FOOD IMPORTS AND MACROECONOMIC POLICY IN THE SOUTH PACIFIC

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INTRODUCTION

THE South Pacific region[1] includes nineteen political entities, thirteen of which are either independent or fully self-governing. Population totals a little less than 5 million, but rates of population growth are high at 2.5 per cent per annum. Substantial variation exists in GDP per capita, ranging from almost A$20,000 for phosphate-rich Nauru and A$4,000 for the American and some French territories, down to as little as A$200 for some of the smaller islands. High per capita figures result from mineral resources (e.g., Nauru, New Caledonia), military expenditure (e.g., Guam) and/or high levels of foreign aid.

Agriculture and fisheries are of major importance in almost all these nations. Where industrial development has occurred, it is largely mining and the processing of such products as timber, fish, sugar, coconut, and palm oil. Trade patterns are dominated by the extra-regional export of a limited range of primary production, including minerals, and the import of a wide range of manufactured goods, capital equipment, and foodstuffs. Taken as a whole, the region consistently records large deficits in commodity trade (some A$708 million in 1978) which is offset to a considerable degree by heavy inflow of foreign aid (A$764 million in 1978). This article examines one important aspect of these foreign trade deficits, the heavy dependency of South Pacific nations on imported foodstuffs.[2]

I. THE EXTENT OF FOOD IMPORTS

In 1978, a fairly representative year for the late 1970s, food imports averaged one-fifth of South Pacific countries' total imports (column 1, Table I). This compares, for example, with the Australian figure of less than 5 per cent for 1978/79. The issue of a high proportion of food in total imports is discussed later in this article, but high levels of food imports relative to export earnings

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[1] In this paper, the region is taken to be the area covered by the South Pacific Commission and monetary values are Australian dollars. This introduction has benefited from Sevele and Bollard [19].

[2] A considerable amount of research has been carried out on food distribution systems in the South Pacific [1] [2] [3] [13] [15] and to a lesser degree on the issue of adapting traditional agriculture to produce a marketable surplus [7].

TABLE I

FOOD-IMPORT DATA FOR SIXTEEN SOUTH PACIFIC COUNTRIES, 1978

	Food Imports/ Total Imports (%)	Food Imports/ Total Exports (%)	Trade Balance per Capita (A$)	Food Imports per Capita (A$)
American Samoa[a]	14.7	10.3	+867	298
Cook Islands	21.8	164.7	−777	195
Fiji	19.9	34.1	−225	99
French Polynesia	15.7	174.1	−2,267	382
Guam[a,b]	11.4	57.8	−2,054	271
Gilbert Islands (Kiribati)	27.2	17.9	+130	67
Nauru[a,c]	16.8	3.5	+5,877	272
New Caledonia	17.6	24.0	−497	322
Niue	28.5	275.7	−510	167
Papua New Guinea[d]	21.1	14.6	+28	26
Solomon Islands	16.3	16.4	−1	23
Tonga	27.9	130.9	−185	65
Trust Territory of the Pacific Islands[a]	33.9	68.1	−128	86
Tuvalu	36.4	n.d.	n.d.	77
New Hebrides (Vanuatu)	18.3[a]	18.3[a]	−119	46
Western Samoa	22.2	104.6	−235	66

Sources: Calculated from data presented in Sevele and Bollard [19] and South Pacific Commission [22] [23].

Notes: 1. Food-import data was not available for Tokelau or Wallis and Futuna. Pitcairn and Norfolk Islands were excluded as being extremely atypical. Nauruan export data are regarded as unreliable.

2. n.d.=no data available.

[a] Refers to 1977/78.

[b] Figures exclude U.S. military trade and personnel.

[c] Nauruan export data covers trade with Australia, New Zealand, and Hong Kong only; the phosphate export price used in Nauruan statistics is below market prices.

[d] Refers to 1975/76.

may place strains on the balance of payments.[3] Food imports as a proportion of total exports for 1978 are listed in column 2 of Table I. The median figure is 35 per cent, but five of the sixteen countries in 1978 had food imports which exceeded total exports.

Food imports per capita are listed in column 4 of Table I. Two distinct groups of countries emerge: those with high levels of food imports per capita comprise the French or United States territories—American Samoa, French Polynesia, Guam, and New Caledonia. Much lower levels are recorded by independent nations, although the Cook Islands and Niue have somewhat higher levels than the others in this second group. The level of food imports is, of course, closely

[3] Overseas borrowing and aid are alternative sources of foreign exchange but would not, in general, be used to finance food imports. Another source of foreign exchange, which may be used for food imports is remittances from migrants living abroad. For a number of countries in the region, remittances are a most important part of foreign exchange but data are generally not available. For a brief survey of estimates and calculations for the regions, see Connell [4, pp. 11–12].

related to the level of development reached by a country, as indicated by such measures as GDP per capita, government expenditure per capita (which is itself closely related to the inflow of foreign aid), and the proportion of population living in urban areas. Such measures of the level of development are inflated by the presence of a significant proportion of persons of European extraction, whether as settlers (as in New Caledonia where 38 per cent of the population in 1978 were classified as European), or as service personnel (as in Guam). An ordinary least squares regression found that variation in GDP per capita was able to explain 85 per cent of the variation in food imports per capita between the fifteen countries listed in Table I.

II. CAUSES OF HIGH FOOD IMPORTS

To the casual observer, it is puzzling why countries which are predominantly agricultural, without severe land shortages and often labeled as enjoying "subsistence affluence," should import large quantities of foodstuffs. This section examines the causes of inadequate food production.[4]

Several preliminary points need to be made. First, urban populations make up 21 per cent of total population, although it will be noted later that urban populations can and do grow foodstuffs. If these urban populations are to be fed from domestic sources, a surplus must be produced in rural areas and an effective transport and marketing system must operate to make the surplus available to urban consumers. It is necessary to examine, then, the extent to which surpluses are produced, and the effectiveness of transport and marketing facilities. Second, rural dwellers may also consume imported foods, and this matter is discussed later. Third, we should note some distinctions between types of producers and types of markets. Production may be small-scale village production, undertaken in conjunction with subsistence gardening and using similar cultivation methods; or it may be large scale and at least partly mechanized. The latter could be practiced by village groups on large blocks or could be undertaken, probably on a very large scale, by government or private firms. Marketing may occur through market sites, travelling vendors or may be sold directly to institutional consumers; limited quantities are marketed through retail stores. Normally, but not invariably, small-scale producers sell at market sites and large-scale producers sell to institutions. Finally, the foodstuffs traditionally produced in the South Pacific are root crops such as taro, yam, and sweet potato.

The basic question to be considered in this section is why rural producers are not producing a sufficient surplus. In some areas, e.g., Port Moresby, Papua New Guinea (PNG) and Apia, Western Samoa, agronomic variables (including seasonal variations) are unfavorable. In most places urban marketplaces have been set up and transportation facilities are available. What does appear to be lacking is adequate incentive. Villagers living in the proximity of urban areas normally have access to the earnings of employed relatives, many of whom

[4] This section has benefited from Harris [11].

commute on a daily basis. The extra amounts they can earn by market sales are not substantial. Even under generous assumptions,[5] a villager near Port Moresby might earn a gross income of approximately A$100 per annum by selling taro and sweet potato to the Food Marketing Corporation and approximately A$450 by selling at a market. From this figure transport and possibly other costs must be deducted to given an approximation of net income. Clearly these figures are low in comparison with a minimum urban wage level of approximately A$1,900. Competition between food-crop production for sale and export-crop production is not important in the Port Moresby region.

In the area of incentives, it is important to understand the nature of response from producers. In many early official reports on primary production in developing countries, a phenomenon of negative response to price (or wage) increases was noticed. This was analyzed by economists in terms of a target income mentality by producers, i.e., producers aimed to achieve some particular level of income and would cease cash earning activities once this was attained. Therefore, any increase in unit prices paid for their output or wages per unit of their labor time resulted in a reduction of output or labor time; less commonly, reduced prices resulted in increased output.

More recently, perhaps because it appears to smack of racism, this "perverse response" has been neglected. Yet it is vital to understand that simply increasing the unit price paid to producers will not continually result in existing producers supplying more output. The extent to which they respond to price incentives will be determined by their demand for cash (i.e., their target, if any) and their commitment to other activities including subsistence gardening, social activities, and leisure—assuming access to sufficient land and capital. It is quite possible that increased prices will not result in increased production by existing suppliers although an increase in total supply might still occur if *new producers* were attracted by the high prices.

A different aspect of the incentive issue is the return from alternative income earning activities, e.g., wage employment and export-crop production. Employment opportunities in South Pacific countries are limited but the production of a range of export crops is well established. In many cases, it makes sense for a villager to allocate time to the production of export crops rather than food crops for sale. A constraint on export cropping may occur in the form of land shortages; it can be demonstrated that for almost any export crop, less land is required to grow the food requirements of a village household than to grow export crops and use the proceeds to buy food (e.g., Harris [10]). Access to land suitable for commercial production may also be lacking because the community may be unwilling to release it for such purposes.

Imported foodstuffs are generally less perishable, easier to transport, and more widely purchasable. To their convenience may be added their cheapness in

[5] The assumptions are 0.06 ha under cultivation of food crops for sale, producing 1 ton each of yam and sweet potato per annum, selling at 10.5 cents per kilogram to the Food Marketing Corporation, or at the market prices as at June 1977, viz., 26 cents per kilogram for sweet potato and 64 cents per kilogram for taro.

TABLE II

MEAN PRICES OF SELECTED FOODSTUFFS, 1979

	Mean[a] (A$ per Kg.)	Standard Deviation
Traditional foodstuffs:		
Sweet potatoes (8)	0.35	0.19
Taro (11)	0.43	0.58
Banana (11)	0.40	0.34
Imported foodstuffs:		
Rice[b] (13)	0.72	0.42
Canned fish, mackerel (11)	1.27	0.28

Source: Calculated from data presented in South Pacific Commission [22].
Note: Figures in parentheses indicate number of countries/localities covered.
[a] Weighting according to quantities sold in each country/locality was not possible, due to lack of data.
[b] Includes two high values from Rarotonga, Cook Islands (1.43) and Alofi, Niue (1.98). Exclusion of these lowers the mean to 0.57 and the standard deviation to 0.11. These lower figures are used in the calculations in Table III.

TABLE III

RELATIVE COST OF CALORIES AND PROTEIN OF SELECTED FOODSTUFFS, 1979

	Cost of 100 Calories	Cost of 1 Gram Protein
Traditional foodstuffs:		
Sweet potatoes	4.09	3.11
Taro	5.07	2.87
Banana	4.93	5.71
Imported foodstuffs:		
Rice	1.62	0.81
Canned fish, mackerel	7.66	0.67

Sources: Calculated from price data presented in Table II, together with food values from Platt [18].
Note: The proportion of traditional foodstuffs normally consumed (i.e., allowing for wastage) are estimated to be 75 per cent for sweet potatoes and taro and 70 per cent for banana.

relation to traditional foodstuffs. This is illustrated for 1979 in Tables II and III. Table II presents mean prices for three major traditional foodstuffs (sweet potato, taro, and banana) and two major imported foods, rice and canned fish. Table II indicates that in terms of price per kilogram, traditional foodstuffs are cheaper, and that their variation between countries is very high. However, these foodstuffs vary considerably in terms of calorific and protein content, and a more significant indicator is the relative cost of calories and protein; these have been calculated for 1979 and are presented in Table III. It is clear from this table that rice is much cheaper than traditional foodstuffs in terms of cost of calories, and both rice and canned fish are substantially cheaper sources of protein.

A logical question at this point is whether the region can produce its own

rice. In general, attempts to grow rice in the region have not been successful, largely because of the crop's exacting climatic and labor requirements. At present, Fiji produces about 17,000 tons of padi equivalent per annum (over 40 per cent of its requirements) from a number of smallholder schemes; given the disciplined approach required for double cropping, it has proved difficult to raise output above this level. On the other hand, the Solomons produced about 10,200 tons (about two-thirds of requirements) in 1979 from a large-scale, mechanized joint venture project in Guadalcanal, and projections put the 1983 output at 25,000 tons. PNG has had a history of large-scale rice production since 1906, but average annual production in the late 1970s was only 1,500 tons, about 2 per cent of requirements.[6] Most of the region's rice imports come from Australia, an efficient and low cost producer. Similarly, the price at which canned fish is obtained from Japan and Taiwan makes it an unlikely import replacement prospect, although the production and marketing of local fresh or frozen fish has been encouraged in a number of countries in the region.

Thus far we have assumed, by implication, that it is urban areas which are responsible for the import of food. This is generally true but it needs to be recognized that rural dwellers also eat imported foods. An estimate for the PNG highlands for 1978 puts the annual per capita consumption of rice at 20 kilograms compared with an urban figure of about 60 kilograms; the rural level has been reached in association with high export-crop prices [12].

It is also important to examine price movements of imported and traditional foodstuffs, although this is hindered by lack of data. In PNG at least, the prices of domestically-produced foodstuffs rose much more sharply in the first half of the 1970s than did imported food prices. This may be attributed, first, to rapid increases in urban minimum wages following self-government in 1972 and, second, to increased consumption of imported food by the sellers, who raised their prices when imported food prices rose. In a thorough examination of the PNG economy between 1972 and 1976, Lam [14] found that the retail price of domestically-produced foodstuffs in PNG rose by 115 per cent between 1972 and 1976, compared with a 63 per cent increase in major food import prices and a 51 per cent increase in those of minor food imports. However, because of their relatively greater importance in the weights for the consumer price index, imported-food price increases caused over 50 per cent of the total increase in the consumer price index over the period compared with 12 per cent due to local food price increases.

The experience in the second half of the 1970s was different. For the four years, 1976–79, inclusive, food prices in the region's urban areas increased by 27.2 per cent (a little over 6 per cent per annum) which was almost identical with the increase in the "all groups" retail price index (26.7 per cent).[7] Food

[6] For a discussion of the history of rice production in PNG, see Dick and McKillop [6, pp. 20–22].

[7] These data were derived from South Pacific Commission [23] and refer to price increases in the capital cities of fourteen countries; in the case of Fiji and PNG, more urban areas were included. The figures are weighted average for the region, using weights in approximate proportion to the population of the towns covered.

makes up between 40 and 50 per cent of the weights used in constructing these indices.

Data allowing comparison between price changes of imported and locally-produced foodstuffs are not readily available, but some information has been derived for PNG, Western Samoa, and the Solomon Islands. For four PNG towns between late 1976 and late 1980, the price of three major local staples (sweet potato, taro, and eating bananas) increased on average by about 40 per cent; the prices of five important imported staples increased by 30 per cent.[8] Price data on six common locally-produced foods in Apia, Western Samoa revealed a median price increase of 79 per cent over the three-year period, 1978–80; a collection of five common imported foods recorded a median increase of 43 per cent over the same period.[9]

Some fragmented data from the Solomon Islands indicates that for the capital, Honiara, between late 1977 and the end of 1979, the prices of common imported foods rose by about 20 per cent, compared with a little more than 15 per cent for local staples. Data from period mid-1975 to mid-1979 suggests a similar rate of increase for imported and locally-produced foods.[10]

These data, limited as they are, suggest that food prices did not increase more rapidly than retail prices in general during the latter half of the 1970s, but that imported-food prices increased at a lower or similar rate to the prices of local foodstuffs. Despite this, planners and politicians regard local production of foodstuffs an obvious answer when looking for ways of improving the balance of payments and curbing inflation rates.

III. REASONS FOR CONCERN OVER FOOD IMPORTS

The following statement may be taken as fairly typical of official views on food imports to the region:

> Although food imports may be essential for some of the smaller countries of the Region, the majority have the capacity to be self-sufficient in most food items. Individual freedom of choice to buy imports may well be a desirable aim but, when food imports are often nutritionally inferior to domestically produced food and when they divert scarce foreign exchange from more productive uses, individual countries may wish to ask whether their import at these levels is desirable [24, p. 12].

A number of reasons for restricting food imports are put forward, explicitly or implicitly in this statement: it goes against the aim of self-reliance (a national

[8] Derived from Papua New Guinea, Bureau of Statistics, *Consumer Price Indexes,* December 1976 and September 1980. Local-staple-price changes varied considerably by staple and by town, whereas prices of imported foods changed more uniformly between towns, and to a lesser extent, between commodities. The general conclusion that imported foodstuffs have risen somewhat less in price than local foodstuffs is supported for an earlier period of the 1970s in Lam [14].

[9] See, Government of Western Samoa [9].

[10] These data were derived from the *1980 Statistical Year Book* [21] and the *Solomon Islands National Development Plan, 1980–1984* [20].

objective in many South Pacific countries) and has the potential to be politically embarrassing; it uses foreign exchange which might be used to buy imports (e.g., capital equipment) to promote development; there may be negative nutritional implications because some commonly-consumed imported foods are low in nutritional value; the financing of imported-food purchases by growing export crops may introduce an element of inflexibility into village production systems; and food imports may reduce the opportunities for local involvement in food production for sale.

Before discussing these, it is important to distinguish between the role of the economist and the political decision-maker. The economist can point out the strengths and weaknesses of the above arguments in terms of economic theory, i.e., with the aim of maximizing the achievement of national objectives. When conflicts arise between conflicting objectives, the value judgments of politicians will hold sway. Nevertheless, it is important that the economic consequences of decisions to restrict food imports, for example, are fully understood. We now turn to examine the arguments for limiting food imports outlined in the preceding paragraph.

There are a number of reasons for wanting to increase self-sufficiency in food: there may be doubts about the future availability of imported-food supplies, the foreign exchange costs of imported foods may be regarded as excessive, price increases may be expected, price fluctuation may occur and political independence may be thought to be jeopardized. In addition to these external factors, rural development, including employment generation, is an important objective in most countries and a common means of promoting this aim is the production of a food surplus for sale. There is probably no great concern about the availability of supplies, price increases, or price fluctuations of food imports in the South Pacific. The basic food imports have in fact risen less rapidly in price than imports as a whole, they derive from politically friendly and stable sources, and they are not prone to price fluctuations. The fundamental motives appear to be self-reliance for its own sake and the desire to conserve foreign exchange. As regards these, it is necessary to be aware of the costs involved as well as the benefits. Restrictions on imports or protection of domestic industries mean working against comparative advantage, and result in higher prices to consumers. This cost needs to be compared with the benefits of increased employment and such noneconomic advantages as national pride and independence before attempts to promote self-reliance are made.

The second point against food imports is that it uses foreign exchange which might be used to purchase more productive imports. This is, however, far from established. The consequences of any food-import restrictions or protection of local food production for export industries and for non-food-import replacement industries need to be considered. It is quite possible that restrictions on food imports and protection of local food production might result in a net reduction in foreign exchange. For example, inputs of fertilizer and machinery may be necessary to support a program to produce more food domestically and these will probably have to be imported. Again export industries may incur higher

costs from the protection of local food production, and this may harm their competitiveness on world markets.

The third criticism concerns the possibility of declining nutritional levels as a result of eating imported foods, the effect of which may be particularly important in urban and peri-urban areas. Two points can be made here: first, important imported foodstuffs such as rice and canned fish are high in calorie and protein and, as we have already seen, are generally cheaper in nutritional terms than domestically-produced staples. Second, those imported foods with low nutritional value (e.g., soft drinks and cheese snacks) may be discrimination against (e.g., via sales taxes) and by educating people concerning food values.

The fourth criticism concerns the possible inflexibility of concentration on export crops. If growers of export crops depend heavily on imported foods, they may be left in a difficult position during times of low export prices. Growers may be unwilling to replace export crops (which have a long gestation period) with food crops and, in high land-pressure areas, this may result in inadequate land on which to produce subsistence requirements. The implication of this is that governments should encourage village producers to grow or continue to grow most of their own food. However, it could persuasively argued that the negative effects of short-term fluctuations in export prices are best handled by price stabilization schemes. The intercropping of food and perennial crops may be an alternative solution.

Finally, food imports may reduce the opportunity for local involvement in food production for sale. This may not be undesirable, however, since it may encourage the investment of resources in activities where private and national returns might be higher, such as the production of export crops. In addition, there is the possibility of local involvement in the distribution of food imports.

In summary, the economic basis for restricting food imports seems to be weak: although this is not to deny the reality of the concern expressed to reduce food imports. It is important to note that the major economic pointer to the sense of producing export crops and importing food, the principle of comparative advantage, is a *dynamic* principle, i.e., its operation depends on a large range of assumptions about relative costs, etc. To the extent that these assumptions change, so may the recommendations of the principle of comparative advantage. In the next section we investigate the range of policies available to limit food imports and consider the economic implications of some of these in detail.

IV. CURRENT POLICIES

In an attempt to secure data on current policies relating to reducing imported foodstuffs, a simple questionnaire was sent to the relevant government departments in each of the sixteen countries listed in Table I. Eight replies were received and these were classified into three categories of country—small (less than 100,000 population) non-self-governing, small self-governing, large self-governing. The potential policies were classified into two major types—policies which could be aimed at limiting food imports and those which could be used

to raise local food production. The results are presented in Table IV, and we now discuss the more important of these policies.

A. *Exchange-rate Changes*

Exchange-rate adjustments have been made during the 1970s by those countries with control over their own currencies. Western Samoa devalued the tala by 15 per cent against the currency of its major trading partner (New Zealand) in 1979;[11] the managed float of the Fijian dollar has resulted, since 1976, in appreciations against the United States, Australian, and New Zealand dollars, and depreciations against the pound sterling and the Japanese yen. In contrast, both the Solomon Islands and PNG have revalued their currencies. PNG has made six such changes between mid-1976 and the end of 1979, which together have involved an appreciation of the kina against the Australian dollar of 31 per cent, and to a lesser extent against other currencies. These occurred in a period of a healthy balance of payments and favorable export prices with the stated aim of keeping down inflation both directly and indirectly, since minimum wages are linked to the cost of living and imported items make up almost half of the consumer price index. Although there has been some dispute about the effectiveness of this policy in checking inflation [5] [26], the fact remains that PNG has had an impressively low inflation rate relative to other nations in the region.[12]

The maintenance of a high exchange rate will encourage imports by lowering their price in the domestic currency. During the latter half of the 1970s, the control of inflation was generally regarded as more important than the balance of payments. Western Samoa is the only country about which data are available which has used its exchange rate to reduce imports, and this follows from a recognition of the balance of payments as the major development constraint [9]. A factor which may reduce the usefulness of devaluation to reduce food imports is the "fairly low" price elasticity of demand said to exist for imported foodstuffs [23].

B. *Quantitative Import Controls*

A number of countries have imposed quantitative controls on the import of food items which can be produced domestically. As an illustration of the difficulties which may be encountered, we may examine the PNG government's import quotas on rice in the late 1970s.

Following rapid increases in rice imports (from 55,000 tons in 1975/76 to 82,000 tons in 1978/79) as a result of high earnings from export crops, the government imposed an import quota of 75,500 tons from 1979/80, with the aim of stabilizing imports at about 65,000 tons during the 1980s. The quota

[11] Pressure on the Western Samoan balance of payments, arising from the rapid increase in imports (particularly capital goods) led to a number of government measures. These included a devaluation in June 1979, intensification of exchange controls, quantitative controls on some imports, a deferral of some development projects, and credit restraints.

[12] The value of both Solomon Islands and PNG currencies is now effectively determined by the value of a basket of internationally traded currencies, weighted in accordance with their importance in the country's trade.

TABLE IV

POTENTIAL POLICIES TO LIMIT FOOD IMPORTS

	Small, Non-self-governing		Small, Self-governing		Large, Self-governing			
	American Samoa	Tokelau	Niue	Tuvalu	Fiji	PNG	Solomon Islands	Western Samoa
Measures to reduce food imports:								
Manipulation of exchange rates	No (U.S. $)	No (N.Z. $)	No (N.Z. $)	No (A$)	Yes	Yes	Yes	Yes
Allocation of foreign exchange	No	No	No	No	No	No	No	Yes
Quantitative import controls	Yes	No	No	No	Yes	Yes	No	Yes
Tariffs, import taxation	No	No	Yes	Yes	Yes	Yes	Yes	No
Measures to increase domestic food production:								
Agricultural extension	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Government production	No	No	Yes	No	Yes	No	Yes	Yes
Encouragement of urban gardening	No	n.d.	Yes	Yes	Yes	Yes	n.d.	n.d.
Encouragement of foreign private investment	No	No	Yes	No	Yes	Yes	Yes	No
Subsidizing inputs	Yes	Yes	Yes	Yes	Yes	No	No	Yes
Provision of loan finance	Yes	n.d.	n.d.	n.d.	Yes	Yes	Yes	Yes
Organizing distribution of inputs, including livestock	No	No	Yes	Yes	Yes	Yes	Yes	Yes

Sources: Derived from answers to questionnaires sent to sixteen countries; and International Monetary Fund, *Annual Report on Exchange Restrictions* (Washington, D.C.), 1975–80 editions.

Note: n.d.=no data available.

was applied differentially, according to different regions' abilities to produce food. As a result of the quota, shortage of rice resulted in a number of urban areas. Switching to other imports and some unrest lead to a lift in the quota to 76,000 tons. This experience pointed to a reluctance by consumers to replace rice with locally-produced vegetables, because of price and/or preference. An important failing of the quota policy was an absence of any effort to encourage increased local food supplies to compensate for the reduced supplies of rice.

C. *Tariffs, Import Duties*

Import duties are an important source of revenue for many of the region's governments. For example, in the late 1970s, Western Samoa received about half its internally-raised revenue from import duties; for Fiji, it was about one-third and for PNG about one-sixth. Another objective is to encourage domestic production: imported fish attract a 60 per cent duty in Gilbert Islands and 40 per cent in Tuvalu, whereas rice attracts a duty of only 3 cents and 2 cents per kilogram respectively. In the Solomons, fish, meat, fresh vegetables, and soap are protected by tariffs with a government revenue objective and to encourage local production.

D. *Measures to Increase Food Production*

As regards measures used in the region to increase domestic food production, seven main types are identified in Table IV, of which the most widely used are agricultural extension, provision of loan finance (e.g., for purchase of materials and equipment), and directly organizing the distribution of inputs.

Direct involvement in production by governments has been attempted in a variety of ways in the past, but is now fairly limited. Perhaps the most interesting current example is the joint-venture rice production in the Solomon Islands; the Solomons has other major joint-venture projects producing palm oil and cattle/cocoa/coconuts. In PNG, the guidelines on foreign investment have been relaxed so as to encourage investment in food production.

There has been a general lack of enthusiasm for subsidizing of inputs, which is perhaps influenced by the climate of de-regulation in many developed countries. Current policy in the Solomons emphasizes the importance of requiring farmers to make decisions with reference to its true commercial context:

> If smallholders wish to undertake commercial agricultural activities then they should do so without the provision of subsidies as a form of incentive. If farmers' decisions to commence or expand an agricultural activity are based on the existence of subsidies then there is a danger that their continued involvement in these activities will depend upon the continued provision of subsidies, which is a drain on the country's limited financial assistance...the assistance should be in the form of loan funds which ensure that the farmer still sees the activity in its true commercial context. [20, Vol. 1, p. 45]

V. MACROECONOMIC POLICY CONSIDERATIONS

A general comment needs to be made concerning measures to restrict imports

or increase domestic food production. If government-controlled resources of any kind are put into the production of food crops, then these resources are either withdrawn from, or are not available for, other uses. For our purposes other uses are assumed to be export crops. The question needs to be asked "what impact will this policy have on the balance of payments, inflation rates, employment, or other national objectives?"

As an illustration, consider a policy of tariffs or import taxation. The immediate impact on the balance of payments will be favorable, as people switch away from imports which are now dearer than the domestically produced alternatives. Consumers will face higher prices, their cost of living will increase and there will be pressure on wages to rise. If wages are not allowed to rise, consumers (particularly urban consumers) face a real reduction in living standards. Other industries will face higher costs if wages do increase, or if they use the output of protected industries as inputs.[13] To the extent that these are import-replacement or export industries, the balance of payments will worsen: import-replacement industries will find it more difficult to compete against imports and export industries will find it harder to sell on world markets. It may also be true that increased domestic food production requires an increase in the use of fertilizers, pesticides, and capital equipment which needs to be imported. As a general rule then, policies which aim to reduce food imports by interfering with comparative advantage will result in increased domestic inflation and quite possibly a worsened balance-of-payments position. These need to be compared with gains in rural development (e.g., increased cash earning opportunities to village people) and the noneconomic advantage of being more self-reliant.

A similar argument can be developed with respect to policies to increase domestic production. If the government puts more resources into agricultural extension work in food production, then the consequence will be an increase in the productivity of labor and land involved in food production. This gain should be compared with the size of the potential gain lost by not putting the same resources into extension in export crop production. In other words, before allocations of extension effort are made, there needs to be an estimate of the marginal rates of return to extension to food and export cropping. Only then can economically rational allocations of extension effort be made between the two activities.

Two important variables to be considered by policy makers are the propensity to import (defined as the ratio of imports to total value of goods and services purchased, i.e., excluding subsistence production) and the importance of government expenditure to GDP. Calculation of the propensity to import is limited to countries which estimate the subsistence component of their GDP,[14] and the

[13] Some recent studies, e.g., Garcia [8] who studied the experience of Colombia between 1963 and 1978, have estimated that as much as 90 per cent of a tariff on imports falls on exporters, i.e., a 10 per cent tariff on imports will cause exporters to spend, ceteris paribus, 9 per cent more on domestic inputs.

[14] The share of subsistence production in GDP for Fiji, PNG, and the Solomon Islands is estimated at 6, 15, and 44 per cent respectively; these are probably underestimates, given the difficulty of measuring value of subsistence activities.

figures for Fiji, PNG, and the Solomon Islands respectively were 0.71 (1980), 0.60 (1980), and 0.67 (1979). In other words, between 60 and 70 per cent of total expenditure is spent on imported goods and services. The ratio of government expenditure to GDP for sixteen countries in the region during the late 1970s was a little over 40 per cent,[15] and in addition a large part of private industry depends, directly or indirectly, on public sector demand. Between 40 and 50 per cent of government expenditure in the region is typically expended on wages. Given this background we may now discuss the various macroeconomic objectives and the instruments which may be used to achieve them.[16]

According to the classic, *On the Theory of Economic Policy* by Tinbergen [25], an optimal policy mix results from pairing with each target the instrument which has the greatest effect on that target. However, given the break-up of both self-reliance and price stability into two distinct targets, it has not been possible to follow a strict one-to-one pairing. Tinbergen recognizes that conflicts are sometimes inherent in targets (e.g., between growth and the balance-of-payments objectives) and that political priorities are therefore necessary. Negative-side effects from the use of an instrument to achieve a target are to be tackled by the use of other instruments. The following table lists, in highly simplified fashion, the major targets and the instruments most commonly used to satisfy them.

A number of comments need to made about the table: first, it represents a *typical* South Pacific country—small, open, with balance of payments as the major constraint,[17] and with control over its exchange rate. It does not portray the target/instrument lineup in the Solomons and PNG, which have price stability as a more important objective; they assign exchange-rate revaluations as the appropriate instrument for price stability and government expenditure constraint is assigned to the balance of payments. Second, several categories of self-reliance and price stability are recognized. Third, only the main instruments are listed: for example, price stability (internal) would also be promoted by export-income stabilization schemes and wages restraint but these are of less importance than government expenditure restraint; fiscal policy can be directed to reduce inequalities between regions and groups, but the major inequality in the region exists between rural and urban workers; monetary policy is also used to promote a more favorable balance of payments and price stability but is fairly weak in comparison to fiscal policy. Fourth, economic growth is categorized separately; few lists of national objectives explicitly mention growth, but most of the other objectives will be easier to meet, in theory, the more rapid is economic growth. Fifth, there is considerable inter-dependence between targets and instruments: for example, inflation will lead to pressure for wage increases, which reduce profitability and discourage investment, thereby lowering growth. Another important example is the link between inflation and the balance of payments: an inflation rate which is lower than that of its competitors will have a favor-

[15] Calculated from data contained in South Pacific Commission [23].

[16] This section has benefited from work by Palmer [16].

[17] That is, the maintenance of adequate reserves during the course of the price-commodity cycle.

TABLE V

POLICY INSTRUMENTS AND TARGETS

Instruments	Targets
Devaluation of exchange rate	Balance of payments (includes self-reliance in terms of production)
Government expenditure restraint	Price stability (protection from imported inflation)
Government expenditure restraint	Price stability (protection from internally-generated excess demand)
Government expenditure restraint	Self-reliance (government revenue)
Wages restraint	Income distribution
Fiscal policy	Economic growth

able impact on the balance of payments. Finally, Table V indicates potential conflicts between policy objectives. If the exchange rate is used to improve the balance of payments (by devaluation or depreciation) then, depending on the price elasticity of demand for imports,[18] price stability may be threatened. Government expenditure to promote economic growth is likely to conflict with price stability (internal) and self-reliance as regards government revenue.

Commencing with the balance of payments, we saw previously that food imports as a proportion of exports averaged 35 per cent and that, for some countries, imports of food alone exceeded total exports. Clearly then, high levels of food imports can place a considerable strain on the balance of payments. All the sixteen countries in Table I had a negative commodity trade balance (column 3), with the median trade balance per capita being A$185. There is also a close link between the size of a country's trade balance per capita and its level of food imports per capita, i.e., high levels of food imports per capita are generally associated with high negative trade balance per capita, and low levels of food imports with more favorable trade balances.

Devaluation of the exchange rate is the instrument assigned to the correction of an unfavorable balance-of-payments situation. The disadvantage of a devaluation is its likely inflationary impact, given low price elasticities of demand for imports, which necessitates a political ordering of priorities between inflation and the balance of payments. Where price stability is the first objective, revaluation of the exchange rate is the major instrument, supplemented by wages restraint and constraint on government expenditure. Eventually, however, fundamental balance-of-payments disequilibria need to be corrected, since limits exist to support via aid and overseas borrowing.

Government expenditure constraint is assigned to the price-stability target, given the importance of government expenditure in GDP and the high propensity to import. Government expenditure levels, obviously, influence the degree of self-reliance as regards government revenues.

Revaluations do not have a neutral impact as regards income distribution. Urban wage earners who purchase the cheaper imports gain whereas rural producers receive lower prices, in domestic currency, for their production. Solomon

[18] The price elasticity of demand for imported food is reckoned to be low[23], and this is probably true for most imports.

Islands policy statements refer to the importance of linking urban wages to an index of rural wages rather than to an urban retail price index. Emphasis is placed on increasing rural wages by improved productivity and investment in transport and marketing. Perhaps referring to the experience of other nations in the region which have had urban real wage explosions and the linkage of urban money wages to urban retail prices, one national plan notes that "the dominant danger is that the towns may exploit the rural areas through wage and price movement that unfairly distort the terms of trade between urban and rural areas" [20, Vol. 1, p. 9].

The major implications of this consideration of macroeconomic policy for food imports is that, to the extent that internal price stability is considered a more fundamental target than the balance of payments, the encouragement of food imports may be a desirable policy. Whilst the immediate impact of food imports on the balance of payments is negative, the lower rates of inflation resulting from the purchase of more imported foods may place the economy in a better position as regards exports and import replacement in other areas of production.

VI. CONCLUSIONS

This article has pointed out that the economic basis of concern over the extent of food imports is not strong, and that the largely noneconomic benefits of reducing food imports should be weighed against its economic costs.

It has also indicated some important conflicts inherent in the measures which might be used to limit food imports, viz., the conflict between self-reliance as regards imports and strengthening the balance of payments, that between curbing inflation and strengthening the balance of payments and that between the balance of payments and self-reliance as regards government revenue. Further, it has indicated that efforts to increase domestic food production have an opportunity cost (e.g., in terms of forgone export-crop production) which should be taken into account.

Finally, the macroeconomic policy framework of small open economies was discussed: to the extent that price stability is considered more important than the balance of payments as a target, high food imports are a virtue rather than a vice.

REFERENCES

1. BATHGATE, M. A. *The Structure of Rural Supply to the Honiara Market in the Solomon Islands,* Development Studies Centre Occasional Paper No. 11 (Canberra: Australian National University, 1978).
2. BAXTER, M. W. P. *Food in Fiji: The Produce and Processed Foods Distribution Systems,* Development Studies Centre Monograph No. 22 (Canberra: Australian National University, 1980).
3. CHANDRA, R., ed. "Food Distribution Systems in the South Pacific," report on a conference held by Development Studies Centre, Australian National University in Suva on December 13–17, 1978.
4. CONNELL, J. *Remittances and Rural Development: Migration Dependency and Inequality*

in the South Pacific, Development Studies Centre Occasional Paper No. 22 (Canberra: Australian National University, 1980).
5. DAHANAYAKE, P. A. S. "Hard Currency Strategy and Its Implications for a Developing Country: The Case of Papua New Guinea," paper presented to the conference on Post-independence Economic Development held by Institute of Applied Social and Economic Research, Papua New Guinea on October 27–29, 1981.
6. DICK, G., and MCKILLOP, R. *A Brief History of Agricultural Extension and Education in Papua New Guinea,* Papua New Guinea, Department of Primary Industry, Extension Bulletin No. 10 (1976).
7. FISK, E. K., ed. *The Adaptation of Traditional Agriculture: Socioeconomic Problems of Urbanization,* Development Studies Centre Monograph No. 11 (Canberra: Australian National University, 1978).
8. GARCIA, J. G. *The Effects of Exchange Rates and Commercial Policy on Agricultural Incentives in Colombia: 1953–1978,* International Food Policy Research Institute, Research Report No. 24 (Washington, D.C., 1981).
9. Government of Western Samoa, Economic Development Department. *Western Samoa's Fourth Five Year Development Plan, 1980–1984,* 2 Vols. (Apia, 1979).
10. HARRIS, G. T. "Forces of Change in Subsistence Agriculture, Papua New Guinea," *Yagl-Ambu,* Vol. 5, No. 3 (September 1978).
11. ———. *Replacing Imported Food Supplies to Port Moresby, Papua New Guinea,* Development Studies Centre Occasional Paper No. 17 (Canberra: Australian National University, 1980).
12. ———. "Estimates of Rural Village Consumption of Imported Foodstuffs," *Yagl-Ambu,* Vol. 7, No. 2 (June 1980).
13. HAU'OFA, E. *Corned Beef and Tapioca: A Report on the Food Distribution Systems in Tonga,* Development Studies Centre Monograph No. 19 (Canberra: Australian National University, 1979).
14. LAM, N.V. *Imported inflation in Papua New Guinea, 1972–1976,* Institute of Applied Social and Economic Research, Papua New Guinea, Discussion Paper No. 13 (Boroko, 1977).
15. MCGEE, T. G.; WARD, R. G.; and DRAKAKIS-SMITH, D. W. *Food Distribution in the New Hebrides,* Development Studies Centre Monograph No. 25 (Canberra: Australian National University, 1980).
16. PALMER, K. "Targets and Instruments of Economic Policy in Papua New Guinea," *Yagl-Ambu,* Vol. 6, No. 2 (June 1979).
17. Papua New Guinea, National Planning Office. *The National Public Expenditure Plan, 1980–1983* (Port Moresby, 1979).
18. PLATT, B. S. *Tables of Representative Foods Commonly Used in Tropical Countries* (London: Her Majesty's Stationary Office, 1962).
19. SEVELE, F. V., and BOLLARD, A. *South Pacific Economies: Statistical Summary,* South Pacific Commission, Occasional Paper No. 15 (Noumea, 1979).
20. Solomon Islands, Central Planning Office. *Solomon Islands National Development Plan, 1980–1984,* 3 Vols. (Honiara, 1980).
21. Solomon Islands, Ministry of Finance, Statistics Office. *1980 Statistical Year Book* (Honiara, 1980).
22. South Pacific Commission. *Retail Price Indexes, 1979,* Statistical Bulletin of the South Pacific No. 16 (Noumea, 1980).
23. ———. *Overseas Trade, 1978,* Statistical Bulletin of the South Pacific No. 17 (Noumea, 1980).
24. ———. *South Pacific Economies, 1978: Statistical Summary* (Noumea, 1980).
25. TINBERGEN, J. *On the Theory of Economic Policy* (Amsterdam: North-Holland Publishing Co., 1952).
26. YARI, M. "Effects of December 1979 Revaluation on Imported Prices," *Quarterly Economic Bulletin* (Bank of Papua New Guinea), Vol. 5, No. 4 (December 1980).