore scope is seen for import
substitution based on forest products. See PNG Ministry of Forests
(1979) and Frazer (1981).
BIBLIOGRAPHY

'Strategies for Agricultural Self Sufficiency in the Eighties'.

BALASSA, Bela, 1981.
The Newly Industrializing Countries in the World Economy.
New York: Pergamon Press.

BROGAN, Brian, 1981.
'Import Replacement in Papua New Guinea.' INA Speech Series,

'Investment Policy and Business Localisation'. In CLUNIES ROSS
and LANGMORE (1973).

CLUNIES ROSS, Anthony, and John LANGMORE (eds), 1973.
University Press.

FRAZER, A.I., 1981.
'Issues in Papua New Guinea forest policy'.
INA Discussion Paper No. 7. Port Moresby: Institute of National
Affairs.

'National Objectives and the Choice of Industries.' in CLUNIES
ROSS and LANGMORE.

KILlick, Tony, 1978.
Development Economics in Action: A Study of Economic Policies in

'Planning in Small Dependent Economies - A Case Study of Papua
New Guinea.' Paper presented to Seminar on Planning In Small
Dependent Economies, IDS, Sussex. April 1976

LITTLE, Ian, Tibor SCITOVSKY and Maurice SCOTT, 1970.
Industry and Trade in Some Developing Countries
Paris: Organisation for Economic Co-operation and Development
and London: Oxford University Press.

'A Report on Development Strategies for Papua New Guinea'.
A report to the government of Papua New Guinea from the
University of East Anglia, dated February 1973. (Also known as
"The Faber Report").
CHARACTERISTICS OF SUCCESSFUL IMPORT SUBSTITUTION

It is suggested that an import substitution strategy is less likely to fail if activities are selected in such a way as to minimise the effects of the structural constraints.

A. On the DEMAND SIDE, apparent market size is affected by
   1) the large non-monetary sector,
   2) fragmentation of the market,
   3) poor infrastructure.

   What market there is will be maximised where
   1) goods are relatively homogeneous,
   2) indirect substitutes can be produced,
   3) export markets can be obtained.

B. On the SUPPLY SIDE, production costs will generally be minimised where:
   1) economies of scale are smallest,
   2) raw materials are locally available,
   3) transport costs are relatively unimportant,
   4) Governmental assistance is provided.

IDENTIFYING POTENTIAL IMPORT SUBSTITUTION ACTIVITIES

A. Promising sectors and activities will depend on the precise goals the government wants to pursue.
   Possible examples are, maximisation of
   1) foreign exchange saved,
   2) industrial expansion,
   3) potential for eventual export,
   4) local problem orientation.

   There may, however, be some dangers involved in trying to achieve some of these objectives, particularly where they lead to an inappropriate sectoral bias.

B. Whether the government identifies potential activities or it has to make a decision concerning an investment application, a consistent set of criteria must be available for project assessment.

   It is suggested that these be based on the various interests import substitution activities might affect, including:
   1) financial profitability,
   2) economic profitability,
   3) balance of payments criteria,
   4) Government revenue,
   5) consumer interests,
   6) other goals, such as: employment, distribution, linkages, etc.