PACIFIC POLICY PAPERS NO 2

Selected Issues in Pacific Island Development

R V Cole and
T G Parry editors

National Centre for Development Studies
The Australian National University

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ERRATUM

The sentence beginning on the 4th line of para. 4 on page 12 should read:

> The rapidly growing East Asian countries have contained inflation better for the most part, but even such countries as the Republic of Korea have had bouts of double-digit inflation.

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Papers from the Islands/Australia Project

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National Centre for Development Studies
The Australian National University
Canberra, Australia
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Preface

The National Centre for Development Studies (NCDS) is located in the Research School of Pacific Studies at The Australian National University. It was established to provide a focus within Australia for the study of development issues with particular reference to countries in our geographic area.

In response to the recommendation by the committee which reviewed the Australian overseas aid program that attention should be given to policy-oriented analysis in development, the Centre established the Islands/Australia Project to improve the understanding of the economies of Papua New Guinea, the Southwest Pacific, and the Indian Ocean and to contribute to the formulation of development assistance policies in these countries. The Project is also designed to stimulate discussion of issues concerning Australia's near neighbours, and to create an awareness of their problems and development objectives. It is an integral part of the Centre's wider research program.

With financial support from the Australian Development Assistance Bureau, a series of papers was commissioned from Australian academics aimed at highlighting issues of importance affecting the economies of five major island countries in the South Pacific: Fiji, Tonga, Vanuatu, Western Samoa and Solomon Islands. The papers are presented in the Centre's Islands/Australia Working Papers series. They have been discussed at a number of specially convened workshops.

From these workshops a number of issues emerged which were of common interest to the region, and it is to these that this monograph addresses itself. The monograph is the second in the Centre's series 'Pacific Policy Papers', the first of which was The Economy of Papua New Guinea: an independent review by Goodman, Lepani and Morawetz. The Centre anticipates the publication of further Pacific Policy Papers which will focus on important regional issues such as agriculture and human resource development.

The Centre takes this opportunity of expressing its thanks to all those who have to date participated in the Islands/Australia Project, not only those writing on issues in the South Pacific, but also researchers working on the economies of the Indian Ocean and Papua New Guinea. The Centre also thanks the Australian Development Assistance Bureau.

Finally, the editors extend their thanks to the Centre's Executive Director (Professor Helen Hughes) whose encouragement and enthusiasm for the Project has ensured that it is both timely and rigorously pursued, and, of course, to the Centre's staff who work hard to produce the results.

Canberra
April 1986

R.V.C.
T.G.P.

Key to symbols used in tables

..	not available
n.a.	is not applicable
-	zero
A$	Australian dollar
US$	United States dollar
p	preliminary estimate subject to revision

Chapter 1

Key issues in Pacific island development

R.V. Cole and T.G. Parry

Change in the traditional societies of the South Pacific has been accelerating with growing exposure to the outside world, and it has become increasingly important to improve economic performance so as to meet the aspirations of the people. As expectations of rising standards of living spread globally, the islands are becoming more and more exposed to worldwide trends, bringing an end to the stability of the 'subsistence affluence' model of the Pacific. But economic performance in several of the Pacific countries, and in the region as a whole, has been lagging behind that of East Asian and other Pacific developing countries, and, in some cases, even behind all developing economies.

The recent decline in export receipts for key commodities, notably sugar and copra, and a slowdown in the rate of growth of tourism in Fiji and Vanuatu, are causes for concern, but these trends cannot be blamed for the slow overall growth of the South Pacific nations from the early 1970s. The economic performance of each of the Pacific countries needs careful analysis if appropriate remedies are to be identified. Countries as small as the Pacific nations must trade to develop. Yet for some of the Pacific islands, the solutions to economic difficulties have been seen to lie in increasing flows of aid and remittances rather than in rising overseas earnings from agricultural and other exports and tourism. In fact, the tendency of aid and remittance flows to overvalue exchange rates and distort wages ('Dutch disease' effect) put these at the very heart of the economic problems of some of the islands. The failure of South Pacific countries and their bilateral and multilateral aid donors to come to grips with the underlying economic problems of the Pacific islands could lead to social and political instability.

The key economic issues are related to agricultural production and exports which continue to be the main source of livelihood for the majority of the people in the islands. Unstable world commodity prices have made for macro-economic management problems. The recent decline in sugar prices has been particularly troublesome for Fiji. But most of the South Pacific nations have handled commodity price induced instability well. However, poor supply responses, together with indifferent quality of produce, have inhibited the growth of several countries' earnings for exports in real terms. Marketing of goods and

Table 1.1 GNP, GNP per capita and GNP per capita growth, Pacific island states, 1973-82

Country	Total GNP 1983 (US$ million)	GNP per capita 1983 (US$)	GNP per capita growth per annum 1973-82 (%)
Cook Islands	20[a]	1360[a]	..
Fiji	1199	1790[b]	1.2
Kiribati	30[b]	460[b]	-13.1
Nauru	70[a]	9091[a]	..
Niue	3[a]	1080[a]	..
Papua New Guinea	2510[b]	790[b]	-0.7
Solomon Islands	160[b]	640[b]	2.0
Tonga	80[b]	780[b]	3.9
Tuvalu	4[a]	570[a]	..
Vanuatu	60[a]	531[a]	..
Western Samoa	119[a]	770[a]	..
Middle income economies	n.r.	1310[b]	3.4[b]
Upper middle income economies	n.r.	2050[b]	3.8[b]

[a]1980 figure

[b]World Bank estimate.

n.r. = not relevant.

Sources: Government of Australia (1984); United Nations (1984); World Bank (1985a and b).

services requires attention in several islands if agricultural output and exports are to increase.

Other problems stem from the rapid expansion of the public sector of most island nations following independence, largely as a result of substantial inflows of foreign aid, the importance of leisure, and an increasingly young population which has strained the ability of island governments to maintain education and health services. Additionally, regional issues such as transportation

Table 1.2 Pacific island states and territories: basic indicators

	Land area (km^2)	Sea area ('000 km^2)	Population ('000)	Density (people per km^2)	GNP (US$m) 1983	GNP per capita (US$) 1983	Adult literacy rate % 1980	Total aid flows (US$m) 1983	Aid per capita (US$) 1983	Aust. bilateral aid 1983-84 (A$m)	Aust. bilateral aid as % of total aid flows
Cook Islands	240	1,830	18	75	20[a]	1,360[a]	91.8	9.3	517	0.37	4.0
Fiji	18,272	1,290	670	37	1,140	1,820	75.0	32.8	49	10.04	29.3
French Polynesia	3,265	5,030	152	47	1,380	8,200	94.5	177.8	1,170	0.01	-
Kiribati	690	3,550	59	86	50[a]	770[a]	95.0	16.8	285	2.28	14.3
Nauru	21	320	7	333	70[a]	9,091[a]	..	-	..	0.05	..
New Caledonia	19,103	1,740	146	8	1,210	8,050	91.3	181.9	1,246	0.01	-
Niue	259	390	3	12	3[a]	1,080[a]	100.0	5.6	1,866	0.13	2.3
Solomon Islands	28,530	1,340	254	9	160	610	51.0	27.5	108	7.27	26.4
Tokelau	10	290	2	200	1[a]	560[a]	97.2	1.8	900	0.01	0.6
Tonga	699	700	104	148	80	740	99.6	18.0	173	4.99	27.7
Tuvalu	26	900	8	308	50[a]	570[a]	98.0	4.2	525	1.19	28.3
Vanuatu	11,880	680	127	11	80	700	..	27.0	213	5.13	21.8
Western Samoa	2,935	120	156	53	119[a]	770[a]	97.8	26.8	172	5.30	27.2

[a]1980 figures.

Source: Government of Australia (1984:170).

(both sea and air) and communications have to be tackled if the island nations are to achieve real progress in an increasingly competitive world.

The island nations of the South Pacific face special problems: they are among the smallest nations in the world, some are spread over wide distances and they are remote from large markets. However, these characteristics do not mean that there is no scope for economic growth and development. The nations of the Pacific cannot be analysed as a group. They form a spectrum in terms of population and geographic size, natural and human resource endowment, and economic policy capacity. The smallest countries, if well managed, can provide rising standards of living for their people. However, the Pacific countries will also have to join together regionally to tackle such sectors as transport and telecommunications which have considerable economies of scale. Development can take place in those sectors in which the islands have some advantage - agriculture, fisheries, forestry, tourism and some labour-intensive manufactures for export. The evolution and implementation of development policies by individual countries are a key to their growth; aid donors can assist the countries to build on the resources which do exist both nationally and in the region (Table 1.2).

Population pressures

Population growth, migration to towns and the ensuing demands for education, training and health facilities are exerting strong pressure for improved economic performance. Apart from Fiji and Tonga where fertility rates have fallen, population growth is high throughout the region, and particularly marked in Solomon Islands. By contrast, high outward migration has been reducing population pressures in Tonga and Western Samoa (Table 1.3).

Internal migration in all countries has meant a rapid growth of population in urban centres where it is creating pressures on basic social and physical infrastructure requirements. Given the limited employment opportunities and the slow expansion of employment in urban centres, serious problems are emerging (Ahlburg, Chapter 2 this volume). Until now public sector employment has been the major source of employment opportunities, with a large proportion of such jobs funded out of development assistance flows. The expansion of public sector employment has been excessive for the islands' needs, and cannot reasonably continue. Population and urban growth can only be accommodated with more rapid growth in agriculture and other private sector activities. The principal opportunities for increasing urban employment are in tourism, with limited possibilities in manufacturing for export. Growth in these sectors would have multiplier effects on employment in the rest of the economy.

Table 1.3 Average annual population growth, Pacific island states, 1973-81

Country	Population growth (%)
Cook Islands	-1.6
Fiji	1.9
Kiribati	0.5[a]
Nauru	1.5[a]
Niue	-3.8
Papua New Guinea	2.0
Solomon Islands	3.4
Tonga	1.1
Tuvalu	3.1
Vanuatu	3.2
Western Samoa	0.7
Middle income economies	2.4[b]
Upper middle income economies	2.3[b]

[a]United Nations estimate.

[b]World Bank estimate.

Sources: United Nations (1984); World Bank (1985a).

Table 1.4 indicates the likely labour force growth in the large islands. Water supply, sanitation, health care and education are critical 'public goods' areas. As a direct result of population growth in rural as well as urban areas recurrent and capital requirements are expanding rapidly. Health services are relatively well developed in most of the Pacific islands, but child mortality remains quite high. This is mainly because the supply of pure drinking water and sanitation are inadequate in rural areas. Catching up with these requirements would involve major investment outlays for a static population, let alone a growing one. However, such outlays are essential if population growth is to be contained, as it needs to be, particularly in Solomon Islands and Vanuatu. Given the high proportion of children and young people in the population, containing fertility rates will be difficult, even with strong family planning support policies.

Table 1.4 Average annual rates of growth of urban population, 1966-76 (per cent)

Fiji	Solomon Islands	Tonga	Vanuatu	Western Samoa
3.2	4.9	1.5	8.0	1.2

Source: Ahlburg (1985).

Table 1.5 Estimates of economically active labour force in four South Pacific countries

	1981	1986	2001
Fiji	205,270	239,072	332,424
Solomon Islands	25,673	30,947	53,379
Tonga	22,652	26,967	48,879
Western Samoa	46,850	59,038	94,460

Source: Hughes, Ahlburg and Lee (forthcoming).

Human resource development through education and training is the key to future growth. School enrolments are still low at the primary level in Solomon Islands and Vanuatu, and at secondary levels (15 to 19 year olds) in all the countries (Table 1.6). Enrolments of girls are substantially lower than those of boys, particularly where overall enrolments are low. Merely to maintain the current levels of enrolment will require a very large expansion of school places as Table 1.7 (which is based on the conservative assumption that population growth will remain constant) indicates. To increase the enrolment of secondary students to 60 per cent of the group aged 15 to 19 years would require an even greater increase in school places.

Table 1.6 Current school enrolment as percentage of age-group in the five largest Pacific countries

Age group (years)	Fiji	Solomon Islands	Tonga	Vanuatu	Western Samoa
5-9	96	33	89	62	82
10-14	87	57	81	64	95
15-19	36	25	51	23	54

Source: Hughes, Ahlburg and Lee (forthcoming).

Table 1.7 Projected school enrolment ratios in the five largest Pacific countries (percentage increase in school places from a 1981 base to 2001; 1981 = 100)

Age group (years)	Fiji	Solomon Islands	Tonga	Vanuatu	Western Samoa
5-9	143	217	136	175	118
10-14	132	209	110	170	109
15-19:					
current enrolment	115	205	110	170	110
60 per cent enrolment	193	497	129	453	122

Source: Hughes, Ahlburg and Lee (forthcoming).

Temporary and permanent emigration from a number of Pacific islands, particularly in Polynesia, has eased internal population pressures, particularly in urban areas (Table 1.8). Emigration has in fact become essential to countries such as Tonga and Western Samoa. Without it employment problems would in the short run become very serious indeed. Emigration has also led to a substantial inflow of remittances from the migrants. In several countries they play a crucial role in supplementing export earnings (Table 1.9).

Table 1.8 Estimated net migration

	Fiji	Solomon Islands	Tonga	Vanuatu	Western Samoa
1976	-4355	-68	-655	-388	-1193
1984	-4782	..	..	-609	-4413

Source: Lucas and McMurray (1986).

Table 1.9 Private unrequited transfers (US$ million)

	1974	1978	1982
Fiji	-2.3	-4.0	-3.0
Solomon Islands	2.0	2.0	-5.0
Tonga	5.1	8.6	14.8[a]
Vanuatu	0.2	0.2	..
Western Samoa	7.1	12.1	18.6

[a]1981 figure.

Source: Falvey (Chapter 6, this volume).

Emigration represents a drain of indigenous skills developed at considerable cost to national budgets. The costs and benefits of emigration from the islands of the Pacific have yet to be precisely calculated in economic and social terms, but it is clear that, for the emigrants, as well as the home and the host countries, there are considerable gains. The emigrants quickly raise their living standards. The islands benefit from a reduction of population pressure, inflow of remittances and often from greatly increased skills and experience, together with pensions and savings, which returning migrants devote to the home economy. The host countries acquire a semi-skilled workforce that to date at least has been readily absorbed, increasing national output. Limited land rights, a desire to escape from social pressures, economic motives and the retention of linkages through culture account for movement patterns in both directions as they do in other regions.

Trends in agriculture

The failure of agricultural production and traditional agricultural exports to take advantage of the islands' potential is a major factor in the relatively poor growth performance of the Pacific island nations. The problems vary between the countries. For Fiji, with its traditional reliance on sugar, the problem is very much exacerbated by the mercantilist agricultural trade policies of the Economic Community (EC). For other countries, supply side shortcomings are more in evidence. The ability of several countries to secure high average prices for their crops in world markets is severely constrained by agricultural marketing policies and practices. The average f.o.b. price of commodities sold by marketing boards is often a third or more below the world price (Table 1.10). Farmers receive only a small proportion of this price because the marketing boards absorb a significant proportion of their receipts. Thus farmers have not been

encouraged to increase their output and improve the quality of crops. Research indicates that farmers in the Pacific - as in other countries - respond to price incentives and adjust supply accordingly (Hardaker and Flemming 1986). It is not surprising, therefore, that quality and volume of agricultural production have been falling.

Table 1.10 South Pacific commodity prices as percentage of average world prices (f.o.b.), 1979-83

Fiji	
Cocoa[a]	95
Coconut oil	83
Solomon Islands	
Copra[a]	77
Cocoa	80
Tonga	
Copra[a]	73
Vanuatu	
Copra	72
Coffee[a]	59
Cocoa[b]	70
Western Samoa	
Copra	66
Cocoa	74

[a]1976-80 average.

[b]1978-82 average.

Source: Islands/Australia Project (1985).

An increase in production and traditional agricultural exports depends on changes in marketing practices that will give farmers prices which reflect world prices and quality differentials. The experience of many other developing countries suggests that 'improving' marketing boards results in poorer rather than better results. Better agricultural performance also requires research to refine products and production methods. At present traditional product characteristics do not always meet market needs and there are storage and transportation problems. Pest and weed control, tilling, rotation and other aspects of cultivation can be greatly improved. The cultivation of improved coconut stock has been neglected, and improved cocoa and coffee stock is not always readily available. Such research has to be made available to farmers through extension services. In some

countries improved internal transport and storage facilities are also necessary. Development banks have emerged in the Pacific as the main source of credit for small- and medium-scale farmers. Substantial arrears, however, indicate problems in present lending practices. There is no reason why development banks should not lend successfully in the agricultural area, and with higher growth in the sector commercial banks would also be attracted to agricultural lending.

Export diversification

The opportunities for the diversification of agricultural export crops in the Pacific are considerable. The smallness of the Pacific islands has advantages in breaking into markets with new agricultural products and in selling in new countries. The larger North American and Japanese markets are particularly favourable to tropical fruit and vegetable expansion. The recent success of marketing tropical fruit and vegetables in California is an indication of existing opportunities (see Table 1.11). Some specialized manufactured products - for example, clothing - have similar opportunities as a knitting firm in Tonga has demonstrated by moving out of the traditional but small and highly protected Australian and New Zealand markets. The principal constraints lie on the supply side in high labour costs. Salaries and wages and fringe benefits are out of proportion to productivity. The revision of the SPARTECA arrangements is thus likely to be of limited value in increasing exports in the future, despite the favourable market access it provides for all but a few products (Robertson, Chapter 5 in this volume). For traditional products, especially copra and bananas, the large EC market, with its compensatory Stabex arrangements, has not been adequately exploited.

While it is important to foster the growth of exports as a feature of overall growth and macro-economic management, the needs of the local market, particularly in the tourism sector, must not be overlooked. The backward linkages from tourism to agriculture are, for the most part, poorly developed in the Pacific. There are numerous explanations (excuses) for this on both sides - irregularity of supply/demand, poor quality and high costs to name but a few. What seems to have been lost sight of is the fact that the sort of goods tourists require (foodstuffs and traditional handicrafts) are often identical with the exotic tropical products which the islands are seeking to export. It would seem therefore that, while some tourists are reluctant to 'experiment' with a new cuisine in the islands, there is ample scope for the tourist industry to encourage local suppliers. Expanded sales of local produce would increase value added in tourism and encourage producers and marketing agents to develop standards of quality control and supply regularity that would assist to meet export market requirements. With adequate entrepreneurship, ample markets for products such as fruit and flowers could be developed.

Table 1.11 Agricultural output volume and export growth, 1973-83

Country	Agricultural production growth 1973-83 (%)	Food and live animals export growth 1973-83 (%)
Cook Islands[a,b]	-8.3[c]	2.8
Fiji	-0.1	-3.4[a]
Kiribati	1.2[d]	103.0[e]
Nauru	..[d]	..[f]
Niue	-2.8[d]	9.3[f]
Papua New Guinea	2.6	1.1[f]
Solomon Islands	7.8	8.4[g]
Tonga	1.4	-1.5
Tuvalu	..	..[h]
Vanuatu	3.4	-1.5[i]
Western Samoa	1.2	-15.4

[a]Deflated by the food price index as defined by the United Nations.

[b]Period 1973-82.

[c]Agricultural, hunting, forestry and fishing growth 1975-78.

[d]Coconuts only.

[e]Period 1979-81 and deflated for the food price index of that period.

[f]Period 1976-83 and deflated for the food price index of that period.

[g]Period 1978-83 and deflated for the food price index of that period.

[h]Period 1976-81 and deflated for the food price index of that period.

[i]Period 1980-82 and deflated for the food price index of that period.

Source: United Nations (1984).

Export instability and macro-economic management

The Pacific islands have less instability in current account receipts than most developing countries because of the importance of development assistance, remittances and, in Fiji's case, tourism, which tend to stabilize overall foreign exchange receipts.

The implications of export instability and the consequences for macro-economic policy are discussed in the chapters by Falvey and Guest. They both conclude that the slow rate of growth of export earnings and the volatility of fiscal revenues are the principal constraints on the pursuit of medium-term goals. Reliance on a few commodity exports leads to some instability in the level of GNP and, hence, fiscal revenue for some countries. But aid payments and remittances from abroad are counter-cyclical and, together with tourism, which is less influenced by world economic cycles than commodity prices, offset commodity instability quite markedly.

Commodity stabilization schemes are mainly useful in stabilizing farmers' incomes, and it is not clear to what extent this is desirable. Farmers who are profit maximizers must be aware of price fluctuations and adjust their expenditures accordingly. International facilities for commodity and revenue stabilization - such as the IMF's concessional borrowing facilities and to a more limited degree Stabex - are a much more efficient approach to revenue stabilization than commodity stabilization.

Macro-economic indicators also suggest that instability has not been a major problem. Most of the Pacific nations have experienced relatively modest inflation rates by developing country standards during the past decade. The rapidly growing part, but even such countries as the Republic of Korea have had bouts of double-digit inflation. Among the Pacific countries, only Western Samoa had such an inflation experience (Table 1.12).

Macro-economic management is more difficult for the smaller than for the larger states because various forms of instability loom larger, but it is not impossible. Kiribati has been among the most successful countries in the management of its economy on the basis of a Revenue Equalization Reserve Fund derived from phosphate earnings on Ocean Island. Tuvalu would like to proceed along similar lines. If aid donors to Tuvalu wish to foster independence, good economic management and economic development, they would assist the economy much more effectively by contributing to such a trust fund than by annual grants.

Table 1.12 Average annual inflation rate (per cent)

Fiji 1979-83	Solomon Islands 1977-83	Tonga 1973-83	Vanuatu 1976-83	Western Samoa 1980-83
9.7	10.5	12.0	9.1	18.4

Source: Hughes, Ahlburg and Lee (forthcoming).

Tourism

Tourism in Fiji and the Cook Islands contributes a significant share to GDP and employment in the modern sector. Elsewhere in the Pacific tourism has considerable potential but to date has been relatively neglected. Fears of cultural degradation and misconceptions about the nature of value added in tourism still inhibit tourist development.

There is no doubt that 'leakages' to imports of goods and services are inevitably large at early stages of tourist development. Tourism is likely to continue to be heavily import intensive as it is in all major successful tourist countries. Ways of increasing the islands' value added have already been discussed. The principal gains from tourism accrue through direct and indirect employment, and this is the component particularly needed in most Pacific countries. The islands' tourism strategy needs to be focused on the type of tourist activity most suited to local conditions. The 'high class' market is much more employment-intensive than 'mass-market' tourism, and less liable to interfere with local culture. In fact it often contributes to the preservation and development of local customs.

The training of national staff in all aspects of hotel and resort operation is an important aspect of the employment intensity of tourism. On the job training and low level courses are available in the region, but to date no real effort appears to have been made to develop the full potential of national staff. Quality training is expensive and can encourage staff movement to more lucrative industrial countries. It would, however, be foolish to neglect training for this reason. Only rapidly rising living standards can reduce outward migration of skilled people.

Tourism also requires investment in such infrastructural facilities as roads, water supply, power generation and sanitation. Tourist income can make such facilities available to populations that could otherwise not afford them.

The South Pacific nations will have to work together on a regional basis if they want to develop tourism effectively. Facilities in various countries are complementary, not competitive. Most potential visitors will wish to spend some time in more than one island state. There are very considerable externalities and economies of scale in developing tourist facilities and marketing them, and particularly in transportation to and within the region. Practical regional cooperation is thus a key factor in the development of tourism in the South Pacific.

Transport

Intra- and inter-island transport, and transport to the principal markets, by both sea and air, are of particular importance to the development of the South Pacific countries. A large volume of studies, a considerable amount of national investment and donor assistance have been devoted to transportation, but services remain inadequate for people and goods. The main problem appears to lie in the lack of appropriate policies.

Efficient international, intra-regional and intra-island air transport is essential to increasing tourist flows. Rationalization of carriers and equipment as well as changes in access to landing and route rights are critical to improving air transport in the region. Providers of development assistance who are supporting the growth of infrastructure to service transport and tourism requirements (such as roads, airport runways and terminals) need to cooperate with the island nations in looking critically at impediments to the effective development of transport linkages and a tourism infrastructure. Regional cooperation in developing tourist markets and, in particular, in rationalizing the transport infrastructure designed to service tourist flows, is essential.

As Forsyth shows in Chapter 6, assistance has often been directed to transport equipment and port and airport infrastructure, though the size and direction of benefits have not been fully evaluated.

Telecommunications

Satellite technology has made it possible to reach remote communities at modest cost not only for point-to-point communication such as telephone and telex, but also for radio and television broadcasting, and even teleconferencing (Cheah, Chapter 7 this volume). Remote island communities can thus be brought into the world mainstream, presaging a revolution in communications for the Pacific. The demand for communications has long outstripped the governments' abilities to plan and supply

communication facilities as telephone waiting lists indicate in several islands. The high ownership of video equipment, the opening of the first television station in Tonga (to be followed by others), and the number of people catching programs from INTELSAT and other satellites are evidence of demand and commercial supply outstripping policy. Although the educational potential of satellite communications has been demonstrated by the extension service of the University of the South Pacific, the educational capacity of satellite communications in schools, adult literacy, community health, extension services and many other areas is being neglected.

In most South Pacific countries communications are split in two organizationally with a semi-private organization exploiting the lucrative and growing international trade and a public national entity attempting to service domestic areas. The rural and remote areas thus cannot be cross-subsidized by the most profitable traffic, and are in fact neglected. Considerable economies of scale can be achieved in telecommunications by planning, establishing networks, and in training and management. The regional organization to exploit such economies is lacking. Regional action is limited to planning rural telecommunications. Planning at the national level is almost entirely devoted to engineering considerations. Economic and social factors are not taken into account explicitly and the costs and benefits of alternative methods of supplying telecommunications needs are not evaluated.

Satellite links are already used by several South Pacific countries for point-to-point international communication. Extension to intra-island communications could provide these services to remote communities. Television services could be added at relatively low cost. The main economies of scale lie in television broadcasting. Many developing countries therefore use one service for commercial entertainment services (in the evening), to supplement formal schooling (during the day) and for community education (day and evening). The entertainment services are used to subsidize the education services. The costs of providing such broadcasting services are fairly high per person reached. A regional service with national segments would therefore be most economic.

At least two satellite systems, INTELSAT (which is already used in the South Pacific for international telephone and telex communications) and AUSSAT are available for the South Pacific countries. Both are prepared to supply services at marginal cost. These two systems operate in different modes so that they are not compatible. Each has advantages and disadvantages which will have to be evaluated in socio-economic as well as engineering terms before a choice is made on the system or systems appropriate to the South Pacific. The lack of policy is unfortunately leading to ad hoc actions by private entrepreneurs and governments which are

likely, as in the present organization of telecommunications, to allow private enterprise to 'cream off' the most profitable sector of television broadcasting, thus neglecting the social and educational uses of television, and preventing cross-subsidies from commercial to educational television.

Higher education in the South Pacific

The large number of expatriates who remain in key positions in South Pacific countries underlines the lack of trained people and the inadequacies of higher education. For small countries - and the South Pacific as a whole is small in this sense - there will always be a need to import some skills which are needed at short notice or for a short time. It is clearly not possible for each Pacific country to train all the professional people it will require at any one time. On the other hand, at least at the regional level, a core cadre of skilled people should be available in the not too distant future.

Many of the problems of higher education are rooted in inadequate primary and secondary education. Primary education is often degraded by language problems. If children are learning in English (or, in part of Vanuatu, French) this may be their third language. Secondary education has to build on this inadequate base, and it is often still very literary and classical, neglecting the maths and science needed for many professions.

Primary and secondary education standards have to be reviewed, and where necessary raised to provide a basis for higher education. But there are even greater problems at post-secondary than at the primary and secondary levels. If the Pacific countries want to meet their various training needs, they will require an appropriate post-secondary education structure. Several countries are groping towards post-secondary community colleges that would combine pre-university academic training,

lower level more practical training for some professions such as bookkeeping and nursing, and technical training in areas such as tourism and mechanics. Because of their colonial heritage such institutions are being called 'universities' in some countries and their development is being stifled by preconceptions that go with the 'university' title.

Most students are inadequately prepared to enter the University of the South Pacific (and the universities of Papua New Guinea). University graduates are consequently often unable to pass professional examinations or to gain entry into reputable post-graduate institutions. Many parents in the islands, recognizing these problems, send their children abroad for tertiary and even for high school education. Improving the content of education, introducing appropriate forms of organization, and providing technical and professional training

are all necessary components for increasing local participation in key positions. The concept of regional education at the tertiary level is very important for economies of scale. But if regional tertiary institutions are to function properly, students must be well prepared when they enrol.

Regional cooperation

Regional cooperation is clearly essential in several areas, notably transport, communications and higher education, if the obstacles to South Pacific development are to be overcome. A regional approach to the marketing of tourism would also be helpful. In contrast it seems clear that, not only is there little scope for protectionist import substitution policies in individual countries, but also the South Pacific market as a whole is far too small and scattered for import substitution policies to be economic.

In their first years of independent government the South Pacific nations naturally had little time left for regional policies. In that context their achievements in regional cooperation are quite impressive. However, now that they are established and have some experience in policy formulation and implementation, they will be able to look more closely at areas where regional cooperation is essential.

The existence of two very similar organizations with overlapping responsibilities and membership - the South Pacific Commission (SPC) and the South Pacific Bureau for Economic Co-operation (SPEC) (Table 1.13) - hinders effective regional organization. Limited professional resources are wasted in duplicate efforts leading to an excessive need for expatriate staff.

The role of development assistance

The South Pacific nations are among the highest per capita aid recipients in the world (Table 1.14). As already indicated, however, the effects of aid are not all positive. In the small economies of the South Pacific development assistance can have 'Dutch disease' effects akin to those of mineral rents: resources are drawn to the government (instead of the mineral sector) expanding government employment beyond local capacity, raising wages and salaries and the supply of public goods; rate of exchange becomes overvalued, biasing the economy against exports and in favour of imports; overall the private goods sectors are discriminated against and constrained. To identify and analyse these effects is not to argue against aid, but to provide the capacity to formulate aid absorption and aid provision policies that will enable the 'Dutch disease' effects to be minimized just

Table 1.13 South Pacific and Papua New Guinea: membership of selected regional and international organizations and banks

Countries	South Pacific Forum and SPEC	South Pacific Commission[a]	Asian Development Bank	World Bank	Commonwealth
Cook Islands	x	x	x		
Fiji	x	x	x	x	x
Kiribati	x	x	x		x
Micronesia	(observer)	x			(special member)
Nauru	x	x			
Niue	x	x			
Papua New Guinea	x	x	x	x	x
Solomon Islands	x	x	x	x[b]	x
Tonga	x	x	x		x
Tuvalu	x	x			(special member)
Vanuatu	x	x	x	x	x
Western Samoa	x	x	x	x[b]	x

[a]The other members of the Commission are American Samoa, French Polynesia, Guam, Marshall Islands, New Caledonia, Northern Mariana Islands, Palau, Pitcairn Island, Tokelau, and Wallis and Futuna.

[b]International Development Association recipients.

Source: Government of Australia (1984).

Table 1.14 Total aid[a] receipts per capita (US$) for South Pacific and comparable countries between 1 million and 5 million population

South Pacific	Per capita US$ Aid (1982)	Income (1983)
Cook Islands	581	1360[b]
Fiji	56	1790[c]
Kiribati	258	460[c]
Nauru	-	9091[b]
Niue	1294	1080[b]
Papua New Guinea	102	790[c]
Solomon Islands	126	640[c]
Tonga	177	780[c]
Tuvalu	827	570[b]
Vanuatu	221	531[b]
Western Samoa	146	770[b]

Comparable countries[d]	Per capita US$ Aid (1982)	Income (1983)
Aid over US$100 per head		
Jordan	239	1640
Mauritania	111	480
Aid over US$50 per head		
Somalia	87	250
Jamaica	82	1300
Yemen Democratic	69	520
Lesotho	65	460
Congo	56	1230
Liberia	56	480
Aid under US$50 per head		
El Salvador	47	710
Nicaragua	42	880
Honduras	41	670
Central African Republic	39	280
Costa Rica	33	1020
Burundi	30	240
Togo	29	280
Paraguay	28	1410
Benin	22	290
Panama	22	2120
Sierra Leone	20	330
Chad	13	..
Laos	11	..
Bhutan	9	..
Uruguay	1	490

[a] Aid defined as official development assistance by the OECD Development Corporation.

[b] 1980 figure.

[c] World Bank estimate.

[d] Developing countries with a per capita income of over US$4000 (Israel, Libya, United Arab Emirates, Kuwait, Singapore, and Trinidad and Tobago) have been omitted.

Sources: As for Table 1.1.

as the initial identification of its effects resulting from the exploitation of natural gas enabled the Netherlands to improve its policies so as to absorb the gas earnings without heavy costs.

Another major factor contributing to difficulties in aid absorption results from the lack of coordination among donors. This encourages recipients to draw up rather extensive public sector project 'shopping lists' which inspire donors to compete for what appear to be the 'best' projects. In some countries most of the time of the leading professional public servants is accordingly taken up with servicing donors. This can mean that not enough time is taken to deal with private sector policies, exacerbating the bias against agriculture.

It is hoped that Kiribati's lead in calling a meeting of aid donors in 1985 to clarify development issues and encourage aid coordination will be followed by other nation states, thus materially improving the quality of development assistance and reducing the time taken to absorb it.

For many donors the nations of the South Pacific are small and remote. Their share of total assistance flows is small. To the countries of the South Pacific, however, development assistance is of vital importance. It is important that aid donors familiarize themselves with the development prospects of the island nations, and pay adequate attention to the quality as well as the quantity of development assistance.

Chapter 2

Population and economic development in the island nations of the South Pacific

Dennis A. Ahlburg*

Population growth is widely believed to have adverse consequences for economic growth. In fact Robert McNamara, past president of the World Bank, stated that population growth was the 'greatest single obstacle to economic and social advancement of most of the societies of the developing world' (McNamara 1977:11). However, this position has been challenged recently by a group of scholars who argue that population growth may have a positive effect on economic growth since it results in economies of scale and promotes technological progress (Boserup 1981; Clark 1978; Simon 1977, 1981).

What evidence, however, exists on the impact of population growth? Clark (1978) found a positive correlation between population growth and economic growth in forty-six countries from 1961/63 to 1971/73 and concluded that 'rates of population growth up to 3 per cent per year seem to be increasingly beneficial from a point of view of improving rates of growth of real product per head, less favourable above the 3 per cent per year'. McNicoll (1984) extended this analysis to cover all countries with 1980 populations of 5 million or more over the period 1960 to 1980 and concluded that 'a positive net productivity impact of rapid population growth is unsubstantiated as a general proposition'. Thus, all we may infer from these correlations is that 'whatever the influence of population on economic growth, it is relatively small in comparison with other influences, or at the very least that it is not big enough to dominate everything else, for then it would show up in the correlations' (Cassen 1976:806).

There are other features of population besides its growth rate that may affect economic growth. The island nations of the South Pacific region are small by global standards. Smallness limits division and specialization of labour and the potential for economies of scale in production. These problems are exacerbated when the national territory is fragmented and isolated, as is the

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case with many South Pacific island nations. However, even if we accept the desirability of a larger population - a view that has been expressed by Vanuatu (1984b:334) - this does not mean that faster population growth is also desirable. What countries need may be 'more people who are healthy, educated, and employed with incomes to spend on manufactures; if difficulties are already experienced in providing nutrition, health services, schooling, and jobs, economies of scale are unlikely to remove those difficulties' (Cassen 1976:807).

While a nation's population may grow at 2 or 3 per cent this may coincide with rates of growth for major cities (or towns) of 4 to 5 per cent per year (McNicoll 1984). Such growth, it is commonly feared, will cause cities to become 'unmanageable, environmental disasters, and centers of social revolution' (Williamson 1985). While this view may seem overstated, there is already evidence from Port Moresby that excessive rates of urbanization may be associated with social problems which may affect development. The spatial allocation and growth of population is, therefore, also of concern.

Of the five nations under consideration in this chapter - Fiji, Solomon Islands, Tonga, Vanuatu, and Western Samoa - only Western Samoa has a rate of population growth below the world average. The rate of growth in Western Samoa and Tonga would be considerably higher but for significant external migration. The rate of population growth in the Solomons and Vanuatu is among the highest in the world - exceeded only by a few African and Arab countries - and may be increasing (Ahlburg 1985). Bakker (1977:18) has calculated that, assuming the rates of growth in population experienced by South Pacific nations between the last two censuses continue, Fiji, Solomon Islands, Tonga, Vanuatu and Western Samoa would double their populations in 34, 21, 46, 21 and 111 years respectively. For current levels of health, education and employment to be maintained, real expenditures on these also need to double over the same period.

Although excessive urbanization is not currently seen as a significant problem in most of the Pacific islands, the rates of urban population growth for Fiji, Solomon Islands and Vanuatu exceed the average for the world and for the Solomons and Vanuatu even exceed rates of urban growth currently observed in Africa and South Asia (see Table 2.15).

A number of important questions arise from the study of population and the economy. First, is it true that rapid population growth makes if difficult to finance the investment in human and physical capital necessary for sustained economic development? Second, what role does population size and urbanization play? And, for our particular purpose, what evidence is there of effects of population growth on economic development in the five South Pacific island nations under study?

1 Population growth and economic development: evidence from formal models

The influential model of Coale and Hoover (1958) found that a 50 per cent reduction in fertility over 25 years was associated with a 38-48 per cent higher income per consumer than would have occurred under constant fertility. This result, however, relies upon two key assumptions of the model: first, that population growth reduces aggregate savings and investment;[1] second, that population growth diverts the composition of investment from 'direct growth' expenditures to less productive 'welfare' expenditures such as health and education.

Investments in education and health are not unproductive. Investments in education add directly to economic development by improving the quality of the labour force, and also have an indirect effect by decreasing fertility and thus the rate of population growth (Wheeler 1984). Similarly, depending upon the type of health expenditure, these expenditures may increase the quality of the labour force through a public health program (Barlow and Davies 1974) or decrease the rate of population growth through family planning programs. Kelly and Williamson (1984) argued that expenditures on education and health, including family planning, should be viewed as a form of public saving since they yield consumption utility to recipients and have an impact on future income as well.

In contrast to the conventional wisdom, Simon (1977, 1981) concluded that positive population growth produces considerably better economic growth in the long run than does a population that is not growing, although in the short run the latter may perform slightly better (Simon 1977:305). Simon's finding is based on a strong, positive, direct impact of social overhead capital on national output and upon technological progress driven by population growth. Social overhead capital includes economies of scale in production, better roads and communications, improved government organization, and improved health services.

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[1] Recent empirical work by Ram (1982), Kelly (1980), and Bilsborrow (1979) showed little evidence of a significant adverse effect of high population growth on aggregate savings. Private savings are often concentrated in the hands of a few wealthy, low fertility families and are little affected by wider fertility fluctuations. Among the bulk of families fertility variations appear to be accommodated by varying household consumption or by increased work. Corporate and government savings appear to be dominated by factors other than population. As McNicoll (1984:202) remarked, 'for the most part the level of austerity (and its distribution in the population) to be imposed in the interests of capital formation and economic growth is a government policy decision .

Simon assumed that social overhead capital accrued in direct proportion to the growth in the labour force and was costless, that is, did not cause a decrease in expenditure in other areas. However, government expenditure on roads, education and health does not automatically increase with population growth. It is determined by government policy decisions, and, with constraints on government revenues, implies a decrease in expenditure in some other area - unless the funds are from aid or foreign borrowing.

Empirical evidence on economies of scale is inconclusive. Moreover, economies of scale can be captured by increased population density or by trade, rather than by population growth, although McNicoll (1984) has noted the difficulties facing small countries in expanding their export markets. In addition, in land-scarce countries, agriculture may encounter diseconomies of scale as increased demand from population growth leads to increased costs. Evidence is also mixed on the role of population growth in fostering technological development. Bauer (1981) has pointed out that the dominant roles in entrepreneurship and innovation are frequently played by numerically small cultural or ethnic minorities. In addition, although Boserup (1981) cites many examples of the adoption of new technology associated with population size, growth and density, many counter-examples also exist (McNicoll 1984:199; Cassen 1976:807).

The models of Coale and Hoover and of Simon, therefore, do not allow us conclusively to state the impact of population on economic development. However these models and those that have followed them are useful in pointing out the critical factors that need to be explored when evaluating the impact of population on economic growth.[2] They are: (i) savings and investment; (ii) social overhead capital, which includes health and education expenditures; (iii) technological change; (iv) employment; (v) migration and urbanization.

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[2]For a more detailed discussion of formal economic-demographic models see Ahlburg (forthcoming).

2 The impact of population on economic growth

Population trends[3]

Population growth. Rates of population growth in Vanuatu and Solomon Islands are significantly above the world average and exceed or approach levels currently observed in Africa (3 per cent per annum). In contrast, Fiji has a rate of population increase similar to the world average of 1.8 per cent per annum while Western Samoa and Tonga have relatively low rates of population increase. It is important to note, however, that population growth in Tonga and Western Samoa is low because of a very high rate of emigration. In 1976, for instance, the rates of natural increase in Tonga and Western Samoa were 3.3 and 3.1 while the observed rates of population increase were only 0.6 and 1.0 respectively. Table 2.1 reports population estimates and rates of growth for the five nations for the period 1960 to 1980.

Table 2.1 Population and population growth rates for five Pacific island nations, 1960-80

	Fiji	Tonga	Solomon Islands	Vanuatu	Western Samoa
1960	394	63	126	66	111
1965	464(3.3)	75(3.5)	143(2.5)	74(2.3)	127(2.7)
1970	520(2.3)	86(2.7)	163(2.6)	84(2.5)	142(2.2)
1975	576(2.0)	88(0.5)	193(3.4)	102(3.4)	150(1.1)
1980	634(1.9)	97(1.9)	228(3.3)	117(2.7)	156(0.8)

	World	Africa	South Asia	Oceania
1975-80 (growth rates)	1.8	3.0	2.3	1.7

Note: Population growth rates in parentheses.

Sources: Ahlburg (1985); United Nations (1985).

[3] Registration systems in the nations under study are incomplete and demographic data are consequently often of doubtful quality. The demographic estimates reported here are the best estimates available from a number of national and international sources.

The rate of population growth in Fiji, Tonga, and Western Samoa has fallen steadily from at least 1960 while Solomon Islands and Vanuatu appear to be experiencing an increase in the rate of population growth (see Table 2.1). Fertility, and to a lesser extent emigration, seem to be the chief causes of changes in the rate of population growth.

Fertility. The observed declines in the rate of population growth for Fiji, Tonga, and Western Samoa reflect marked declines in fertility, whether measured by the crude birth rate or the total fertility rate (see Table 2.2). It appears that an increased use of family planning in each of these countries explains at least part of the decline in fertility even though the performance of these programs has been rated as 'weak' to 'moderate' (Lapham and Mauldin 1985; Lucas and McMurray 1986). Although the total fertility rates have declined by about 30 per cent since 1965 they are still high and, when combined with a young age structure of the population (see Table 2.13), result in rates of natural increase that exceed the world average.

In Solomon Islands the total fertility rate increased from 6.4 in 1970 to 7.4 by 1980, contributing significantly to the rapid rate of population growth. This increase appears to have resulted from improved health as medical services and the anti-malaria campaign expanded (Lucas and McMurray 1986). Data reported in Lucas and McMurray (1986) suggest the possibility of a decline in fertility in Vanuatu in the 1970s, but the accuracy of these estimates is open to question. They also report some increase in contraceptive use in recent years, but the major method in use has now been banned by the government. The current total fertility rate of around 6.6 is very high and, given Vanuatu's young population age structure, points to significant future population growth.

Mortality. R. Taylor (cited in Lucas and McMurray 1986) cautions that mortality information for the five countries under study is 'unreliable or suspect'. Although point estimates may be inaccurate, the data shown in Table 2.3 should reveal basic trends and patterns that are representative of mortality in the five nations. Fiji, Tonga and Vanuatu exhibit a decline in the crude death rate since 1960, while no such decline is evident in Solomon Islands or Western Samoa. The overall death rate for the islands is at or below the world average. Some gains seem to have been made in life expectancy, although the levels for Fiji and Solomon Islands may be too high by as much as four years (see Lucas and McMurray 1986: Table 5).

Table 2.2 Fertility in five Pacific island nations, 1960-80

Crude birth rate per thousand

	Fiji	Tonga	Solomon Islands	Vanuatu	Western Samoa
1960	42.1	35.0	..	44.1	..
1965	35.7	..	36.1	45.1	44.0
1970	28.5	31.3	41.0	44.1	40.2
1975	28.6	31.0	45.0	42.1	37.0
1980	28.6	30.0	42.9	40.1	35.7

	World	Africa	South Asia	Australia
1975-80	38.9	46.9	37.7	16.0

Gross reproduction rate

	Fiji	Tonga	Solomon Islands	Vanuatu	Western Samoa
1960	3.1	..	..	..	..
1965	2.6	3.5	..	3.2	3.6
1970	1.9	..	3.1	..	3.3
1975	1.7	2.5	..	..	2.8
1980	1.8	..	3.6	..	2.5

	World	Africa	South Asia	Oceania
1975-80	1.9	3.2	2.6	1.4

Total fertility rate

	Fiji	Tonga	Solomon Islands	Vanuatu	Western Samoa
1960	6.3	..	..	..	..
1965	5.2	7.1	..	6.7	7.4
1970	4.0	5.1	6.4	..	6.7
1975	3.5	5.1	7.4	..	6.7
1980	3.6	4.6	7.4	6.6	4.9

	Kenya	Australia
1980-85	8.1	2.0

Sources: Agency for International Development (AID) (1985); Lucas and McMurray (1986); World Bank (1980b).

Table 2.3 Mortality and life expectancy in five Pacific island nations, 1960-80

Crude death rate per thousand

	Fiji	Tonga	Solomon Islands	Vanuatu	Western Samoa
1960	10.0	..	..	..	..
1965	6.0	14.0	13.0	20.0	..
1970	4.7	..	11.0	..	7.7
1975	4.3	10.0	12.0	..	7.0
1980	4.7	7.8	13.0	12.0	7.9

	World	Africa	South Asia	Oceania
1975-80	11.4	18.0	14.4	9.0

Life expectancy at birth[a]

	Fiji		Tonga		Solomon Islands		Vanuatu		Western Samoa	
	M	F	M	F	M	F	M	F	M	F
1960	63.1	65.7	..	..	..	..	..	..	..	..
1965	65.3	68.6	56.0	53.0	..	..	..	..	60.2	64.3
1970	66.4	69.9	56.2	59.3	58.0	58.0	..	..	59.6	63.4
1975	66.4	69.9	57.3	60.9	58.0	58.0	..	..	61.4	65.2
1980	66.2	69.9	60.0	61.0	57.0	57.0	56.0	54.0	62.2	66.0

	World	Africa	South Asia	Australia
1975-80	57.3	47.6	51.7	74.0

Infant mortality rate per thousand

	Fiji	Tonga	Solomon Islands	Vanuatu	Western Samoa
1960	68.0	..	..	..	..
1965	58.0	59.0	52.4	..	42.6
1970	50.0	..	52.4	..	47.5
1975	43.3	20.6	58.0	..	40.0
1980	36.7	63.0	52.0	94.0	35.0

	World	Africa	South Asia	Australia
1975-80	88.0	125.0	120.0	11.0

[a]Lucas and McMurray (1986) report life expectancies in the 1970s of 61 (male) and 64 (female) for Fiji and 54 and 54 for Solomon Islands.

Sources: AID (1985); Lucas and McMurray (1986); World Bank (1980b); United Nations (1985).

Fiji has made significant gains in reducing infant mortality while Western Samoa has made modest gains. Tonga and Solomon Islands appear to have had relatively constant levels since the 1960s at 70 per cent and 40 per cent higher than Fiji and Western Samoa (although, as noted above, there was an apparent drop in the Solomons between 1975 and 1980). All of these nations have rates below the world average. Vanuatu, however, has an infant mortality rate a little above the world average, although well below the levels observed in Africa and South Asia.

Although data on cause of death need to be treated with caution, it appears that respiratory and infectious diseases are important causes of death in those nations with relatively low life expectancies. Fiji and Western Samoa, however, have a more 'Western' pattern of mortality with more deaths due to high blood pressure, diabetes and heart disease (Taylor, cited in Lucas and McMurray 1986).

Population forecasts. Table 2.4 presents two sets of population forecasts for the five countries under study. The UN median forecast may be taken as a representative conservative forecast while the time-series based forecast of Ahlburg (1985) predicts higher population growth for all countries except Tonga. These two forecasts may be loosely interpreted as an upper and lower bound on likely future population growth. A more comprehensive set of population forecasts is analysed in Ahlburg (1985) and in Lucas and McMurray (1986).

Both sets of forecasts predict a continuation of recent trends for Fiji, Tonga, Solomon Islands and Vanuatu and a possible break with past trends for Western Samoa. For Tonga and Fiji population growth is predicted to slow down, relative to the rate experienced in 1966-76 (1.5 and 2.1 per cent respectively). The rate of population growth in Western Samoa is predicted to be slightly above its recent level (0.6 per cent, 1976-81), while for Vanuatu and Solomon Islands predicted rates of growth exceed rates recently experienced (3.2 per cent, 1967-79 for Vanuatu; 3.4 per cent, 1970-76 for Solomon Islands).

There are several factors that may cause population growth rates to be even higher than expected. The population growth rate of Tonga and Western Samoa is kept low by significant emigration. If the willingness or ability of receiving countries to absorb these emigrants changed, the observed rate of population growth would move closer to the much higher rate of natural increase. An increase in fertility in Vanuatu, and an attendant further increase in the rate of population growth, is possible if improvements in health outstrip the adoption of family planning practices (Lucas and McMurray 1986).

Table 2.4 Population forecasts, 1985-2000 ('000)

	Population in year		Implied annual growth rate
	1985	2000	
Fiji			(%)
Ahlburg	703	908	1.71
UN	684	821	1.22
Tonga			
Ahlburg	106	129	1.31
UN	110	140	1.61
Western Samoa			
Ahlburg	163	183	0.77
UN	164	182	0.69
Solomon Islands			
Ahlburg	270	490	3.97
UN	279	457	3.29
Vanuatu			
Ahlburg	135	221	3.29
UN	141	223	3.06
World	n.a.	n.a.	1.5
Africa	n.a.	n.a.	3.1
South Asia	n.a.	n.a.	1.8
Oceania	n.a.	n.a.	1.3

Sources: Ahlburg (1985), United Nations (1985).

Based on these forecasts, Fiji, Tonga and Western Samoa are expected to experience rates of population growth at or below the world average. However, the rates of growth of population predicted for Vanuatu and Solomon Islands are more than twice the world average and exceed even the rates predicted for Africa.

If the countries under study are currently experiencing problems in development associated with population growth, there will be no reduction in these problems. In fact, evidence exists for several countries that these problems may increase.

Population and the overall rate of economic growth

The average rates of growth of real GDP, real GDP per capita, and population for Fiji, Solomon Islands, Tonga, Vanuatu and Western Samoa are shown in Table 2.5. No clear pattern of association - positive or negative - emerges. This implies that population growth has counterbalancing positive and negative impacts on output, or that factors other than population affect the growth of output and these were sufficient to compensate for the negative effects of the growth in population. That is, population growth over the 1970s in these countries was not so great that it caused a fall in real GDP or real GDP per capita. This, of course, is not to say that economic growth would not have been higher if population growth had been less.

Table 2.5 Population growth and economic growth rates for five Pacific island nations (per cent)

	Fiji	Tonga	Solomon Islands	Vanuatu	Western Samoa
	Average annual rate of growth of real GDP				
1970-74	6.5	3.2	4.1	..	..
1975-80	4.1	1.2	10.4	..	3.7
	Average annual rate of growth of real GDP per capita				
1970-74	4.0	2.1	..	0.4	..
1975-80	1.7	-0.1	2.7	5.8	..
	Average annual rate of growth of population				
1970-74	2.0	0.5	3.4	3.4	1.1
1975-80	1.9	1.9	3.3	2.7	0.8

Sources: Ahlburg (1985); ADB (1984); ESCAP (1984); SPC (1982).

To see if there was any evidence of an association between population size, growth or density and economic development in the South Pacific region, rank and zero-order correlations were calculated between various demographic measures and GNP per capita and government expenditure per capita for seventeen member nations of the South Pacific Commission for the late 1970s. Rank-order correlations are shown in Table 2.6. Although most correlations between the demographic measures and the development measures are negative, none is statistically significant. Thus, for the seventeen member countries of the South Pacific Commission there is little evidence of association between population and economic development in the late 1970s.

Table 2.6 Rank-order correlations between population and economic development: 17 South Pacific nations

	GDP per capita	Government expenditure per capita
Population growth	-0.152 (0.280)	-0.320 (0.105)
Population size	0.066 (0.400)	-0.191 (0.231)
Population density	-0.135 (0.316)	0.027 (0.459)
Rate of natural increase	-0.103 (0.347)	-0.145 (0.289)
Dependency ratio	-0.250 (0.166)	-0.031 (0.453)

Notes: Figures in parentheses are probability values.

Data on which these calculations and all other rank correlations are based are from SPC (1982).

The final piece of evidence examined in this section is the set of results from a vector-autoregressive model of economic growth and population for Fiji over the period 1956-83. The results of this model suggest that population (whether in levels or changes) had a statistically significant negative impact on GDP (whether in levels or changes). However, GDP did not have any statistically significant effect on population. A lack of data prevented a similar analysis being undertaken for the other countries.

For the island nations of the South Pacific taken as a whole there does not seem to be evidence of a significant impact of population on economic development, at least in the 1970s. There is, however, some evidence of a negative effect of population on economic growth for Fiji over the longer period 1956-83.

A note on income distribution

If a child's future income is determined by his or her parent's income, and poor parents have more children than richer parents, then population growth from fertility worsens the distribution of income, the distribution of consumption, and the distribution of land. Even if age-earning profiles remain constant, a change in the age structure of the population towards the young will increase the inequality of income (since earnings are inversely related to age).

The only data found on income distribution in the countries under study were for Fiji. The data indicate a worsening in the distribution of income in Fiji from 1968 to 1977. In 1968 4.9 per cent of private income went to the bottom 20 per cent of the population. In 1972 this percentage was 5.1 and in 1977 3.7. The corresponding figures for the percentage of incomes going to the top 20 per cent of households were 48.2, 47.7, and 53.3 per cent. This development may reflect, at least in part, the rapid rate of growth of the population in the early 1960s (in excess of 3 per cent per annum).

The slower growth rate of population experienced in the 1970s is reflected in the decline in the proportion of the population less than 14 years of age (Table 2.13), and this demographic change may help improve the distribution of income in the future. Demography is, of course, only one factor affecting the distribution of income.

Population growth and land availability

Historically, interest in the link between population and economic growth centred on the relationship between population and limited natural resources, particularly land (Cheong and Lean 1982:13). Although the primacy once given to land no longer holds, land is still important to largely agricultural countries, particularly those such as Vanuatu and Solomon Islands whose development plans stress the role of agriculture.

The high rate of population growth experienced by the island nations has resulted in modest increases in persons per square kilometre (Table 2.7). However, more relevant figures are the number of persons per square kilometre of accessible land and of arable land. The increased pressure of population on land

Table 2.7 Population intensity in five Pacific island nations

Population density	Fiji	Tonga	Solomon Islands	Vanuatu	Western Samoa
Persons per square kilometre					
1970	28	126	6	..	50
1975	31	129	7	6	53
1980	35	139	8	10	53
Persons per square kilometre of arable land					
1960	254	457	315	600	220
1965	387	493	358	569	254
1970	356	..	408	560	268
1975	395	529	483	680	271
1980	428	606	570	780	284
1984	..	621	..	867	306

Sources: AID (1985); Cleland and Singh (1980).

Table 2.8 Index of food production per capita, five Pacific island nations, 1970-82 (base, 1969-71 = 100)

	Fiji	Tonga	Solomon Islands	Vanuatu	Western Samoa
1970	105	97	100	94	..
1975	54	116	92	93	88
1980	98	115	121	78	..
1982	106	100	126	81	..

Sources: ADB (1980); AID (1985).

resources is here seen to be much more dramatic. Increased pressure on agricultural land can be compensated for by technological progress but the evidence on this taken from the index of food production per capita is mixed (see Table 2.8). The Solomons and Tonga appear to have been able to compensate for increased population but Fiji and Vanuatu have not. This index,

however, is an imperfect measure of the effect of population or the productivity of land resources because many factors other than population influence food production.

In Vanuatu there is scope for an increase in arable land (Haberkorn 1985) and at present in Western Samoa there appears to be no absolute shortage (Walsh 1982:5). However, the growth of population in Tonga has meant that there is insufficient suitable land to meet the needs of those eligible for allotments. From 1966 to 1976 the percentage of males with allotments decreased from 42 to 35 per cent and is expected to fall even further (Tonga 1981:19). Some decrease in the size of allotments has occurred but further decrease could foster declines in production, the persistence of subsistence agriculture, and decreased growth of the monetized non-agricultural sector. In several other South Pacific economies, institutional arrangements over land ownership and title, and the implications they may have for leasehold provisions, have adversely affected the financing of the rural sector. Hogan (1986) points to particular problems in Fiji, Solomon Islands and Vanuatu.

As regards other natural resources Fiji, Solomon Islands and Vanuatu are considered to be well endowed while Western Samoa and Tonga are relatively resource poor (Fairbairn 1985:46, 49). The natural resources of the Solomons and Vanuatu, if they are exploited, will help these nations support their large rate of population growth.

Population and savings and investment

Data on savings and investment in the South Pacific are scarce. Table 2.9 reports what little data could be found. Gross fixed capital formation in Tonga and Fiji increased from 1970 to 1980 both in absolute terms and as a percentage of GDP (from 21 per cent in 1970 to 28 per cent in 1980 for Fiji and from 26 per cent in 1970 to 33 per cent in 1980 for Tonga). Capital expenditure by the government fell from 31 per cent of gross fixed capital formation in 1975 to 25 per cent in 1980 for Fiji but rose from 14 to 21 percent of gross fixed capital formation in Tonga. Over the 1970s real gross domestic capital formation per capita increased by 131 per cent in Fiji and by 34 per cent in Tonga. Over the same period real capital expenditure per capita by the government rose by 63 per cent in Fiji but fell by 17 per cent in Tonga. Solomon Islands and Western Samoa recorded very strong increases in real capital expenditure per capita by the government.

Although real gross capital formation is increasing, some concerns over the adequacy of fixed investment have been expressed. Fiji's Eighth Development Plan (1981-85) noted that the GDP share of construction, electricity and water had declined

from 9.7 per cent in 1970 to 6.2 per cent in 1979. This was interpreted as meaning that there had 'not been substantial expansion of the nation's capital or fixed assets upon which future development must depend' (Fiji 1980:7). Howlett (1982:77), quoting from the Solomon Islands National Development Plan (1980-84), wrote: 'if access to wage employment and social services is to be provided at present levels (which are far from satisfactory) in the 1980s and 1990s, we require as much investment in agriculture, forestry and fisheries in the next 10 years as has been achieved in the last 100 years'.

From the gross savings data in Table 2.9 it is clear that investment was not financed by domestic savings. The savings to investment ratio for Fiji fell from 0.7 in 1975 to 0.45 in 1980. For Tonga the corresponding ratios were 0.42 and 0.52. Although gross savings rose in both countries over the 1970s, real per capita savings in Fiji fell by 12 per cent between 1975 and 1980 but rose by 25 per cent in Tonga over the same period.

Table 2.9 Investment and savings in five Pacific island nations

	Fiji F$m	Solomon Islands SI$m	Tonga T$m	Vanuatu vatu m	Western Samoa tala m
Gross fixed capital formation[a]					
1970	34.8	..	3.037	..	..
1975	103.4	..	5.657	..	..
1980	249.7	..	13.582	..	..
Capital expenditure by government[b]					
1971	13.3	2.608	1.121	..	1.612
1975	31.7	4.781	0.814	..	9.290
1978	49.5	13.434	1.890	193	22.947
1980	63.0	20.000	2.879	364	33.764
Gross domestic savings[c]					
1972	19.3	..	..	..	..
1975	72.0	..	2.393	..	..
1980	112.7	..	5.872	..	..

Sources: [a]ADB (1984); [b]ADB (1984), ESCAP (1984); [c]Fiji (1980), Tonga (1981).

The shortfall between savings and investment was made up by inflows of foreign monies. Foreign grants in support of specific development projects have increasingly become the principal means

for financing development expenditures in many countries. Some of these countries have not been able to maintain recurrent budget contributions to capital development programs and have thus come to rely heavily on foreign aid projects and loans (SPC 1982). In both Fiji and Western Samoa the balance of payments and domestic fiscal needs are met by overseas borrowings and foreign aid. In Vanuatu it appears that aid has provided more funds than total revenue accruing to the government (Hogan 1986). In Solomon Islands the budget deficit approximates the cash budget allocation for development spending to which all financing arrangements are linked (ibid.). Thus, it seems that domestic capital formation is dependent upon foreign aid and, for some countries such as the Solomons and Fiji, increasingly on foreign borrowings. In 1983 debt repayments in these countries were about 10 per cent of export earnings, presenting no immediate problem.

This dependence is reflected in data on official unrequited transfers as reported in the balance of payments and figures on official development assistance (Table 2.10). These figures show an increased inflow of these funds from the early 1970s to the late 1970s and for Fiji and Western Samoa a significant increase in aid as a percentage of GDP. For Fiji aid rose from 0.8 per cent of GDP in 1975 to 2.8 per cent in 1980 while for Western Samoa the corresponding figures were 15.3 and 27.1 per cent. For Tonga and Solomon Islands aid as a percentage of GDP remained constant at around 25 and 13 per cent respectively. Aid per capita in 1980 was around US$154 for Tonga, Western Samoa, and Solomon Islands. For Fiji and Vanuatu it was US$53 and US$370 respectively. The average aid per capita for all OECD countries was US$247 per capita (SPC 1982).

There is considerable debate about the effect of foreign aid flows on domestic savings. Recent empirical work suggests that, although foreign aid increases total savings, it decreases total domestic savings, and, in particular, government savings (Kelly and Williamson 1984:56). Given the data at hand, it is not possible to test this proposition rigorously for the South Pacific nations. The only observation we can make is that while real per capita savings increased in Tonga between 1975 and 1980, real per capita aid decreased. In Fiji the opposite pattern was observed.

Table 2.11 reports rank correlation coefficients between official development assistance per capita for seventeen South Pacific Commission nations in the late 1970s and various measures of population and development. Countries with higher rates of natural increase, population growth, and dependency ratios do not receive higher levels of assistance per capita but larger nations do receive statistically significantly less aid per capita. That is, aid does not compensate for the larger population. Higher aid per capita was associated with statistically higher GDP and government expenditure per capita. It is not known whether this reflects higher expenditures on consumption or investment.

Table 2.10 Aid and remittances to five Pacific island nations (US$ million)

	Fiji	Solomon Islands	Tonga	Vanuatu	Western Samoa
Official unrequited transfers[a]					
1970	4.0	..	2	..	2.172
1975	5.0	8	10	29.7	3.890
1980	34.0	19	9	49.9	14.050
1982	28.0	..	17	34.1	12.340
Private unrequited transfers[a]					
1970	-4.0	..	..	..	3.023
1975	-5.0	2.0	..	0.2	3.080
1980	-2.0	1.0	..	0.3	18.740
1982	-3.0	..	..	..	18.630
Official development assistance[b]					
1978	25.86	26.68	9.66	18.75	19.90
1979	31.25	25.98	23.52	38.08	30.24
1980	33.74	35.23	14.93	43.32	23.94

Note: The figures for Tonga are total unrequited transfers (official plus private).

Source: [a]ADB (1984); [b]SPC (1982).

Table 2.11 Rank-order correlation coefficients between aid, population and development: seventeen South Pacific nations

	GDPC	GEC	Pop.	POPC	RNI	DR
Official development aid per capita	0.490 (0.023)	0.743 (0.001)	-0.483 (0.025)	-0.304 (0.118)	-0.249 (0.167)	0.068 (0.398)

GDPC = gross domestic product per capita
GEC = government expenditure per capita
Pop. = population
POPC = rate of growth of population
RNI = rate of natural increase
DR = dependency ratio

Note: Figures in parentheses are probability values.

Source: SPC (1982).

Table 2.12 Share of GDP and employment by industrial sector, five Pacific island nations (per cent)

GDP by industrial origin	Fiji			Tonga			Solomon Islands
	1970	1975	1980	1970	1975	1980	1972
Agriculture	24.2	19.9	22.3	55.7	50.1	38.5	67.7
Manufacturing	11.3	10.1	12.0	2.2	5.3	7.0	..
Mining	1.5	1.0	0.3	0.3	0.5	0.8	1.5
Electricity, gas and water	1.5	1.6	1.7	0.7	0.9	0.8	..
Construction	5.5	4.4	8.2	3.3	3.6	5.8	4.3
Trade	21.7	21.6	16.7	14.5	13.4	16.8	8.1
Transport and communications	7.0	8.4	9.8	2.9	3.7	7.7	4.9
Finance	13.0	16.3	12.6	6.1	7.3	6.7	0.7
Public administration	10.4	12.6	18.0	8.6	15.1	16.0	3.5
Others	4.8	5.3		5.8			9.3

Sources: ADB (1984); ESCAP (1984).

Labour force by industrial sector	Fiji	Solomon Islands	Tonga	Vanuatu	Western Samoa
1970					
Agriculture	47.6	..	74.0	86.1	66.9
Industry	18.6	..	3.3	6.9	7.2
Services	33.9	..	22.7	6.6	25.5
1975					
Agriculture	43.4	44.7	56.0	..	61.1
Industry	20.4	15.0	7.8	..	7.9
Services	35.9	40.3	36.2	..	30.5
1980					
Agriculture	39.4	..	..	81.5	..
Industry	22.4	..	..	8.4	..
Services	38.2	..	..	9.6	..

Sources: AID (1985); Haberkorn (1985).

As has recently been pointed out by Fairbairn (1985:58), reliance upon foreign aid for development expenditures is fraught with danger since 'while willing donors are likely to continue to be available, prospects for increased aid are not promising and indeed, the value of aid in real terms could decline markedly'. The figures presented in Table 2.10 show the increase in aid over the decade but also reveal its volatility, while the rank correlations in Table 2.11 show the association of aid with higher GDP per capita and higher government expenditure per capita. Given the uncertainty surrounding aid, Fairbairn recommends nations of the Pacific to turn increasingly to domestic sources for mobilizing development funds, although for the smaller nations the 'scope for achieving major increases from these sources is severely limited' (Fairbairn 1985:59).

Remittances from workers overseas are thought to represent a possible source of development funds. For Western Samoa remittances exceed official unrequited transfers and increased significantly over the 1970s despite speculations of declining emigration due to recessions in receiving countries. In Tonga, another nation with significant emigration, total unrequited transfers were constant over the late 1970s, possibly reflecting the impact of more difficult emigration, particularly to New Zealand. Remittances offer little scope as a source of funds in the other three nations. There is, however, some evidence to suggest that no matter how great remittances are they are not saved and are therefore not available for investment. Howlett (1982:78) and Connell (1983b:51) report that remittances are primarily spent on imported consumption goods and the church. This pattern seems to be common in developing countries. The World Development Report (World Bank 1984:101) concluded that investment of remittances in equipment and financial assets has been relatively small. In Western Samoa it seems there may be an inverse relationship between remittances and production. As remittances increase the motivation for agricultural production declines. A decline in remittances in 1982 prompted increased agricultural production (F.V. Sevele cited in Connell 1983c:42). Connell (1983b:52) also claims that in some areas of Tonga remittances have reduced the role of traditional agricultural production, resulting in the substitution of imported foodstuffs.

3 The impact of population growth on structural change in the economy and population distribution

Population and structural change in the economy

The usual pattern of progress in developing nations is a decline in the agricultural share of GDP and employment and an increase in the importance of industry and services in the modern sector. Rapid population growth in the rural sector was thought to produce a labour surplus which could be siphoned off into

productive employment in the modern sector. This view has been challenged by those who argue that population growth is a barrier to industrialization (Kelly and Williamson 1984; Cassen 1976). Population growth will, in general, not favour investment in the industrial sector for, although the size of the market increases, factor prices shift to bias investment towards the rural sector. Population growth increases the supply of labour, reduces its wages, and favours employment in the rural sector. Demand for food rises at the expense of the demand for urban manufactured goods and further favours investment in agriculture over investment in manufactured goods.

The data on GDP by industrial origin and labour force by industrial sector indicate that for Tonga and Fiji the usual pattern of development has occurred. Agriculture has diminished in importance in terms of value of output and employment. However, in both countries this development coincides with significant declines in the rate of growth of population. For Western Samoa the employment share in agriculture fell in the early 1970s along with the rate of growth of population. For Vanuatu there was little change in the proportion of the labour force employed in agriculture from 1967 to 1979, a period over which the rate of population showed no sign of declining.

On the basis of the evidence presented in Table 2.12 it seems that those countries with a relatively low and declining rate of population increase have also exhibited the usual pattern of development, with a decline in the importance of agriculture and a rise in the importance of industry and services.

Population growth and the age and spatial distribution of the population

Dependency ratios. Rapid population growth may result in a high proportion of those who must be supported by the potentially economically active population. This appears to be the case for all the countries under study, as shown in Table 2.13. The youth dependency ratio (the ratio of population 0-14 years to the population 15-59 years) in each country significantly exceeded the dependency ratio for Africa.

Several problems with the dependency ratio measure have been pointed out. First, children and the elderly participate in market and non-market production, especially subsistence gardening. For example, Howlett (1982:76) estimates the active labour market age in Western Samoa to be 10 years of age. This factor, it is argued, leads to the dependency ratio overstating the dependency burden. However, children and the elderly may be forced to participate in production because the dependency burden is so high, thus no bias may be present. If the high dependency burden in the islands forces children into the labour force at an

Table 2.13 Population dependency ratios in five Pacific island nations, 1970 and 1976

	Fiji	Tonga	Solomon Islands	Vanuatu	Western Samoa
1970					
Proportion of population 0-14 years	43.4	46.3	44.6	..	50.4
Proportion of population 60+ year	2.4	3.1	3.5	..	2.8
Youth dependency	80.0	91.5	85.9	..	107.7
Aged dependency	4.4	6.1	6.7	..	6.0
Total dependency	84.5	97.6	92.7	..	113.7
1976					
Proportion of population 0-14 years	41.1	44.5	47.8	45.4	48.2
Proportion of population 60+ years	4.0	5.1	4.8	4.4	4.5
Youth dependency	75.2	88.1	101.6	90.3	102.0
Aged dependency	7.4	10.0	10.4	8.8	9.6
Total dependency	82.6	98.1	112.0	99.1	111.6

	World	Africa	South Asia	Oceania
Youth dependency (1980)	60.8	87.5	72.9	47.2

Note: Second group of figures for Vanuatu is actually 1979.

Sources: AID (1985); United Nations (1985).

early age - for example Walsh (1982:103) cites the case of Vanuatu where a number of 12 to 14 year olds assist in agriculture - then government plans to extend primary and secondary education are made more difficult. The value of children in production must be weighed against expected returns from education.

The second problem with the dependency ratio is that in nations or regions with considerable outmigration of males and low participation rates of females, the dependency ratio is biased down. For example, the standard dependency ratio for Tonga shows a decline in the youth dependency ratio from 1970 to 1976. However, when only males are used in the denominator for the working-age population the youth dependency ratio is seen to rise (Walsh 1982:105). This reflects significant migration of Tongan males of working age and implies an increased burden of support on those that remain (unless full compensating remittances are received from the migrants). The same situation applies in Western Samoa (Bedford 1982:84).

Dependency ratios are not uniform across regions. In general, youth and aged dependency ratios are lower in urban than in rural areas. The urban and rural dependency ratios in 1976 were 64.6 and 82.1 (Fiji), 55.4 and 105.6 (Solomon Islands), and

77.2 and 109.8 (Western Samoa) (Bedford 1982:86). Even if we allow that the cost of supporting a child is lower in a rural area, the difference between the ratios shows great disparities in the regional distribution of dependency. Besides indicating a high current demand on resources for consumption, a high dependency ratio signals a high future demand for educational and employment opportunities.

Internal migration. The countries under study display disparate rural and urban dependency ratios primarily because of the age and sex selectivity of internal migration. For each nation 20 per cent or more of those enumerated in the last census were not resident in the region of their birth (see Walsh 1982) and the greater part of migration was rural to urban. For example, in Western Samoa 90 per cent of all net migration gains between 1971 and 1976 were in urban areas (Walsh 1982:88), while in Tonga the destination of 70 per cent of all migrants was Tongatapu (ibid.:107).

Adult males tend to dominate migration in most countries. In Fiji adults accounted for 73.6 per cent of migrants but only 58.9 per cent of the population. In Solomon Islands, as in all other nations except Fiji, male migration in the working-age group resulted in high masculinity ratios. For example, in the Western and Central regions of the Solomons and in Honiara the masculinity ratios (i.e. ratio of males to females) were 113, 117 and 148 respectively. In Western Samoa internal migration of those 15-29 years is male while that of those aged 30-44 years is predominantly female. In the aggregate, migration streams were more masculine than non-migrant populations, although less so than Solomon Islands. In contrast, in Fiji all migrant streams were female dominated (Walsh 1982:26) and have become more so since the 1960s. In 1965 the masculinity ratio of migration was 94.6. In 1976 the ratio was 85.2 for migrants and 102 for the population. Female migration is also increasing in Vanuatu. Between 1967 and 1979 migration to urban areas increased at a rate of 6.42 per cent per year for females and 4.21 per cent for males (Haberkorn 1985:12).

It is clear that the motivating factor behind these migration flows is the search for cash employment. In Fiji, the Central region had an exceptionally high in-migration rate (50.3) while the less developed regions, such as the Southern, had high out-migration rates (38.5) (Walsh 1982:26). In Solomon Islands the areas that lost population were those with limited opportunities for wage employment. In 1976 Malaita, with 31 per cent of the population, provided 53.6 per cent of all out-migrants while Honiara accounted for 46 per cent of all in-migrants. In addition, 68 per cent of male migrants were employed for wages or salaries in 1976 compared with only 13.6 per cent of non-migrants. For females, the respective proportions were 15.2 per cent for migrants and 3.2 per cent for non-migrants (Walsh 1982:62).

Unlike Fiji, job seeking appears to be a less important motive in female migration than in male migration, probably reflecting the lower incidence of job opportunities for women in the Solomons. However, while females dominate all migration streams in Fiji, males dominate the streams to more developed regions (Walsh 1982:27), implying that economic reasons are more important in male than in female migration in Fiji. In Vanutau the same patterns emerge. In 1967 47 per cent of migrants moved to urban areas while in 1979 53 per cent of migrants did so. The age distribution of migrants indicates that the search for employment was the motivating factor (Haberkorn 1985:12). However, it is not employment per se that seems to be important, but urban employment. In recent years there has been a decline in plantation migration from Paama and North Pentecost despite the certainty of finding employment compared to the increasing difficulty in finding urban jobs (Haberkorn 1985:26).

Because of migration flows responding to regional development diffferences, youth dependency ratios tend to be higher in the less developed regions, further hampering development efforts. For instance, in Fiji Walsh (1982:24) found an almost perfect inverse ordering between youth dependency ratios and levels of development. Ratios in 1976 were all lower in the more developed regions (65 to 82). In contrast, in the less developed regions, although ratios had also declined, they were still high (82 to 94).

Although the search for cash employment seems to dominate migration from rural to urban areas there are other factors supporting this flow. There are for instance marked urban-rural discrepancies in the provision of education, health and services which will be discussed in section 4.

Out-migration in search of urban employment seems to have led to rural labour shortages and disintensification of agriculture (Brookfield 1972) in some areas of the Pacific. In these areas the crop range has been reduced, more labour-intensive crops abandoned, less demanding new crops adopted and many traditional techniques of cultivation discontinued (Jones and Ward 1981:8). These trends appear to have affected agricultural yields in Fiji and Western Samoa and should be associated with the adoption of further labour-saving technology. Such adoption would further decrease the demand for labour, causing more out-migration, and still further labour-saving adaptations (Connell et al. 1976). These developments run counter to the expressed aim of several governments - Vanuatu, Solomon Islands and Tonga, for instance - to create rural employment opportunities, although they may result in higher labour productivity in agriculture.

External migration. Although emigration is a very important population 'safety valve' in Tonga and Western Samoa, and, to a lesser extent, Fiji, it is very difficult to find reliable data on

the size of the emigrant stream. Table 2.14 reports figures on external migration for Fiji, Western Samoa and Vanuatu. In general, net migration is taken to be the difference between total arrivals and departures. However, this measure is a quite imperfect measure of immigration as may be seen by comparing the official figures with those of Connell (1983c:32) for Western Samoa citizens. For example, external migration from Western Samoa in 1980 may have been a loss of 5229 or a gain of 315. The lower numbers reported by Connell are consistent with the reports of reduced immigration to receiving countries in the late 1970s due to recession (Walsh 1982:112), but are not consistent with the significant increase in remittances recorded in Table 2.10. Based on reported net migration figures, signifciant emigration from Fiji seems to have occurred from the mid-1970s while external migration from Vanuatu appears to be minor.

Table 2.14 Estimated net emigration from three Pacific island nations

	Fiji[a]	Vanuatu[b]	Western Samoa[c]	
			(a)	(b)
1970	-2382	..	..	..
1975	-4182	..	-2670	-2482
1976	-4355	-388	-1086	-1193
1977	-2700	-596	-1287	-2796
1978	-4070	162	-3628	1332
1979	-3859	-96	-5087	371
1980	-2831	-1830	-5229	315
1981	-3499	450	-142	-2108
1982	-3404	346	-964	283
1983	..	-142	-2429	..
1984	..	..	-4814	..

Sources: [a]Fiji (1980, 1985); [b]Vanuatu (1984a); [c](a) Western Samoa (1984), (b) Connell (1983c).

Some idea of the significance of the flow of emigrants can be obtained by comparing rates of natural increase with observed rates of population growth. In 1976 the rates of natural increase for Fiji, Tonga and Western Samoa were 2.5, 3.3 and 3.1 per cent respectively, while the observed rates of population growth were 1.6, 0.6 and 1.0 per cent respectively. In the absence of migration natural increase and population growth would have been equal. Over the intercensal period 1966-76, Tonga experienced annual population growth of 1.52 per cent. If net external migration had been zero this rate would have been approximately 50

per cent higher (Tonga 1981:104). Connell (1983b) reports estimates that one in four Tongans is abroad, and there are suggestions that the rate of emigration is increasing. It is therefore not surprising that Walsh (1982:110-11) concluded that emigration flows 'have had a more profound effect on the Tongan demographic and economic scene than internal migration'.

Based on recent estimates produced by the United Nations (1985:31), external migration is expected to remain a significant although declining factor. Polynesia is expected to lose 15.2 persons per thousand per year from 1980 to 1985. In 1995-2000 the loss is predicted to decline to 12.3 and in 2020-25 to 8.9. For Fiji the corresponding predictions are 6.5, 6.5, and 5.5 emigrants per thousand of population. Only Lebanon, Afghanistan and Surinam are predicted to lose more people than Polynesia.

External migration cannot be viewed as a response to population pressure per se. Emigrants respond to the same set of factors as internal migrants - especially better cash-earning opportunities. As such emigration tends to be excessively masculine and age-specific; so is internal migration. The same effects on dependency ratios occur and the comments made in the section on internal migration also apply to external migration. One key difference exists between internal and external migration. The former involves a spatial reallocation of labour, the latter a net loss of labour. While emigration may be seen as a safety valve for population growth in the short run, it is not without cost. External migrants tend to be self-selected. They are generally more highly motivated, more educated and skilled than non-migrants (Connell, 1983b:46). A study of emigration in Fiji in 1975 found that of those stating an intention to migrate permanently 10 per cent were professionals, 6 per cent technical and semi-professional, 12 per cent skilled office and lower management workers. Only 7 per cent were unskilled or retired (G.W. Jones, cited in Walsh 1982:30). Even in Solomon Islands where external migration is relatively low, concern has been expressed because migrants tend to be experienced skilled workers. This is particularly true in the construction and electrical trades (Connell 1983a:25). The emigration of such people may help explain the shortages of skilled labour that exist in many South Pacific countries.

A further loss is sustained by the sending country if the education and training of the emigrant was subsidized. In the past, when migration was circular, this loss was offset by the education and skills obtained overseas by returning migrants. However, evidence is mounting that overseas migration in the Pacific is changing from a circular pattern to one of permanent migration (see Walsh 1982 and the series of papers by Connell).

Urbanization. Migration has resulted in higher rates of growth of population in urban than in rural areas (Table 2.15).

With the exception of Tonga and Western Samoa, urban growth rates exceed the world average and for Solomon Islands and Vanuatu respectively approach and exceed the rate for Africa. The significant difference between the urban and rural growth rates has led to an increasing urbanization of the Pacific nations (see lower panel of Table 2.15). Urbanization, that is, the percentage of the population classified as residing in an urban area, has been of long-standing concern in Tonga (Connell 1983b:48). The Government of Solomon Islands in its National Development Plan (1980-84) (quoted in Walsh 1982:68) did 'not consider [urbanization to be] of great significance at the moment'; nor did Walsh (1982:90) for Western Samoa.

Table 2.15 Rural-urban average annual rates of growth in population (per cent)

	Fiji	Tonga	Solomon Islands	Vanuatu	Western Samoa
1966-76					
Rural	1.5	0.9	3.3	3.0	0.6
Urban	3.2	1.5	4.9	8.0	1.2
		World	Africa	South Asia	Oceania
1975-80					
Rural		1.3	2.1	1.7	1.7
Urban		2.6	5.3	4.1	1.6

Percentage of population urban

	Fiji	Tonga	Solomon Islands	Vanuatu	Western Samoa
1960	30.0	18.2	3.1	..	18.9
1965	32.6	21.3	5.4	..	19.3
1970	34.8	24.4	9.3	13.2	20.3
1975	36.8	26.0	9.0	..	21.5
1980	38.7	31.8	10.0	17.8	23.2
		World	Africa	South Asia	Oceania
1980		39.9	28.7	25.4	71.6
2000		48.2	42.2	36.8	73.1

Sources: AID (1985); World Bank (1980b); Bedford (1982), Vanuatu (1984a), United Nations (1985).

The problems associated with urbanization are well known: overcrowding; inadequate housing, water supplies and sewerage; landlessness; urban unemployment; and the emergence of various social problems. Population growth is commonly believed to be the cause of high rates of urbanization and a casual investigation of the data for the Pacific nations would seem to support this. For example, between 1960 and 1970 the population of Western Samoa grew in excess of 2 per cent per year and Apia grew in excess of 3 per cent per year. From 1970 onwards population growth fell below 1 per cent and the rate of growth of Apia between 1971 and 1976 fell to 1.2 per cent per year (Walsh 1982:88). Similarly in Tonga between 1956 and 1966, Nuku'alofa grew at a rate of 5.4 per cent per year while the national population grew at a rate in excess of 3 per cent per year. Between 1966 and 1976 Nuku'alofa's growth rate dropped to 1.7 per cent (Walsh 1982:112) as the overall rate of population growth dropped dramatically.

However, recent work by Kelly and Williamson (1984) challenged the assumption that rapid population growth is to blame for growing urbanization. In fact, they argue, rapid population growth decreases the rate of urbanization. Higher population growth increases the supply of labour, decreases its price, and increases the relative use in the sector in which it is used most intensively, that is, in agriculture. Higher demand for food associated with higher population growth reinforces this effect. While they give some role to the scarcity of agricultural land and inflows of foreign capital in increasing urbanization, the most important factors explaining urbanization are the terms of trade between urban-based manufactures and rural-based primary products and the more rapid rate of technological change in the modern, urban-based manufacturing sector than in the rural-based primary product sectors. The evidence on the cash employment related motivation of migration in the Pacific indicates that migration flows would be sensitive to changes in the urban-rural terms of trade. Kelly and Williamson also noted that domestic policies often distort relative prices in favour of urban areas and thus indirectly foster higher rates of urbanization.

Another key feature of Kelly and Williamson's model is the role given to urban disamenities. Urban land is in relatively inelastic supply and a rapid inflow of migrants creates disamenities (crowding, crime and so on), raises rents and relative urban-rural living costs, and inhibits migration to the towns. Thus the model incorporates 'natural limits' to urban growth. There is increasing evidence of rural disamenities in several South Pacific nations. Nuku'alofa is now the most densely populated urban area in the South Pacific with the exception of South Tarawa in Kiribati. This has resulted in significant sanitation and health problems (Maude 1973:176). Walsh (1982:68) reported that nearly 4000 people, or over 25 per cent of Honiara's 1976 population, were living in squatter settlements in 1980,

although, as previously noted, the government did not consider urbanization to be a significant problem.

It is therefore possible that the decline in urbanization reported by Walsh (1982) for all of the nations under study may not be associated with slowing rates of population growth but with an increase in urban disamenities and relative urban-rural prices associated with the Organisation of Petroleum Exporting Countries (OPEC) price shock of 1973. Connell (1983b:4a) has also observed that in Tonga 'the combination of limited urban services, the difficulty of obtaining urban land and extremely limited urban job opportunities may well have contributed to the slowing of rural-urban migration in the 1970s'. Emigration has partly reduced traditional concern over problems of urbanization. However, this optimism may be displaced, not because of the uncertainty over the future of emigration, but because of a move in the terms of trade favouring urban manufacturing leading to a resurgence of rural-urban migration.

It should be noted that, although population growth may not be responsible for urbanization - that is a higher percentage of the population classified as urban - it does lead to a larger absolute size of urban areas. Haberkorn (1985:23) estimated that if present levels of urban growth continue in Vanuatu the urbanization rate will increase by about 4 percentage points by 1994, but the populations of Port Vila and Luganville will double. Similarly, in Fiji the percentage of the population recorded as urban increased by about 4 percentage points between 1966 and 1976 yet the population of the Suva urban area increased by 46.8 per cent. Whatever the causes of urbanization and urban problems, population growth does increase the absolute size of the group afflicted by these problems.

Urban growth presents policy makers with a dilemma. Urban growth creates a demand for resources to improve urban housing and amenities. If these resources are committed, urban amenities improve, rents decline, and further in-migration is stimulated. However, resources for housing and urban amenities must be taken from other uses, possibly investment, thus decreasing development and urban job creation. If, however, urban problems are not attacked, disamenities may rise to such a level as to have severe social and political ramifications which may only be partly offset by the beneficial effects from the investment of funds in job creation rather than in housing and amenities.

Bedford (1982:92) noted that all towns in the region have a 'housing problem'; in most the critical issue is how to provide accommodation at a cost which people with very low cash incomes can afford to rent or purchase. He claimed that the failure to provide sufficient cheap accommodation has contributed to the emergence of juvenile delinquency. However, the provision of such accommodation may lead to an increase in migration. If the cause

of juvenile delinquency is lack of paid employment rather than crowded, unsanitary residential conditions' then funds would better be allocated to job creation rather than residential construction.

4 Population growth and human resources

As previously noted, Cassen (1976:807) remarked that what nations may need is 'more people who are healthy, educated, and employed' - not more people. That is, what nations require are human resources not population. Thus our concern is whether population growth, its size or distribution, have interfered with the South Pacific nations' ability to transform population into human resources or healthy, educated and employed citizens.

Population and health

Based on the mortality data reported in Table 2.3, it appears that the nations of the South Pacific are healthy by world standards. The crude death rate and infant mortality rates are either below or near the world average for 1975-80 and the life expectancy at birth is above the world average. Although all nations enjoy good health relative to the rest of the world those nations with the highest rate of population growth - Solomon Islands and Vanuatu - have higher mortality rates than the three nations with lower rates of population growth, as well as lower life expectancy at birth. In addition, Solomon Islands does not seem to have shown any marked improvement in mortality over the last several decades although Western Samoa, with a lower rate of population growth, seems to have made only modest gains in mortality decline over the same period.

Similar results are found in a large sample of South Pacific nations. Table 2.16 reports rank correlations between population, mortality, and various economic indices for seventeen South Pacific nations in the late 1970s. While none of the population measures were associated with statistically significant differences in crude death rates, countries which experienced high population growth rates experienced statistically significant higher infant mortality rates and lower life expectancy at birth.[4] Countries with larger populations tended to have lower life expectancy at birth and higher infant mortality rates, although these associations were significant only at about the 0.1

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[4]This could also reflect causality running from infant mortality to fertility and population growth because of the replacement and insurance effects: see Ahlburg (forthcoming).

level. More densely settled areas tended to have lower death rates and higher life expectancy, although again these effects were only significant at about the 0.1 level. This may reflect slight advantages in delivering health services in more densely settled areas. The negative correlation between population per doctor and population density (Table 2.18) is consistent with this argument and may reflect the fact that it is easier to obtain medical personnel for urban than for rural locations.

Table 2.16 Rank-order correlation coefficients between population, mortality and economic development, seventeen South Pacific nations

	Crude death rate	Life expectancy at birth	Infant mortality rate
Population growth	0.271 (0.146)	-0.583 (0.009)	0.571 (0.008)
Population size	0.202 (0.218)	-0.307 (0.124)	0.314 (0.110)
Population density	-0.305 (0.117)	0.296 (0.133)	-0.372 (0.071)
Rate of natural increase	-0.031 (0.454)	-0.211 (0.216)	0.181 (0.244)
Dependency ratio	-0.057 (0.414)	0.038 (0.445)	-0.025 (0.462)
GNP per capita	-0.607 (0.005)	0.644 (0.004)	-0.453 (0.034)
Government expenditure per capita	-0.705 (0.001)	0.735 (0.001)	-0.580 (0.007)
Official development assistance per capita	-0.630 (0.003)	0.512 (0.021)	-0.670 (0.002)

Note: Figures in parentheses are probability values.

Source: SPC (1982).

The crude death rate and infant mortality rate are significantly lower in those nations with a higher GNP per capita, government expenditure per capita, and official development aid per capita. Similarly, life expectancy at birth is higher in nations with higher values of these variables.

The patterns of mortality shown in Table 2.3 tend to reflect the pattern of population per doctor shown in Table 2.17. Fiji, with the lowest mortality and highest life expectancy, has the lowest ratio of population per doctor, while Vanuatu and Solomon Islands have the highest mortality and the highest ratio of population per doctor. While Cassen (1976:812) has criticized the use of population to doctor ratios as an indicator of health services since it 'places a false emphasis on the relative value of doctors and hospitals for health services, let alone health',

Table 2.17 Health indicators in five Pacific island nations, 1965-80

	Fiji	Solomon Islands	Tonga	Vanuatu	Western Samoa
Population per doctor					
1965	2367	5296	3125	3524	2886
1970	2122	4657	3909	3360	2840
1975	2215	7600	2853	5318	2600
Daily protein supply as a percentage of WHO minimum daily requirement					
1970	127.2	102.5	122.1	145.1	133.3
1975	139.8	105.3	154.9	187.2	124.8
1980	175.7	103.8	164.9	163.7	123.3
Daily calorie supply as a percentage of WHO minimum daily requirement					
1970	90.6	79.6	113.3	84.4	88.7
1975	94.9	79.0	120.9	87.7	82.4
1980	109.1	81.1	120.0	94.1	85.9

Source: AID (1985).

Table 2.18 Rank-order correlations between population and health indicators, fifteen South Pacific nations

	Population per doctor	Population per hospital bed
Population growth	0.673 (0.003)	-0.075 (0.404)
Population size	0.529 (0.021)	0.603 (0.015)
Population density	-0.346 (0.103)	0.049 (0.436)
Rate of natural increase	0.588 (0.011)	0.136 (0.331)
Government expenditure per capita	-0.735 (0.001)	-0.366 (0.109)
Official development assistance per capita	-0.704 (0.002)	-0.603 (0.015)
Crude death rate	0.652 (0.004)	0.078 (0.400)
Life expectancy at birth	-0.842 (0.001)	-0.140 (0.325)
Infant mortality rate	0.783 (0.001)	0.117 (0.352)

Note: Figures in parentheses are probability values.

Source: SPC (1982).

the positive pattern between the mortality rates and the population to doctor ratio is striking. This positive relationship between mortality and population is also evident in the larger sample of South Pacific nations. In Table 2.18 those nations with a higher ratio of population per doctor also have higher crude death and infant mortality rates and lower life expectancy at birth.

The pattern of mortality rates does not, however, correspond with the pattern of population per hospital bed, another often used measure of the delivery of health services. It is not clear whether this reflects the poor quality of the data on hospital beds, which fluctuate with the closing of hospitals for renovation and may or may not include folding beds depending upon the country or time period, or the lack of any impact of hospital beds on health. This lack of association between population per doctor and population per hospital bed is also reflected in data from fifteen member nations of the South Pacific Commission. In the late 1970s the simple correlation between these indicators of health delivery was 0.08. If the data are reliable these findings indicate the importance of the supply of qualified medical personnel over the supply of hospital accommodation.

Rank correlation coefficients between several population, economic, and mortality indices and population per doctor and per hospital bed for fifteen South Pacific nations in the late 1970s are shown in Table 2.18. Larger countries have a higher ratio of population per doctor and per hospital bed than smaller countries while those countries with the most rapidly growing population have a higher level of population per doctor. Financing is, of course, important in the provision of health services. In 1980 Western Samoa allocated 15 per cent of government expenditure to health, while Vanuatu allocated oly 10 per cent of government expenditures (Western Samoa 1984; Vanuatu 1984b). Population per doctor and mortality rates tended to be lower in Western Samoa than in Vanuatu (based on United Nations 1985 estimates for Vanuatu). For the fifteen nations of the South Pacific Commission for which we have data the same pattern is evident. Those nations with higher levels of GNP, government expenditure, and aid per capita tend to have significantly lower levels of population per doctor and per bed and lower mortality and higher life expectancy at birth.

The population effects on the provision of medical services and mortality and the effects operating through GNP, government expenditure and aid appear to be separate. Although the population measures and the economic measures both have significant impacts they are not themselves significantly related (as shown in Table 2.6). It seems that population growth increases the demand for doctors more than GNP, government expenditure, and aid can increase the supply, resulting in higher mortality, particularly infant mortality, and lower life expectancy at birth.

There are significant urban-rural disparities in the provision of health services in South Pacific nations. In Tonga over the period 1966-76 the number of hospital beds increased 36 per cent in urban areas and only 17 per cent in rural areas. The respective figures for doctors were 62 per cent and -22 per cent (owing to a loss of two doctors). On a per capita basis the rural

disadvantage was not as great (Walsh 1982:118). In Fiji in 1978 about 38 per cent of the population was urban, whereas urban areas accounted for 65 per cent of hospitals and 85 per cent of hostpial beds (ibid.:39). The same pattern was found in Vanuatu. In 1981, although only about 20 per cent of the population lived in urban areas, 82 per cent of doctors, 56 per cent of nurses, and 30 per cent of nursing aides were located in urban areas (Vanuatu 1981).

Mortality levels in Tonga and Western Samoa have been linked to poor nutrition (Connell 1983b and c; Kane and Lucas 1985). As shown in Table 2.17, in Western Samoa the daily calorie supply as a percentage of the WHO requirement is very low, indeed significantly less than the 97 per cent figure recorded for all low-income nations in 1981 (World Bank 1984:264) and has fallen slightly since 1970. However, in Tonga the minimum calorie intake is exceeded and has increased over time. Fiji has also shown significant gains in daily calorie supply. While Solomon Islands and Vanuatu recorded gains over the 1970s they still remain below the WHO minimum requirement, with the Solomons considerably below the requirement. All countries exceed the daily protein intake, although Solomon Islands is again far below that of the four other nations under study. Temporal variations in protein supply are the same as those in calorie supply. Variations in protein and calorie supply correspond to those in the index of food production (Table 2.8) for Fiji and Tonga but not Vanuatu and Solomon Islands. The lack of closer correspondence between the nutrition indices and food production could reflect the substitution away from indigenous food sources to less nutritious imported substitutes. In 1977 imports of food, drink and tobacco accounted for around 20 per cent of imports in Fiji, Vanuatu and Solomon Islands and 33 per cent in Tonga and Western Samoa (Connell 1982:5). This substitution places extra stress on cash sources of income for families and on the nation's balance of payments. Evidence from several studies in the region suggests that malnutrition is (or is becoming) an important factor in infant and child mortality and low learning capacity of children (Ward and Hau'ofa 1980:42-6). High fertility and high levels of youth dependency coupled with insufficient creation of cash-earning employment opportunities exacerbate this problem.

Water and sanitation

Access to safe water and adequate excreta disposal are important inputs to the health of the population and, in particular, as significantly related to infant mortality (Da Vanzo 1985). The rapidly growing nations of Vanuatu and Solomon Islands have relatively low levels of access to these. (Although 56 per cent of Vanuatu s population have access to running water no data are available on its reliability or adequacy.) Western Samoa also

has a low level of access to safe water but reportedly total access to adequate sanitation. These data are reported in Table 2.19.

Table 2.19 Access to safe water and excreta disposal, five Pacific island nations (per cent)

	Fiji	Solomon Islands	Tonga	Vanuatu	Western Samoa
Population with access to safe water					
Urban	83	95	74	64	100
Rural	62	34	58	35	23
Total	69	31	61	56	43
Population with access to adequate excreta disposal					
Urban	100	94	97	..	100
Rural	93	20	83	..	99
Total	96	26	92	25	99

Sources: AID (1985); Vanuatu (1981).

The nations under study display marked urban-rural disparities in access to safe water and sanitation. Although urban areas are more adequately serviced, there are signs that the coverage may decline with the rapid rates of urban growth shown in Table 2.15. In Vanuatu's First National Development Plan (Vanuatu 1981:289), doubts were expressed about the sufficiency of water supplies if Port Vila expanded any further. Since there are no major plans for upgrading water and sanitary facilities in Vanuatu, rapid population growth will further decrease the access to safe water and sanitation.

The urban-rural differences in this reflect, in part, marked regional disparities in the distribution of government expenditures. The regional distribution of government expenditures for Tonga in 1979 are shown in Table 2.20. It is clear that Tongatapu and 'Eua receive a share of government expenditure that is disproportionately larger than their share of population or their contribution to GDP. These inequities lead to differences in urban-rural standards of living which have been shown to contribute to rural-urban migration and problems associated with urbanization.

Table 2.20 Regional distribution of government expenditure in Tonga, 1979

Region	Percentage of population	Percentage GDP	Percentage primary production	Expenditure on		
				Power and water	Transport, communication	Community, social and personal services
Tongatapu and 'Eua	68.7	76	80.6	94.4	93.0	84.9
Vava'u	16.7	14	11.0	5.0	5.4	14.0
Ha'apai	12.0	8	5.9	0.6	1.5	8.0
Nivas	2.6	2	2.5	-	0.1	2.1

Source: Tonga (1981:95-6).

Health and population

Some researchers have pointed out a possible policy dilemma associated with health expenditure. Health expenditures decrease mortality, morbidity and debility. Mortality reduces the size of the population and labour force, morbidity reduces the number of hours of labour supplied, and debility affects the quality of the hours of labour supplied. Morbidity and debility also have an influence on savings since a decrease in morbidity and debility result in a lower demand for medical care and thus higher personal disposable income and savings. To the extent that health expenditures decrease mortality, morbidity and debility (see Barlow and Davies 1974 for evidence) they will lead to high economic growth by increasing the size and quality of labour inputs.

Health expenditures may, however, also lead to increased population growth as child mortality declines and fertility rises through a reduction in miscarriages, and thus offset to some extent the gains made in per capita income. This effect does not persist in the long run because declines in infant mortality and the general level of mortality are associated, in turn, with a decline in fertility as replacement and risk factors become less important. Thus the question of whether health expenditures lead to higher or lower income per capita depends upon which effect dominates.

To help resolve this question Moreland (1982) simulated a successful community health campaign (a 1 per cent growth rate per year in life expectancy) for a representative developing nation. He found that although life expectancy was 21 per cent higher (70 as opposed to 58 years without the health campaign) there was relatively little economic or demographic impact. The rate of population growth after 30 years of the policy was 2.46 per annum versus 2.23 without it and income per capita was 0.5 per cent higher. He concluded from these simulation results that there may be no policy dilemma with improving health and sanitation facilities. Short-run increases in population growth are counterbalanced by improvement in labour quality and a longer-run decline in fertility.

Population growth and education

In many models of development, such as those of Moreland (1982) and Anker and Knowles (1983), the main effects of education are on fertility and mortality and, indirectly through them, on output. Education is inversely related to the number of children desired (Cochrane 1979) and positively associated with greater access to and use of contraception and other components of population control (Bulatao 1984; Behrman and Wolfe 1984). In addition, Wheeler (1984) has shown that family planning programs are more effective the higher the level of education, particularly female education. Education has a larger negative effect on fertility the higher the prevalence of family planning programs. Thus education may increase income per capita by decreasing fertility and thus the rate of population growth. This effect may be offset somewhat by the fact that education is also associated with lower levels of infant mortality (Da Vanzo 1985).

Evidence exists that this effect may also be present in South Pacific nations. The 1974 World Fertility Survey of Fiji revealed an inverse relationship between education and the number of children desired. Fijians with no schooling desired 3.6 children while those with secondary or higher desired 3.3 children. For Indo-Fijians the respective figures were 4.9 and 2.1 children (Hoefnagel 1978:21). Similarly, for Tonga, a survey carried out in Nuku'alofa showed that women 15 years and older with no education, primary education, some secondary education, secondary education, post-secondary diploma, and university education had 4.5, 5.3, 4.0, 3.3, 2.6, and 2.1 live births respectively (Walsh 1982:113).

Fiji, Tonga and Western Samoa had a higher percentage of children enrolled in school, particularly in secondary school, than did Solomon Islands and Vanuatu. The low level of education in Vanuatu may be inferred from the fact that only 13.5 per cent of the labour force had any formal educational qualification (9.1 per cent had primary schooling, 1.8 secondary, 0.4 per cent higher education and 2.2 per cent vocational or technical schooling: Vanuatu 1981:103). Fiji, with the highest level of school enrolment, had a high level of contraceptive acceptors: 32 per cent of Indo-Fijians and 11 per cent of Fijians (T. Bavadra, cited in Kane and Lucas 1985). This represents a significantly lower level than that found in the 1974 World Fertility Survey (56 per cent). In Western Samoa the acceptor rate was between 11 and 15 per cent and growing slowly, while in Tonga the rate stood at 30 per cent of eligible women using contraceptives. In Solomon Islands and Vanuatu the contraceptive use rate is lower, in the order of 7 to 23 per cent (Kane and Lucas 1985).

Thus for the nations under study education appears to be inversely related to desired fertility, positively associated with contraceptive use, and negatively associated with fertility and

population growth. Thus the expansion of education should be associated with declines in population growth. This appears to be true for both Fiji and Tonga where the growth of education from 1966 to the early 1980s was associated with a declining rate of population growth.

Education can, however, have a very significant impact upon GDP per capita by increasing individual productivity rather than by simply decreasing population growth. The productivity of educated labour is greater than that of uneducated labour and that of uneducated labour declines as development proceeds (Wheeler 1984). In addition, education fosters the further training of individuals and this development of human resources, or human capital accumulation in the form of skill formation has been shown by Kelly and Williamson (1984) to have a significant positive impact on economic development.

The development of skilled labour is important for growth in the manufacturing sector and the modern service sector (electricity, gas, water, transport, communications, defence, education, urban housing, and other government services), which is considered by Kelly and Williamson among others to be a leading growth sector. Population and the government contribute to the stock of skilled labour by influencing the 'stock of potential trainables', but skilled labour will not be produced by firms unless the rate of return to the firm exceeds that of other uses of its funds. Skilled labour is complementary to capital and rapid capital accumulation raises the demand for skilled labour relative to that of unskilled labour (which tends to generate earnings inequality). Wheeler (1984) also found that low levels of school enrolment were associated with low levels of managerial performance which reduce the contribution of capital to economic growth.

Education, therefore, can have a positive effect on economic growth, but individuals and firms must be assured of a good rate of return to investment in education and training to be willing to undertake such investments.

Mason and Suits (1984) modelled these impacts of education on development for a representative developing nation and found that the long-run role of education in reducing fertility and checking population growth was at least as important as, if not more so than, its direct contribution to productivity. They also emphasized that just looking at education's role in improving the quality of labour underestimates the contribution of education to economic development. In the short run education withdraws young workers from the labour force and decreases GNP per capita. It also decreases fertility and population growth and improves the productivity of labour, all of which increase GNP per capita. These increases in GNP then feed back into the economy, increasing savings and investment. It is these indirect effects of education

that are often overlooked. In their simulation Mason and Suits (1984:21) compared an economy in which no improvement in education occurs with one in which primary enrolment rates rose from 79 per cent to 99 per cent, secondary enrolments from 25 per cent to 99 per cent, and tertiary enrolments from 2 per cent to 8 per cent. When no improvement in education occurred GNP per capita increased by 2.8 per cent per year. When enrolment increased, GNP per capita grew at 3.8 per cent per year; thus education contributed about 25 per cent of annual growth in GNP per capita. Accumulated over 100 years of the simulation, the contribution of education made GNP per capita three times as high at the end of the period as in the case of no additional educational attainment. The internal real rate of return to investment in education was estimated to be about 9 per cent.

Given the potential positive contribution education can make to economic development, is there any evidence that population growth in the South Pacific has impeded investment in education and training? From Table 2.21 it is clear that those nations with the lowest rate of population growth also have the highest level of school enrolment and literacy. For all low income countries primary and secondary enrolment rates in 1981 were 94 and 34 per cent respectively (World Bank 1984:266) while rates of population growth (1970-82) were 1.9 per cent per annum. Western Samoa and Fiji matched the level of primary enrolment and considerably exceeded the level of secondary enrolment, while population growth rates were respectively lower than and equal to the level for all low income countries. Solomon Islands, with population growth about 70 per cent higher than that for all low income countries, had a primary enrolment rate that was 22 per cent lower and a secondary enrolment rate that was 76 per cent lower than that for all low income countries.

Table 2.21 School enrolment rates in four Pacific island nations, 1966-81 (per cent)

	Fiji[a]		Solomon Islands[b]		Tonga[b]		Western Samoa[c]	
	Primary	Secondary	Primary	Secondary	Primary	Secondary	Primary	Secondary
1966	83	38	..	..	..	..	66	76
1971	..	..	..	..	..	..	83	44
1976	96	60	73	8	77	39	88	54
1979	96	68	..	..	..	..	..	..
1981	..	..	..	..	..	..	89	65

Sources: [a]Fiji (1980); [b]ADB (1980); [c]Western Samoa (1984). The primary enrolment rate is a simple average of numbers given for those 5-9 and 10-14 years of age.

For nine South Pacific nations for which education data are available there appears to be a positive association between those with a higher percentage of the population with no education and population size and growth. Population size and growth also seem to be associated with a lower percentage of the population having secondary schooling. Little effect is found for primary schooling, probably because of the inverse association between percentage with secondary as highest qualification and percentage with primary as highest qualification (Table 2.22).

Table 2.22 Rank-order correlation coefficients between population and education

	No education	Primary	Secondary
Population growth	0.442 (0.117)	0.187 (0.315)	-0.576 (0.052)
Population size	0.570 (0.054)	0.150 (0.350)	-0.383 (0.154)
Rate of natural increase	0.457 (0.108)	-0.251 (0.257)	-0.176 (0.326)
Dependency ratio	-0.167 (0.333)	-0.689 (0.020)	0.437 (0.120)

Note: Figures in parentheses are probability values.

Source: SPC (1982).

Although most of the developing world expanded education from 1960 onwards (from 2.3 per cent of GNP in 1960 to 3.9 per cent in 1974, and from 11.7 per cent to 15.1 per cent of government budgets), relative spending on education fell after 1975. The quality of schools and teachers declined, with poor students suffering most from diminishing quality. Evidence is scanty on the quality of education in the South Pacific. Pupil/teacher ratios in both primary and secondary school have been relatively constant since 1960 in Fiji (AID 1985). Expenditure on education as a percentage of government expenditure remained constant at slightly over 30 per cent between the mid-1970s and 1980 in Vanuatu (Vanuatu 1981), but fell from 12 per cent in 1975 to 9.8 per cent in 1982 in Western Samoa (ADB 1984). However, figures from the Government of Western Samoa (1984) place the allocation to education at 16.9 per cent in 1980 and 23.0 per cent in 1984.

Although Tonga has lower enrolment rates than Fiji and Western Samoa, some improvement is evident. In 1977 there was one

junior high school student to every 4.9 primary students. By 1982 this ratio had improved to 1:39. The corresponding ratios for senior secondary to primary were 1:55.9 and 1:26.8 (Tonga 1981). Severe problems nevertheless remain. In the Third Development Plan $4.1 million was targeted for gross capital formation in education but only $1 million was spent. Particular problems were found in getting qualified secondary school teachers. These problems also affect the regional distribution of education. In 1976 31 per cent of urban children were enrolled in secondary school while the figure for rural children was 24 per cent. Tonga saw the low educational level of the employed population as a serious bottleneck in development (Tonga 1981:111).

While the benefits of education have been stressed there are also some problems associated with its expansion. As Bedford (1982:91) has noted, education can produce a conflict between individual goals and national needs. Parents and students want schooling that will provide a qualification for salaried employment in the town while planners and politicians see urgency in preparing the young for rural employment. For example, Haberkorn (1981) found that only 16 per cent of boys and 17 per cent of girls in final year secondary school in Tongatapu wished to stay and work in a village. In Ha'apai the corresponding figures were 13 and 30 per cent. A real potential for conflict exists because the recent development plans of Fiji, Vanuatu and Solomon Islands mention tailoring of curricula to the manpower needs of the nation and a focus on generating rural employment.

Another problem is associated with migration. There is a clear association between the level of completed education and the propensity to migrate (Todaro 1976:370). Thus, as the countries of the region expand education, they will probably also experience higher levels of rural-urban and external migration. Such a consequence is in conflict with stated development goals.

On the basis of the evidence it appears that those nations with lower rates of population growth also have higher rates of school enrolment, and that this inverse relationship also holds up over time for Fiji and Western Samoa. However, we do not know whether slowing population growth allowed the expansion of education or expanding education led to a decrease in fertility and population growth. It is likely that both took place.

The population pressure on the demand for education should ease for Fiji, Tonga and Western Samoa as the proportion of the population aged 6-17 years continues to decline. However, for Vanuatu and Solomon Islands the reverse is true and educational needs will place a significant demand upon limited budget resources. Recent calculations by the World Bank indicate that these demands can be significantly reduced by a lowering of fertility rates. The potential for cutting educational costs through lower fertility is largest for those countries with the

highest fertility rates. For example, World Bank estimated that Burundi and Ethiopia with Total Fertility Rates (TFR) of 6.5 could save 25 per cent of their educational spending by 2000 and 60 per cent by 2015 by imposing immediate restrictions on fertility. In Korea, with a TFR of 3.0 in 1981, such a fertility decline would save only 12 per cent and 1 per cent of educational expenditure by 2000 and 2015, respectively (World Bank 1984:86).

Population and employment

Even if a program of rapid fertility decline were initiated immediately, the growth of the working-age population is fixed for 15 or 20 years. While the addition of young workers 'imbued with more modern attitudes, skills and adaptability' (Cassen 1976:808) should increase the average productive quality of the labour force and thus the growth of output per capita, their attitudes depend upon the success of the economy in educating, training and employing its growing population.

Labour force growth and the provision of capital

For incomes to rise in the nations of the South Pacific the stock of physical and human capital must grow at the same rate as the labour force. If each worker has less capital to work with, productivity and incomes will fall. We have already seen that there appears to be a negative relation between population growth and educational attainment in the South Pacific but the picture of physical capital is incomplete because of the lack of good data.

Investment per potential new worker gives us some indication of the investment position of countries. In 1980 Fiji and Tonga had $US51.38 and $US14.45 thousand in gross fixed capital formation per potential new worker.[5] This position compares with $4.70 in Kenya, $10.66 in Thailand, and $29.85 in Korea. However, the corresponding figures for Australia, Japan and the US were $219.35, $535,04, and $188.99. The industrialized nations were able to achieve such high ratios because of a combination of low rates of growth of labour force and higher GDP per capita. In general the World Bank found that countries facing the fastest growth in their working age population tended to have the lowest absolute levels of investment per potential new worker (World Bank 1984:87).

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[5]These calculations are based on the gross fixed capital formation figures from Table 2.9 converted to US dollars by the average exchange rate for 1980 (ADB 1984), divided by the number of new workers in 1980. For Fiji the number of new workers is calculated by multiplying the 1980 labour force by the growth rate in the Fijian labour force (Fiji 1980). For Tonga the number of new workers is the number expected to enter the labour force each year of the current plan (Tonga 1981:112).

Job creation in the monetary sector involves substantial investment costs. A recent estimate for Solomon Islands (Howlett 1982:77) sets the cost of capital investment required for each job at about $10,000. If this estimate holds for all countries in the region then Fiji and Tonga appear to be adequately placed to finance such job creation. Solomon Islands also appears to be able to finance new job creation but in Vanuatu this does not seem possible. In 1976 8.6 per cent of the population of the Solomons were engaged in paid employment. Assuming this ratio remains constant over the 1980-85 period, 3612 new cash-employment jobs will be required. At $10,000 each this requires investment of $7.224 million per year. In 1980 government expenditure on capital was $24.193 million. In contrast, Vanuatu will produce between 2.5 and 2.9 thousand new formally educated workers per year between 1980 and 1986. Job creation will cost between $25 and $29 million per year while government expenditure on capital in 1980 was $5.26 million. Note that these calculations hold only for formal cash employment. With increasing education and expectations it is expected that the demand for cash employment will increase at an even greater rate than in the past. In addition, there are other significant demands on scarce private and government funds besides those for creation of new formal sector jobs.

Population growth, employment and unemployment

Even if a nation appears to have sufficient funds to finance the creation of new jobs, this does not ensure that job creation will take place. In the private sector the expected return from job creation must exceed its costs and in the public sector job creation must be a conscious policy choice. From available data it is not clear that an incentive to create sufficient jobs exists even in those nations where the financial ability to do so may exist. For example, in Fiji wage and salary employment grew by 7.1 per cent per annum over the period 1968-73 but slowed significantly to 2.7 per cent per annum in 1976-79 (Fiji 1980). The demand for jobs will continue to increase as the percentage of the population 15-64 years of age will increase from 60 per cent of the population to 65 per cent in 2000 (United Nations 1985:508). The Seventh Development Plan indicated that the 'manpower needs of the economy cannot cope with the large number of academic school leavers' (quoted in Walsh 1982:40). The result of supply exceeding demand has been unemployment, particularly for the young. In 1976 three out of four people classified as unemployed were young inexperienced workers aged 15-24 years, of whom 17 per cent were men and 39 per cent women (ibid.).

The position in Tonga appears to be similar. In 1976 41.6 per cent of urban and 31.9 per cent of rural males aged 15-19 years were classified as unemployed while the corresponding figures for those aged 30-34 years were 10.8 and 8.8 per cent

(Walsh 1982:12). In Western Samoa there was a 2.7 per cent rate of growth in paid employment from 1971 to 1981, although the rate dropped over the second half of the period to 2.4 per cent per year. The supply side of the labour market was aided, at least in the short run, by a 6.1 per cent per year increase in full-time school attendance among children aged 15-19. This helped reduce the unemployment situation (Western Samoa 1984:21). However, in the latest development plan it has been recognized that 'employment expansion is becoming increasingly urgent because of the need to accommodate the annual crop of school leavers' (Western Samoa 1984:13). In Solomon Islands a 'considerable increase in the number of young people seeking employment [is expected]. If present trends continue Solomon Islands is likely to witness chronic job shortages and accelerated internal migration' (Walsh 1982:73). Similarly, wage employment in Vanuatu will probably not grow at a rate sufficient to absorb the output of secondary school leavers and 'Vanuatu may soon face the [problem of the] absorption of increasing numbers of educated persons' (Vanuatu 1981:111). Given the increasing desire for urban cash employment it is not at all clear that these individuals will be absorbed or can be absorbed by subsistence agriculture. Unless governments create sufficient jobs, unemployment rates will rise. Western Samoa has a policy of reducing government employment while Tonga plans to create some government jobs but looks to the private sector for the bulk of new jobs.

Cassen (1976:811) argues that population growth is not responsible for unemployment. That responsibility lies with 'inadequate access to public services, education and productive assets; with technological choices, fiscal policy and the pattern of demand for goods and services'. These in turn, he argues, depend upon power structures, the distribution of income and the international economic order. However, we have also seen that some of the causes of unemployment listed by Cassen are affected by population growth.

Population growth and job creation in agriculture

All nations in the region have stressed the need for the creation of rural employment opportunities to absorb increases in the labour force. In theory population growth assists this objective. Population growth lowers wages and with the high investment cost per worker in industry, makes it difficult for a developing country to produce sufficient industrial jobs to meet the growth in the labour force. Consequently, agriculture is the sector where jobs will be generated. The agricultural sector also absorbs a larger share of investment to maintain productivity and output of food and other commodities demanded.

However, there appear to be certain developments that have interfered or may interfere with the absorption of labour by agriculture. Jayasuriya and Shand (1983) cite evidence from South

and Southeast Asia that new labour-saving chemical and mechanical innovations are being rapidly adopted by farmers in this region because of their cost-reducing characteristics. It is suggested that the higher economic efficiency of the innovations at given factor prices and direct and indirect government policies that have lowered the real price of capital to farmers explain the adoption of labour-saving technologies.

In Fiji the government has noted 'the too rapid mechanisation of productive processes using imported machines and displacing local labour' (Fiji 1980:18). Jones and Ward (1981:8) also cite evidence of a shift away from labour-intensive crops and techniques associated with labour shortages stemming from out-migration.[6] The adoption of such labour-saving technologies and crops is in direct conflict with governments' aims for rural employment creation.

In agriculture a trade-off has developed between cash-cropping and subsistence agriculture. With rapidly increasing returns to certain cash-crops in the 1970s - particularly coffee and cocoa - cash-cropping increased. In the absence of an international price support system domestic governments have established national stabilization funds which insure producers against price falls (Connell 1982:12) and tip the terms of trade between cash-cropping and subsistence in favour of cash-cropping. This may be good for export earnings but not for job creation and food supply. This conflict is evident in Western Samoa's Fifth Development Plan in which the government plans to 'encourage the formation of large scale commercial plantations using modern management techniques capable of generating large export surpluses' (Western Samoa 1984:14).

The institutional arrangements over land ownership and title, which can range from class or lineage control to individual ownership, pose a further problem to job creation in agriculture. Hogan (1986) has shown that in each country under study problems of land ownership have adversely affected financing of the rural sector. In addition, financing of agriculture by Vanuatu's Development Bank has been reduced significantly, most probably because by the end of 1983 about 38 per cent of loans were in arrears.

Governments' stated plans to increase education also appear to be in conflict with plans to increase agricultural employment. Even if jobs could be created in agriculture it is not clear that new educated entrants to the labour force would be willing to

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[6] Hoefnagel (1978:14) estimated that the exploitation of land in Aituaki, Cook Islands, was only one-third of the level observed in the 1950s. In addition, shortages of root crops had occurred. He attributed these developments to emigration.

accept such jobs. Education fosters a demand for urban cash employment jobs (Haberkorn 1981) and average rural per capita cash incomes are estimated to be less than 25 per cent of the average in the urban wage sector (Sevele 1979:29).

Thomson (1976:164) wrote that 'the agricultural sector has without doubt failed to provide the necessary impetus for greater development in the [Pacific] region'. Unless governments confront the issues of incentives to adopt labour-saving technology, a shift from subsistence agriculture to cash-cropping, institutional constraints on land use, and expectations and preferences of young, educated workers, agriculture will fail to be an impetus to development and a source of employment creation.

6 Summary and conclusions

The effect of population on economic development may be either positive, negative, or zero depending upon the strength of opposing impacts. There is no evidence of significant impact of population on aggregate economic development (measured by GDP or GDP per capita) for Fiji, Solomon Islands, Tonga, Vanuatu, Western Samoa, or a larger sample of South Pacific Commission members for the late 1970s. There is, however, some support for a negative impact of population on economic development in Fiji over the period 1956-83.

Population growth has increased pressure on land. While population per square hectare has not risen greatly there have been significant increases in population per square hectare of arable land. This increase corresponds with decreased agricultural production per head in Fiji and Vanuatu but not in Tonga or Solomon Islands. Institutional arrangements over land ownership impede financing of investment in the rural sector and need to be regularized.

Data on savings and investment are scarce for the Pacific island nations but it appears that gross fixed capital formation per capita has increased in Tonga and Fiji. Government capital expenditure per capita has also increased in Fiji, Western Samoa and Solomon Islands but decreased in Tonga. Although investment seems to have risen, in general, it still appears to be insufficient for development needs. Aggregate saving is less than investment with the gap being filled by foreign monies, principally aid but increasingly foreign borrowing. This dependence on aid creates some problems - one of which may be lower domestic saving. For a sample of fifteen South Pacific nations population size was inversely associated with aid per capita while population growth was not associated with aid per capita. Higher aid per capita was associated with higher GNP per capita and higher government expenditure per capita. Domestic sources of development funds need to be encouraged. Remittances

from nationals resident overseas do not appear to be used for investment and may decrease domestic production.

The standard case for economic development is a shift from agriculture to industry. Population growth can retard this transformation by reducing wages and promoting increased employment in agriculture. In Fiji and Tonga there has been a marked shift of employment and GDP by origin from agriculture to industry and services. This coincides with a slowing in population growth. The same developments were observed in Western Samoa in the early 1970s. In Vanuatu there is little evidence of structural transformation but a persistence of rapid population growth.

The island nations have significant internal migration which appears to be responsive to cash-earning opportunities. Migration is primarily rural to urban, and predominantly males of early working age. This selectivity of migration has resulted in high rural dependency ratios and seems to have led to rural labour shortages. These shortages have, in turn, resulted in a shift away from labour-intensive crops and technologies. To avert these developments cash-earning employment needs to be developed in rural areas.

Population growth has often been thought to cause urbanization (a higher percentage of the population classified as residing in an urban area). However, recent evidence suggests that other important factors are the urban-rural terms of trade and urban amenities or disamenities. It is possible that these factors may help explain the recent slow-down in urbanization in the South Pacific. Governments face a policy dilemma in urbanization. If they build housing and improve urban services they encourage further in-migration. But if they allow urban services to deteriorate too much they face severe social problems. Improvement of rural housing and services as well as job opportunities may decrease the rate of urbanization.

In a sample of seventeen South Pacific nations higher population growth was found to be associated with higher infant mortality and lower life expectancy at birth. Higher GNP per capita, government expenditure per capita, and aid per capita were associated with lower mortality and higher life expectancy at birth. Population size and growth were associated with higher ratios of population per doctor while the higher the economic measures the lower the ratio of population per doctor. A higher ratio of population per doctor was associated with higher mortality and lower life expectancy. Since population growth was not significantly related to economic growth, it seems that population growth has led to a greater demand for health services than the level of development can provide and this has resulted in higher mortality and a lower life expectancy at birth. Higher population growth was also found to be associated with lower

degrees of access to safe water and excreta disposal which are, in turn, related to higher infant mortality.

If resources are allocated to increase access to safe water and excreta dispoal and to public health programs infant mortality will decrease. However, unless these programs are supported by family planning programs the rate of population growth will accelerate until individuals adjust their fertility decision-making to the lower level of infant mortality.

Fiji, Tonga and Western Samoa have a higher rate of school enrolment than Vanuatu or Solomon Islands. The latter two countries also have a much higher rate of population growth. Fiji and Western Samoa have increased school enrolment rates over the period when population growth was declining. For a sample of South Pacific nations, larger population and higher population growth were associated with a larger proportion of the population with no education and a smaller proportion with secondary education.

Investment in education has several payoffs for developing countries. In the very short run it draws young people from the labour force, easing the immediate pressure on creation of new jobs. It increases the productivity of workers and is associated with a higher level of managerial skills and thus a lower reliance on expatriates. Education, especially of females, is also inversely related to desired family size, positively related to use of family planning, and negatively related to actual fertility. Thus, it increases GNP per capita by increasing output and decreasing population.

Some problems with education are, however, emerging. The curricular demands of students and the government are not consistent. Students are demanding education to equip them for urban white collar employment while the governments of the region are trying to encourage vocational and rural employment-oriented curriculi. Expansion of education delays the demand for new job creation but increases expectations of the type of job forthcoming. Most countries have been unable to meet this demand or these expectations.

To keep labour productivity from falling, each new worker needs to be equipped with human and physical capital. It seems that Fiji and Solomon Islands have sufficient capital formation for this purpose. In Tonga the situation is marginal while Vanuatu has insufficient capital formation to equip new workers. Even though several of the nations appear to have sufficient finances to equip new workers, it seems that the incentive to do so is lacking. In all nations job creation is a serious problem, with high levels of measured youth unemployment existing in Fiji and Tonga. There is a belief in some nations that emigration is one solution to this problem. However, emigration is selective -

young skilled workers are the most likely to leave - and imposes significant costs on the sending nation.

Most nations plan to create jobs in the rural sector. However, serious barriers to this policy exist. Among these are insufficient investment, land tenure arrangements, capital-intensive crops and technologies, migration, and rising expectations tied to urban employment.

Population growth in the South Pacific appears to have been associated with lower levels of health and educational attainment, increased pressure on land and investment, and difficulty in creating sufficient jobs to meet the growth in the labour supply. These effects have not, however, been sufficiently large to lower the observed rates of economic growth. Population is only one factor affecting economic growth and it appears that in the South Pacific these other factors have been sufficiently important to outweigh the negative effects of population growth.

In this chapter the focus has been on the effects of population on economic development. There are, of course, also effects on population from economic growth. These effects may also be positive or negative. It is therefore inadvisable for any country in the South Pacific region to rely on rising income per capita to limit fertility. Research suggests that rising income and associated societal changes should eventually lead to lower fertility and population growth (Bulatao 1984:12). However, in the short run, extra income may be spent to support additional children. As a consequence, it is better to focus development expenditures on projects which lead to sustained long-term increases in income rather than projects which provide a short-run infusion of extra income.

Chapter 3

Macroeconomic stabilization policy with special reference to fiscal policy*

James Guest

The fundamental goal of macroeconomic stabilization policy in Fiji, Solomon Islands, Tonga, Vanuatu and Western Samoa must be to support ultimate development objectives relating to growth, distribution and structural change. This principle is of supreme importance in characterizing the proper role of macroeconomic stabilization policy in these countries.

These five economies share certain characteristics which dictate the environment within which their macroeconomic policies must operate. First, each one is a very open economy. Each one, in varying degrees, is heavily dependent on imports and on foreign capital, and each has a large primary export sector producing commodities for world markets in which prices fluctuate widely and over which the Pacific islands have no influence. Second, public provision of goods and services accounts for a large share of domestic output so that the actions of governments can have an important bearing on economic performance. However, as will be shown, the extreme openness of their economies imposes severe constraints on the sorts of government action that are appropriate.

Macroeconomic performance is accordingly very much influenced by external events. Disturbances emanate largely from abroad, as fluctuations in the prices of primary commodity exports, or in the flow of foreign aid, or in private foreign investment or transfers. The balance of payments provides the mechanism by which these disturbances are transmitted to the domestic economy.

Therefore, the success of macroeconomic policies in each case largely hinges on the ability of their policy frameworks to withstand disturbances transmitted through the balance of payments. Put another way, when designing policies which must suitably support broad development objectives, balance of payments equilibrium imposes a constraint which cannot be escaped.

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This has important implications for the time horizon over which macroeconomic policies should be formulated. Wide fluctuations in the year-to-year balance of payments on current accounts are a normal feature of primary export oriented developing economies so that the notion of balance of payments equilibrium must necessarily relate to a medium-term time horizon. It is also true that the equality of overseas receipts and payments in any one year is neither a necessary nor a sufficient condition for permanent external equilibrium.

Much of the discussion to follow is concerned with disturbances caused by the often volatile cycles in primary commodity export prices. The associated cyclical fluctuations in domestic income and expenditure tend to occur about a trend growth path which is largely determined by the long-run terms of trade and by the level of exogenous investment (exogenous in the sense that it is subject to the decisions of foreign suppliers of capital and public sector investment decisions). While cyclical fluctuations loom large in discussions of macroeconomic conditions facing these five Pacific countries, unexpected changes in the conditions determining their trend growth paths will occur from time to time, and macroeconomic policy must be readily responsive to either type of disturbance.

For these reasons, and because of the need to support broad development objectives, it will be argued in this chapter that macroeconomic policy responses to short-term instability should not be solely (or even mainly) formulated on a year-to-year basis, but should be formulated in the context of a medium-term view of performance and prospects.

It is necessary from the start to recognize the obvious point that no single macroeconomic policy framework will be adequate for all, and a policy framework appropriate at one time cannot always be adequate or substitute for continuing reappraisal of trends in economic indicators. Among the five Pacific island economies discussed in this monograph, there exists a diversity of characteristics which ultimately require that separate consideration be given to each one.

The chapter is organized as follows. Key macroeconomic features of Fiji, Solomon Islands, Tonga, Vanuatu and Western Samoa are examined in section 1. The need for policy intervention in pursuit of domestic stabilization with a medium-term perspective is then discussed in section 2, and a general policy framework consistent with this perspective is outlined in section 3, noting the different emphases that seem appropriate in each case. Finally, in view of the important role of government, section 4 demonstrates a method by which operational guidelines for fiscal policy may be calculated, and some concluding remarks are made in section 5.

1 Key macroeconomic features of Fiji, Solomon Islands, Tonga, Western Samoa and Vanuatu

The five tables in Appendix 3.A list available summary data for each of the five Pacific economies on their balance of payments and budget aggregates since 1975. For the purpose of comparing overall indicators it is perhaps more useful to represent the aggregates as percentages of gross domestic product (GDP) and, because of their propensity to exhibit substantial year-to-year variation, to average them over several years. This is done in Table 3.1, and the indicators so obtained reveal considerable diversity.

Table 3.1 Selected macroeconomic aggregates as a percentage of gross domestic product (averaged over years shown)

	Fiji (1979-82)	Solomon Is (1979-82)	Tonga (1979-82)	W. Samoa (1980)	Vanuatu (1979-80)
Exports f.o.b.	23.9	44.1	13.0	18.1	38.7
Tourist expenditures	13.5	..	..	..	..
Unrequited transfers (net)	1.5	9.5	27.8	33.8	41.9
Imports c.i.f.	45.7	52.8	66.2	64.1	67.6
Balance of trade deficit	21.8	8.7	53.2	45.9	28.9
Budget total outlays	26.4	35.5	30.8	58.7	52.5
Internal revenue	23.7	23.9	23.8	27.9	16.9
Budget deficit	2.7	11.6	7.0	30.8	35.6

Source: Appendix 3.A.

An indication of the extent of import leakage from expenditure is found in the high percentage of merchandise imports in GDP (almost one-half of GDP in Fiji, over one-half in Solomon Islands, and about two-thirds in Tonga, Western Samoa and Vanuatu). The degree of openness to fluctuations transmitted through the export sector is indicated by the share of merchandise exports in GDP. This is highest for Solomon Islands (44 per cent of GDP) followed by Vanuatu, Fiji, Western Samoa and Tonga.

In addition to export income fluctuations, other external disturbances may be imposed through the current account of the balance of payments. For Fiji the obvious item is tourist expenditures representing over 13 per cent of GDP. For the others it is net unrequited transfers which are 42 per cent of GDP in Vanuatu, 34 per cent in Western Samoa, 28 per cent in Tonga and 9.5 per cent in Solomon Islands. For Vanuatu and Solomon Islands these transfers are mainly official government transfers. For Tonga and Western Samoa they are largely private remittances from

their countrymen working overseas, although official transfers are also significant.

The fluctuations in these items are not usually as large as those for exports, and do not follow a cyclical pattern as export prices do. They do tend to offset the persistent balance of trade deficits facing each of the five countries. The balance of trade deficit as a percentage of GDP is about 53 per cent for Tonga, 46 per cent for Western Samoa, 29 per cent for Vanuatu, 22 per cent for Fiji and 9 per cent for Solomon Islands.

Table 3.1 also indicates the great importance of the public sector in terms of central government budget outlays as a percentage of GDP. This is highest in Western Samoa (59 per cent), followed by Vanuatu, Solomon Islands, Tonga and Fiji. The share of central government internal revenue in GDP is remarkably similar in Fiji, Solomon Islands and Tonga, a little higher in Western Samoa, and somewhat lower in Vanuatu.

The budget deficit, here defined as the difference between total budget outlays and internal revenue, is a high percentage of GDP for Vanuatu and Western Samoa, rather less for Solomon Islands, and a modest 3 per cent for Fiji.

The composition of government internal revenue for each of the five Pacific economies is shown in Table 3.2. In general, direct and indirect taxation revenue (taxation on income and expenditure) is more important than non-tax revenue (e.g. business licences, profits of statutory authorities, compulsory fees and fines). As a proportion of total internal revenue, taxation revenue is highest in Western Samoa (83 per cent), followed by Fiji (80 per cent), Vanuatu (74 per cent), Solomon Islands (70 per cent) and Tonga (68 per cent).

Table 3.2 Components of internal revenue as a percentage of total internal revenue (averaged over years shown)

	Fiji (1980-83)	Solomon Is (1979-82)	Tonga (1981-83)	W. Samoa (1980-83)	Vanuatu (1982-84)
Direct taxes	45.8	26.2	12.6	27.0	-
Companies	(12.2)	(12.6)	(6.3)	..	-
Individuals	(33.6)	(13.6)	(6.3)	..	-
Indirect taxes	34.4	43.9	55.5	55.9	74.0
Import duties	(23.2)	(25.9)	(54.0)	(38.0)	(50.2)
Export duties	-	(14.5)	-	(1.0)	(5.7)
Excise duties	(7.9)	(0.8)	(1.5)	(10.9)	-
Other	(3.3)	(2.7)	-	(6.0)	(18.1)
Non-tax revenue	19.8	29.9	31.9	17.1	26.0
Total	100.0	100.0	100.0	100.0	100.0

Sources: As for Appendix 3.A.

However, their taxation structures are very different. Vanuatu imposes no direct income taxes at all on individuals or companies, and relies most heavily on import duties which provide half of internal revenue. Import duties also dominate the tax system in Tonga accounting for 54 per cent of internal revenue, with direct income taxes accounting for a modest 12 per cent. In Western Samoa, import duties are 38 per cent of internal revenue and excise duties 11 per cent. Direct income taxes represent 27 per cent of internal revenue in Western Samoa and a similar proportion (26 per cent) in Solomon Islands. Solomon Islands is the only one of the five in which export duties are significant, accounting for 14.5 per cent of internal revenue, while import duties are 26 per cent of Solomon Islands internal revenue. In Fiji, direct income taxes dominate, and import duties comprise the lowest proportion among the five economies.

From the data in Tables 3.1 and 3.2 together it is possible to calculate the averate rate of import duty as a percentage of imports for each country.[1] The average rate of import duty is approximately the same in Fiji, Vanuatu and Solomon Islands at 12 per cent. It is about 16.5 per cent in Western Samoa, and 20 per cent in Tonga. A similar calculation for export duty as a percentage of merchandise exports gives an average export duty rate of 8 per cent for Solomon Islands, 2.5 per cent for Vanuatu and 1.5 per cent for Western Samoa (zero for Fiji and Tonga).

An indicator of openness from the point of view of the monetary system is found in the relative importance of net foreign assets of the banking system in total money supply, although comparisons are made difficult by the adoption of different concepts for measuring total liquidity. Fiji and Solomon Islands use M3 as the money supply measure and their respective shares represented by net foreign assets are 30 per cent and 66 per cent. Tonga and Western Samoa use M2 as the measure of liquidity. For Tonga net foreign assets are over 70 per cent of the money supply. For Western Samoa the corresponding item (-79 per cent) carries a negative sign indicating a chronic excess of foreign liabilities over foreign assets. In Vanuatu, foreign currency deposits represent over half of the liquidity of the banking system, measured by M4 (Table 3.3).

The share of domestic credit in total money supply is also shown in Table 3.3, along with memorandum items indicating its allocation between the public sector and the private sector (indicators that will be important background to the design of monetary policy in particular).

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[1] $\frac{\text{Import duty}}{\text{Internal revenue}} \times \frac{\text{Internal revenue}}{\text{GDP}} \times \frac{\text{GDP}}{\text{Imports}} = \frac{\text{Import duty}}{\text{Imports}}$

Table 3.3 Determinants of the money supply as a percentage of total liquidity (averaged over years shown)

	Fiji (1980-83)	Solomon Is (1980-82)	Tonga (1980-83)	W. Samoa (1980-83)	Vanuatu (1981-84)
Net foreign assets[a]	30.3	66.3	70.6	-79.2	52.7
Domestic credit	79.3	60.1	22.9	179.2	47.3
Other items (net)[b]	-9.6	-26.4	6.5	-	-
Total liquidity	100.0	100.0	100.0	100.0	100.0
Measure of liquidity items as a percentage of domestic credit					
Central government (net)	9.2	-9.5	-96.1	50.7	..
Statutory authorities	13.9	23.0		21.3	..
Private sector	76.9	86.5	196.1	28.0	..

[a] A negative sign indicates net foreign liabilities for Western Samoa.

[b] Mostly balance sheet items of commercial banks and the central bank, of little consequence for monetary policy.

Sources: As for Appendix 3.A.

In Fiji total domestic credit is 79 per cent of the money supply (M3). Credit to the private sector represents 77 per cent of domestic credit. Central government borrowing from the domestic banking system is a modest 9 per cent and statutory authorities account for a further 14 per cent of domestic credit.

In Solomon Islands, total domestic credit is 60 per cent of the money supply (M3) and, as in Fiji, the private sector takes the lion's share of this (86 per cent of domestic credit). Statutory authorities account for 23 per cent of domestic credit leaving the central government as a net lender (-9 per cent of domestic credit).

The public sector in Tonga is a substantial net lender in the domestic money supply (-96 per cent of domestic credit) while private sector credit offsets the public sector by a ratio of 2:1. Total domestic credit is a modest 23 per cent of the money supply (M2) in Tonga.

In Western Samoa total domestic credit is shown as 179 per cent of the money supply (M2), more than double the size of net foreign liabilities (-79 per cent of M2). Public sector borrowings from the domestic banking system are 51 per cent for central government and a further 21 per cent for statutory authorities, leaving only 28 per cent for the private sector.

In Vanuatu local currency deposits are 47 per cent of the money supply (M4). Data on its distribution between the public and private sector are not available.

In each of the five countries, a small number of commodities accounts for the bulk of exports. The share of major commodities in total merchandise exports, averaged over the period 1980 to 1983, is shown in Table 3.4.

Table 3.4 Major export commodities-percentage of total exports of domestic produce (averaged over 1980-83)

	Fiji	Solomon Is	Tonga	W. Samoa	Vanuatu
Sugar (incl. molasses)	73.2	..	..	..	..
Gold	7.2	..	..	..	..
Fish	6.2	30.1	..	..	..
Logs	..	28.8	..	..	..
Sawn timber	..	..	..	4.0	..
Palm oil	..	11.3	..	..	..
Coconut oil	3.8	..	28.2	22.8	..
Dessicated coconut	..	..	9.4	..	..
Copra	..	14.4	11.4	24.7	72.3
Cocoa	..	..	..	14.0	8.9
Taro	..	..	..	12.6	..
Bananas	..	..	5.5	..	..

Sources: As for Appendix 3.A.

Falvey shows elsewhere in this monograph (Chapter 4) that instability in total export receipts tends to be exacerbated when the degree of commodity concentration is high, and may be reduced when a wider range of commodities is exported provided that their price cycles are not synchronized. In the short-term, however, the scope for export diversification is limited, and macroeconomic policy must take the degree of export instability more or less as given. Falvey also shows that price fluctuations tend to be much greater than quantity fluctuations, although the latter are not insignificant and on occasions may work in the opposite direction to offset some of the effect of price fluctuations.

The graphs in Appendix 3.B, from World Bank data, illustrate the volatility of world market price for copra and coconut oil, sugar, cocoa, palm oil and kernels, and logs. They span 30 years to 1981 and show both current price series (the two lines at the bottom of the graph) and constant 1981 price series (the two lines at the top). An important feature of the graphs for present purposes is the pronounced cyclical behaviour of these prices, with a sequence of peak-downturn-trough-recovery recurring periodically in each case, although the cycles do vary in amplitude and duration.

2 The stabilization problem

In what ways do macroeconomic disturbances hold the potential to seriously disrupt progress in achieving broad development goals? And why is there a need for policy intervention in pursuit of domestic stabilization with a medium-term time horizon?

A start towards answering these questions is found in the macroeconomic indicators in Table 3.1, from which it is evident that the driving forces behind the aggregate level of activity in these economies are in government expenditures, and in the receipts side of the current account on external transactions.

Wide fluctuations in the value of export sector incomes will be reflected in the level of domestic expenditure to the extent that exports account for a high proportion of GDP. This source of instability will be especially important in Solomon Islands, Vanuatu and Fiji (if we include tourism in export income of Fiji) and still reasonably significant in Tonga and Western Samoa. In the latter two economies, instability in the flow of private transfers from abroad looms as a further potential source of domestic expenditure instability.

Fluctuations in the purchasing power of the export sector are reflected in demands for manufactured goods; the result of this will be seen more in a leakage into imports and less in derived employment in the small domestic manufacturing sector. Nevertheless, the impact on urban employment can still be substantial relative to the size of the urban workforce for several reasons.

First, instability of export sector incomes will be reflected in the demand for domestic transport and commerce activities (non-traded sector) and will impose instability on the operating surpluses of companies producing goods and services in the non-traded sector as well as in the export sector. Hogan (1984) notes that such fluctuations in corporate profitability are likely to be associated with periodic restrictions on their capacity to generate working capital internally, while access to external sources of funds is limited by a simple and modest domestic financial system. This implies that the potential to sustain fixed investment and employment will be lower than it would otherwise be in the absence of such periodic restrictions.

Second, temporary windfall gains in company profits can bring disruption in the urban labour market if workers take actions to secure a larger share for wages in times of high export prices, resulting in reduced investment and employment if export prices and company profits then fall and wages do not.

Third, private sector investment decisions are most heavily influenced by expectations of sustained profitability over the medium term. A stable domestic economic environment is not a sufficient condition for high levels of capital formation, but expectations of stable rates of growth of domestic demand will assist investor confidence. Instability on a scale which these economies would experience in the absence of some policy intervention is likely to enhance uncertainty and reduce potential investment levels in import replacement industry as well as in the non-trade sector.

The link between stabilization policy and broader development objectives is nowhere more directly drawn than in the relationship between government budgeting and planning systems. It has not been possible to investigate this crucial relationship in the five Pacific countries, and they may or may not have been successful in integrating the two systems. Elsewhere in the developing world it is not uncommon for a five-year plan to be produced in a given year, for the budget in that initial year to be designed on targets embodied in the plan, but thereafter for development plan targets to fade progressively into irrelevance as annual budget outcomes respond to the exigencies of short-term fluctuations in government financial prospects.

The essential difficulty is that the government's internal revenue will tend to fluctuate with the export commodity price cycle because of corresponding fluctuations in the income and expenditure tax bases. Moreover, aid donors generally tend to make commitments on an annual basis which may also fluctuate for various reasons. Thus the receipts side of the budget is subject to substantial short-term instability.

If budget expenditure decisions are then made on the basis of current resources on a year-to-year basis, it is possible for adverse effects on the rate of progress towards broad development objectives to occur in both bad years and in good. An unexpectedly large shortfall in receipts one year could lead to deferment of otherwise desirable development projects and disenchantment among those groups whose expectations had been raised. An unforeseen windfall gain in receipts another year could be translated into capital expenditure commitments that impose unsustainable recurrent cost obligations on future budgets, resulting in cumulative deterioration both in the government's financial position and in the balance of payments.

In any case, an unwanted degree of uncertainty is introduced into public sector investment plans if annual budgets are prepared strictly on a year-to-year basis with little reference to sustainable medium-term prospects, thereby making the achievement of development plan targets problematic.

There is of course every reason to expect the government sector to maximize its expenditure subject to available resources and assume the role of catalyst in development. Growth and improved income-earning opportunities are usually constrained by modest and fragmented infrastructure. As government expenditure accounts for a substantial proportion of total investment and of GDP, so a large proportion of private sector activities in construction, commerce, transport and other services is (directly or indirectly) dependent upon public sector demands. Furthermore, to the extent that important parts of the private sector are often foreign owned, public sector activities represent a way of increasing national participation in formal sector economic activity.

However, private sector uncertainty will be exacerbated by frequent reversals in fiscal stance if the government adopts a myopic view of what responses to short-term fluctuations are called for. On one hand, a fiscal policy of spending the maximum possible current resources on a year-to-year basis would result in a degree of instability in public expenditure with serious adverse effects on uncertainty for both public and private sector investment plans. On the other hand, a fiscal policy that attempts to counter cyclical fluctuations in exports, by boosting expenditure in years when exports are depressed and cutting back when exports are cyclically high, would also make public expenditure planning very difficult and would exacerbate private sector uncertainty.

The implication of all this is that government expenditure can best perform its leading role in the attainment of broad development objectives if the budget and planning systems are closely integrated, on the basis of a maximum sustainable trend in real government expenditure, and subject to a medium-term view of revenue prospects over the whole export cycle. Later in this chapter a procedure is outlined by which a medium-term view of prospects might be used to determine what rate of growth of real government expenditure is sustainable, and draws out the implication for short-term deficit financing of following such a path.

Finally, the need to preserve balance of payments equilibrium over the medium-term dictates that macroeconomic policy be formulated in a medium-term time horizon. Wide fluctuations are an inescapable feature of the year-to-year balance of payments outcome for the Pacific economies, and it is important to be able to distinguish among the sources of balance of payments instability according to whether they are expected to be transitory or permanent. The issue is of considerable importance in view of the need to maintain a continuing flow of imports, and to establish and preserve the confidence of overseas financial institutions in the ability to meet foreign debt service obligations.

3 Appropriate stabilization policies

Recent reviews of macroeconomic stabilization policies for developing countries clearly indicate that their stabilization problems need to be studied in their own terms, and 'standard' macro-policy prescriptions applied in a developing country context often produce 'non-standard' outcomes (Dornbusch 1982; Porter and Ranney 1982).

The stabilization problem of an advanced industrial economy is usually expressed in terms of maintaining near full employment and a low rate of inflation. Cyclical disturbances in such economies are more often than not of domestic origin, and governments have used fiscal and monetary policies to counter short-term fluctuations in the level of aggregate demand and thereby maintain internal balance.

The stabilization problem faced by the Pacific island economies is rather different. The causes of instability are largely external and thus beyond the direct control of domestic policy instruments. The effects of external disturbances on domestic activity are so strong that they can seriously disrupt progress towards a desired rate of development. Policy intervention in pursuit of domestic stabilization is required, but countercyclical fiscal policy as conventionally applied in advanced economies is not an appropriate response for several reasons.

The potentially adverse effects on public and private sector investment plans of widely fluctuating levels of government expenditure is one reason already noted in the section above.

Second, the scope of countercyclical fiscal policy is severely constrained by the large and rapid leakage of spending into imports and by the high proportion of reserve assets of the banking system made up fo foreign exchange. The export price fluctuations are simply too large and the domestic income multiplier too small, so that an attempt to boost public expenditure substantially in a period of depressed export prices will lead mainly to higher import demands, and an accelerated rundown in foreign exchange reserves which are already cyclically depressed. Thus an attempt to spend the way out of a recession is likely to be choked off by the inability to sustain the orginal credit expansion.

This stylistic account of the process is supported by econometric evidence from other countries which have been destabilized by fluctuating primary export prices. Using comprehensive econometric models of Columbia, Kenya and Ivory Coast, Dick et al. (1983) estimated the size of foreign reserve assets that would be required to enable the (weak) domestic income multiplier of a fiscal stimulus to have the required

countercyclical effect on (large) export fluctuations, and came to the conclusion that implausibly high levels of reserve backing (in excess of the level normally available to those governments) would be required if real domestic absorption were to be held constant.

Econometric estimates of the propensity to import for each of the five Pacific island economies are shown in Table 3.5. In the equations for Fiji, Solomon Islands, Tonga and Western Samoa, the two explanatory variables are government expenditure and exports, following the observation in the preceding section that these are the driving forces of economic activity, and together they explain

Table 3.5 Aggregate imports regression results

Country	Regression result	
Fiji (1971 to 1983)	(a) M=26.9 + 0.67GOV + 1.02XFOB (1.4) (3.5) (4.0)	$\bar{R}^2$ = .957 D.W. =2.170
Fiji (1971 to 1983)	(b) M=18.6 + 1.11GGS + 0.95XFOB (0.9) (3.2) (3.2)	$\bar{R}^2$ = .954 D.W. =2.320
Solomon Islands (1971 to 1983)	M= 1.2 + 0.74GOV + 0.56XFOB (0.5) (2.9) (2.8)	$\bar{R}^2$ = .973 D.W. =2.080
Tonga (1973 to 1983)	M=-2.5 + 1.91GOV + 0.89XFOB (-1.5) (21.1) (2.6)	$\bar{R}^2$ = .986 D.W. =2.020
Western Samoa (1972 to 1983)	M= 1.2 + 0.90GOV + 0.66XFOB (0.5) (6.8) (1.7)	$\bar{R}^2$ = .970 D.W. =2.350
Vanuatu (1976 to 1984)	M=218.3 + 0.85TRFR + 0.80XFOB (0.2) (1.9) (2.3)	$\bar{R}^2$ = .570 D.W. =1.490

Notes: M denotes total imports of merchandise (c.i.f. value)
GOV denotes total government budget outlays.
GGS denotes total government expenditure on goods and services (i.e. excludes debt servicing from total budget outlays).
XFOB denotes total exports of merchandise (f.o.b.) value).
TRFR denotes net unrequited transfers.

All variables in millions of local currency units, annual observations over period indicated in current prices. Figures in parentheses underneath regression coefficients are t-values (significant at 5% level for 10 d.f. if t > 1.81, and for 6 d.f. if t > 1.94).

Source: Author's calculations.

almost all of the variation in imports (as shown by high R^2). The statistical terms was obtained by replacing the government expenditure variable with unrequited transfers - a reasonable approach in the circumstances since these are mostly official transfers in support of public expenditure in Vanuatu.

The regression coefficients in Table 3.5 may be interpreted as total import propensities. They capture not only the direct import requirements for government expenditure and exports, but also the imports required for industrial consumption and household consumption that are indirectly dependent on the government sector and export sector as exogenous sources of income-generating activity.

For each of the five Pacific economies the propensity to import is very high and the domestic income multiplier is correspondingly very low. Therefore, the conventional approach to using fiscal and monetary policy to counter domestic instability will be quite ineffective, and it is necessary to look for an alternative instrument of domestic stabilization.

The domestic stabilization measures likely to have the greatest effect are those which operate directly upon the incomes immediately affected by export price fluctuations. For agricultural export incomes, a system of higher taxes in good years combined with lower taxes and subsidies in bad years has sometimes been suggested but, since such a system could give rise to substantial problems in budgetary management, it would be simpler to operate quite separate price stabilization funds for each export commodity and keep these funds entirely outside the government accounts. A build up of levies in the funds during years of above-average prices would permit price support payments to producers in years of lower than average prices.

The stabilizing effect of such funds then depends on two things: first, the extent to which the levies and support payments actually dampen the cycle of price fluctuations (that is, the rate of levy and bounty, and the margin above and below long-term average price at which levies and bounties cut in); and second, the extent to which the monetary effects of accumulated balances can be 'sterilized'. This was demonstrated by Davis (1983) who observed, for a sample of ten countries receiving windfall gains from the 1976-77 coffee and cocoa price boom, that most were able to restrict the producer income windfall using direct stabilization mechanisms, but also that the failure to sterilize the monetary effects of high fund balances (through increased government spending financed by fund balances) contributed to substantially increased imports.

Clearly, the successful operation of commodity stabilization funds presupposes a firm commitment on the part of growers to exercise restraint in good years in order to enjoy the cushion against bad years, and supplementary mechanisms are required to prevent governments from expanding absorption financed by such funds. There may also be institutional constraints on their success. For example, individual sugar farmers in Fiji would be understandably reluctant to contribute levies if insecurity of land tenure threatened to prevent them from receiving bounty support in the future.

Some guidance on the establishment of commodity stabilization funds may be drawn from the experience of Papua New Guinea (PNG) which has operated such funds since 1976 for its three major cash crops, coffee, cocoa and copra, and since 1984 for palm oil. These export crops are produced in PNG either on alienated land (in the case of plantations and smallholder resettlement blocks) or on customary held land (in the case of village growers). The funds have been accepted by growers, and have been successful in moderating income fluctuations (though not totally eliminating them). Approximately two-thirds of the funds' balances are held in central bank securities with one-third in commercial bank deposits. They are administered by industry boards representing the growers and the government has no claim on them.

Exploration for minerals, including oil and gas, is being undertaken in some of the Pacific islands, and there is a possibility that wide fluctuations in mineral export receipts will in future add a further dimension to external instability. The main 'incomes' which will fluctuate with mineral export earnings are the profits of the mining companies and government revenues from taxes (and perhaps dividends if government takes a minority shareholding). As regards company profits, it is usually the case that retained earnings of mining companies are used for working capital which tends not to vary much from year to year, and dividends (which do fluctuate widely) are distributed to shareholders who are all foreign residents (unless the host government has some equity). Thus the extent to which instability in mineral export receipts is transmitted to the domestic economy depends only upon government spending decisions.

The direct stabilization mechanism required in this case is simply a procedure to ensure that public spending out of mineral revenues each year accords with the annual average of expected receipts over an estimated mineral price cycle. The Mineral Resources Stabilization Fund has performed this function for the PNG budget since 1975, ensuring that external payments surpluses associated with exceptionally high metal prices have their impact on domestic absorption largely sterilized (Garnaut and Baxter 1983).

If the task of stabilizing domestic income and expenditure is largely effected by direct measures such as those described (or closely related measures) what then is the role of the traditional demand management tools, fiscal and monetary policy? The limited scope for these instruments to offset domestic instability, because of the rapid leakage of expenditure into imports, has already been noted. The corollary of this observation is that aggregate expenditure policies will have a strong impact on the balance of payments through the derived demand for imports.

Consider first the role of monetary policy. In an economy driven by export earnings, with substantial foreign ownership in the organized business sector, and with probably very modest savings by wage-earners and smallholder farmers, there is a strong tendency towards an 'automatic' balance in private sector external payments, as long as private sector expenditure is not funded by domestic credit creation. This is because the bulk of private investment expenditure will be funded from foreign capital inflows, or from retained earnings which would otherwise flow abroad as dividends. Thus foreign exchange outflows for imported capital goods tend to be balanced by additional inflows or foreign exchange retentions. Imports for current consumption depend on current income, which in turn is almost wholly supported by exports (or tourism, or private remittances from abroad). If private sector domestic credit creation is attempted, the consequent decline in the foreign reserve assets of the banking system will act quickly to reverse the monetary effects of the initial credit expansion, restoring balance but with a lower level of reserves. As long as the balances of stabilization funds are sterilized in the central bank, or appropriately monitored through central bank lending directives to commercial banks, their existence makes no difference to this tendency, only to the timing of outflows.

The tendency towards private sector external payments balance in the Pacific economies will diminish as their monetary systems diversify. Growing nationally-owned investment, increased private saving, and the development of local capital markets will all weaken the straightforward link between the money supply and the balance of payments. This has already occurred to a considerable extent in Fiji but less so in the other economies.

Nevertheless, there will still be scope for the use of monetary policy to regulate the private sector's impact on external payments. One can assume either that the private sector's external payments tend to balance over the medium term, or alternatively that monetary policy ensures that they do. In either case, the role of monetary policy is to ensure that the medium-term rate of expansion of domestic credit to the private sector does not increase to the extent that foreign reserves decline irrevocably. This is likely to mean that the banking system will be required to maintain a rather high level of

liquidity in years of high export prices in order to ensure a continuing stable flow of private sector credit in years when export prices are depressed.

Turning now to fiscal policy, wide fluctuations in government expenditure are to be avoided for reasons already discussed. The preferred alternative is to set a maximum sustainable trend in real government expenditure on goods and services, subject to the average level of resources available over the whole export commodity price cycle. In this way, real public expenditure can perform its 'leading role' in the attainment of major development objectives, reducing uncertainty in public expenditure planning, and assisting with private sector expectations of more stable growth of demand.

What does this imply for the balance of payments? On the receipts side of the budget, internal revenue represents a diversion of potential private sector spending which would otherwise flow largely to imports. The excess of government spending over internal revenue is thus the principal determinant of the balance of payments. If the overall budget deficit is financed by foreign borrowing, foreign aid, or borrowing from the non-bank private sector, there will be counterpart foreign exchange inflows or private sector spending reductions to offset the additional direct and indirect import demand and repatriation of profits by foreign companies engaged on government contracts. On the other hand, increased borrowing from the banking system is very likely to result in a decline in foreign exchange reserves.

Maintenance of a steady trend in real public spending through the commodity price cycle implies a fluctuating budget deficit to the extent that revenues continue to fluctuate despite the operation of stabilization schemes. Moreover, maintaining such a trend implies that short-term swings in the balance of payments current account will be exacerbated, since expenditure growth (and hence, imports) will be maintained when export receipts and internal revenue are cyclically low, and expenditure will be restrained on its medium-term trend when export receipts and internal revenue are cyclically high. Thus it is the medium-term or 'average' budget deficit that is important in determining the average level of reserves over time, not the absolute level of the deficit in any one year.

In essence, this argument amounts to the familiar proposition that, in a small open economy with no control over the level of export earnings or foreign capital inflows, the balance of payments is the main constraint on development programs since it is the overwhelming constraint on the rate of expansion of real public spending. In the present context, this has important implications for the conduct of fiscal policy. It is suggested that the correct procedure for economic management over the export commodity price cycle is to regard observance of the balance of

payments constraint as a medium-term target, and fiscal policy as the instrument with which to achieve it.

This principle must be translated into operational guidelines for the conduct of fiscal policy. Specifically, it is necessary to develop the concept of a 'sustainable budget deficit' as a norm against which to judge whether annual budget outcomes are leading the economy along a path which observes or violates the medium-term balance of payments constraint. Moreover, such judgments cannot be made in isolation from those on alternative means of deficit financing. The next section outlines how such guidelines may be formalized.

4 Guidelines for a sustainable fiscal policy

The definition of a sustainable budget deficit as one which would preserve medium-term equilibrium in the balance of payments has three components. First, an assessment of sustainable internal revenue must be made, based on trends in the factors which determine internal revenue growth (that is, abstracting from short-term revenue fluctuations). Second, an assessment of sustainable budget expenditure must be made, as a level of expenditure that can be maintained in relation to sustainable internal revenue. Third, an assessment must be made of alternative means of financing the budget deficit in a way which preserves permanent balance of payments equilibrium, in the sense that the economy does not experience cumulative deterioration in the level of foreign exchange reserves or cumulative increase in the burden of foreign debt as a consequence of the chosen means of deficit financing. These three components are considered in turn.

Taxation revenue is larger than non-tax revenue in each of the five Pacific economies (Table 3.2). Instability in taxation revenue occurs mainly because of fluctuations in the domestic income and expenditure tax bases (although changes in tax rates are also important), and, in turn, fluctuations in the tax bases are caused by fluctuations in the receipts side of the balance of payments, that is, instability in exports, unrequited transfers and tourism.

Econometric investigation of the relationship between taxation revenue and major current account credits yielded very satisfactory results in support of this hypothesis. The results are listed in Table 3.6. For Fiji, exports free on board (f.o.b.) and tourist credits are the two explanatory variables. For Solomon Islands, Tonga, Western Samoa and Vanuatu, exports f.o.b. and net unrequited transfers are the two explanatory variables. The amount of variation in taxation revenue that can be explained in this way was 98 per cent for Fiji and Western Samoa, 93 per cent for Solomon Islands, 87 per cent for Tonga and 62 per cent

for Vanuatu (the weaker result in the latter case being largely due to the shorter time series of available data).

In each case there is a positive and statistically significant effect of exports on taxation revenue, implying that taxation revenue will be boosted when exports are cyclically high, and depressed when exports are cyclically low. The export effect will be strongest in Solomon Islands where the tax multiplier of exports is high (0.49 from Table 3.6) and where exports account for a high proportion of domestic output (44 per cent of GDP, from Table 3.1). The export effect will be less strong in Fiji where both the tax multiplier of exports and the share of exports in GDP are half the levels observed in Solomon Islands.

Table 3.6 Taxation revenue regression results

Country	Regression result	
Fiji (1971 to 1983)	TAX = -16.4 + 0.24XFOB + 1.12TOUR (-2.5) (2.7) (7.3)	$\bar{R}^2$ = .980 D.W. =2.200
Solomons Islands (1971 to 1983)	TAX = 3.8 + 0.49XFOB - 0.76TRFR (2.0) (11.3) (-3.4)	$\bar{R}^2$ = .927 D.W. =2.030
Tonga (1973 to 1983)	TAX = -0.8 + 0.53XFOB + 0.44TRFR (-0.6) (2.2) (6.9)	$\bar{R}^2$ = .872 D.W. =2.150
Western Samoa (1972 to 1983)	TAX = 4.6 + 0.36XFOB + 0.61TRFR (7.8) (3.6) (9.0)	$\bar{R}^2$ = .988 D.W. =1.180
Vanuatu (1976 to 1984)	TAX = -649 + 0.27XFOB + 0.33TRFR (-1.4) (2.4) (2.3)	$\bar{R}^2$ = .621 D.W. =1.140

Notes: TAX denotes aggregate taxation revenue.
XFOB denotes total exports of merchandise (f.o.b. value).
TOUR denotes tourist expenditure and fares.
TRFR denotes net unrequited transfers (private transfers only for Western Samoa).

All variables in millions of local currency units, annual observations over period indicated in current prices. Figures in parentheses underneath regression coefficients are t-values (significant at 5% level for 10 d.f. if t > 1.81, and for 6 d.f. if t > 1.94).

Source: Author's calculations.

The estimated tax multiplier of tourism in Fiji is very high at 1.12 (although in statistical terms not significantly different from 1.0) and dominates the effect of exports on tax revenue despite the fact that tourism provides little more than half of the foreign exchange credits that exports do. Fortunately for Fiji, the cyclical fluctuations in tourist credits are not as volatile as those for exports.

For Tonga, Western Samoa and Vanuatu, the regression coefficients on net unrequited transfers are all positive and statistically significant (especially so in Tonga and Western Samoa), indicating that increases (decreases) in transfers will cause associated increases (decreases) in tax revenue. Since unrequited transfers to these economies are very high, disturbances in the flow of transfers will impose considerable instability on their tax revenues.

For Solomon Islands, the coefficient on net unrequited transfers is negative and significant, indicating that when transfers go up taxation revenue tends to go down. This may be due to the deflating effect of expatriate worker remittances, although empirically it is not inconsistent with a more jaundiced view of the impact of foreign aid on aggregate domestic savings. The effect is relatively small in relation to that coming through exports, as net unrequited transfers to Solomon Islands provide only one-fifth of the amount of foreign exchange credits that exports do.

The observed relationships in Table 3.6 determining taxation revenue then lead to the concept of a level of taxation revenue which might be sustainable with respect to the medium-term trend in export receipts, tourist receipts, and net unrequited transfers. Specifically, sustainable taxation revenue is that level which would be obtained if the explanatory variables in Table 3.6 did not deviate from their respective trends.

This can be calculated for an historical series simply by fitting an exponential growth trend through the respective time series of exports, tourist credits and transfers, and then substituting the given trend values appropriately into the estimated taxation revenue equations from Table 3.6. For the purposes of budget planning it would of course be necessary to forecast each of these explanatory variables, and in so doing form a judgment about whether future trends will differ from past trends. The method is applied in this chapter to historical data only in order to convey the essential concepts: its extension into a forecasting context is reasonably straightforward.

Non-tax revenue items do not respond systematically to disturbances in exports, tourism or transfers (e.g. business licences, profits of statutory authorities, compulsory fees and fines). As shown in Table 3.2 they are a not unimportant proportion of total internal revenue for the Pacific economies, although not as large as taxation revenue. For present purposes, an exponential time trend was fitted to the available time series of non-tax revenue for each country. The fitted trend values of non-tax revenue were then added to sustainable taxation revenue to obtain an estimate of total sustainable internal revenue.

Next we consider the expenditure side of the budget norm. The sustainable level of budget expenditure must be determined in relation to sustainable internal revenue. It is not independent of the means by which the excess of budget expenditure over revenue is to be financed, but we return to that shortly.

The approach to determining sustainable expenditure is a variant, albeit a substantial one, of a method suggested by Mansfield (1980) who determined internal revenue solely in relation to exports, and who assumed the absence of direct income stabilization measures and assigned fiscal policy to the domestic income stabilization objective. Mansfield computed the ratio of expenditure to revenue in some base year in which the budget is judged to be neutral in its impact on domestic activity. Such an impact would be approximated by a budget in which borrowing from the domestic banking system was very small and in which expenditure was financed by internal revenue at about trend level plus overseas borrowing. However, Mansfield's norm involves a certain degree of arbitrariness in the selection of the base year, and he is silent about how any balance of payments target might be achieved.

A more useful approach for present purposes is to relate the expenditure side of the budget norm to a longer period of time than one year. The procedure adopted here was, first, to calculate the ratio of total budget outlays divided by internal revenue for each of seven years (the seven years 1977 to 1983 were used as the most recent period for which data on all five Pacific economies were readily available). Over a seven-year period, export commodity prices and tourism receipts are likely to have worked through at least one complete cycle, and disturbances in the flow of unrequited transfers are likely to have been above trend as often as below trend. Then the seven-year average of these ratios was calculated. The results of these calculations are shown in Table 3.7.

Table 3.7 Annual ratios of total budget outlays to internal revenue

	Fiji	Solomon Is	Tonga	W. Samoa	Vanuatu
1977	1.304	1.568	1.281	1.905	3.523
1978	1.351	1.779	1.209	2.044	3.409
1979	1.158	1.561	1.318	2.124	3.199
1980	1.023	1.640	1.264	2.104	3.019
1981	1.082	1.413	1.328	2.268	2.209
1982	1.184	1.404	1.280	2.053	1.683
1983	1.218	1.467	1.115	1.696	1.546
Seven-year average of annual ratios	1.189	1.547	1.256	2.028	2.655

Source: Appendix 3.A.

Table 3.8 Months of import (c.i.f.) cover by foreign exchange reserves

	Fiji	Solomon Is	Tonga	W. Samoa[a]	Vanuatu
1977	5.5	..	..	..	..
1978	4.4	..	..	..	..
1979	3.6	6.2	4.8	-0.7	..
1980	3.6	4.0	5.7	-2.4	..
1981	2.6	2.8	5.1	-4.4	3.9
1982	3.2	6.9	4.0	-5.7	6.0
1983	3.0	8.0	4.3	-3.4	7.6
1984	3.2	..	..	..	11.1

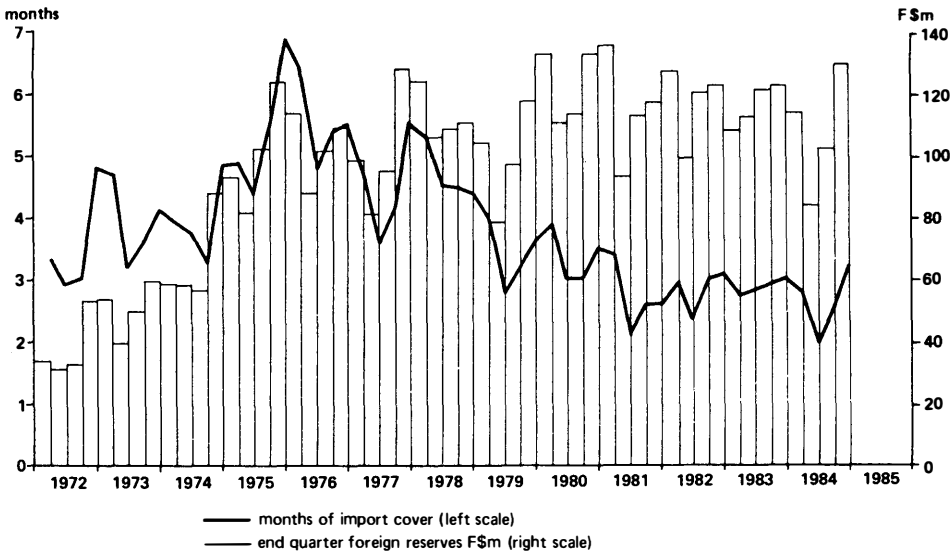
[a]Net foreign liabilities for Western Samoa in place of foreign exchange reserves.

$$\text{Months of import cover} = \frac{\text{Foreign exchange reserves at end year}}{\text{Average monthly value of imports c.i.f. during year}}$$

Source: Appendix 3.A.

The average ratio of budget outlays to internal revenue then has to be related to the average level of import cover afforded by foreign exchange reserves. Available estimates of import cover for the five Pacific economies are given in Table 3.8 but the available series are unfortunately short for all except Fiji. Figure 3.1 gives a more detailed illustration of movements in foreign exchange reserves and import cover on a quarterly basis for Fiji.

Figure 3.1 Fiji: official foreign exchange reserves (as at end of quarter) and import cover by foreign exchange reserves



Source: Author's own calculations.

If the average level of import cover afforded by foreign exchange reserves had been satisfactory over (say) seven years, then one could reasonably argue that the average ratio of budget outlays to internal revenue, averaged over the same period, is a ratio which is sustainable with respect to the medium-term balance of payments. Put another way, over a seven-year period the observed fluctuations in foreign exchange reserves (corresponding broadly to fluctuations in exports, tourism and unrequited transfers) should tend to balance out around a sustainable level of import cover, provided that monetary policy is conducted in such a way that medium-term balance in private sector external payments is observed, and provided that the government does not finance its budget deficit by large borrowings from the domestic banking system (which has no foreign exchange counterpart).

These conditions have not always been met in the five Pacific economies, and the average level of import cover might not have been satisfactory as a direct consequence of this (notably in Western Samoa). Moreover, relating the average ratio of budget expenditure divided by internal revenue to the average level of import cover (both calculated over the same seven-year historical period) might not be immediately useful for future planning if the observed import cover series has followed a steady trend, either downwards (as for Fiji, Fig. 3.1) or upwards (as appears to have occurred recently in Vanuatu). But this only means that the

Table 3.9 Fiji: sustainable levels of internal revenue, budget expenditure and budget deficit (calendar year — millions of Fiji dollars)

	1977	1978	1979	1980	1981	1982	1983
(1) Trend exports	136.3	155.9	178.3	203.9	233.3	266.8	305.2
(2) Actual exports	150.9	151.8	202.6	278.8	240.8	236.4	221.5
(3) Trend tourist credits	86.5	98.0	111.1	125.8	142.6	161.6	183.1
(4) Actual tourist credits	88.7	96.9	116.1	122.7	139.2	162.6	165.2
(5) Sustainable tax revenue	112.9	130.4	150.4	172.9	198.7	228.0	261.2
(6) Trend non-tax revenue	22.9	27.0	31.9	37.7	44.5	52.5	62.0
(7) Sustainable internal revenue ((5) + (6))	135.8	157.4	182.3	210.6	243.2	280.5	323.2
(8) Actual internal revenue	146.5	153.5	200.1	227.9	258.3	266.3	286.0
(9) Sustainable budget expenditure ((7)×1.189)	161.5	187.1	216.8	250.4	289.2	333.5	384.3
(10) Actual budget expenditure	191.0	207.3	231.8	233.2	279.4	315.2	348.2
(11) Sustainable budget deficit ((9) - (7))	25.7	29.7	34.5	39.8	46.0	53.0	61.1
(12) Actual budget deficit (10)-(8)	44.5	53.8	31.7	5.3	21.1	48.9	62.2

Source: Author's calculations.

existence of such trends, and expectations about future trends, have to be taken into account when making future plans (as is the case for any planning exercise), and does not affect the basic principle behind these guidelines.

Perhaps the best interpretation of the budget ratios (Table 3.7) averaged over an historical period is that they provide a base from which to judge whether changes in the budget deficit will make matters better or worse than they have been, on average, in that historical period. They will thus provide a basis for commenting on past policy, but will need to be modified for use in forecasting. On this basis we may proceed to determine the sustainable level of government expenditure. Specifically, sustainable government expenditure is found by multiplying sustainable internal revenue, defined above, by the average budget ratio (from Table 3.7), averaged over seven years.

The sustainable budget deficit is then simply the difference between sustainable government expenditure and sustainable internal revenue. Since both the sustainable expenditure and sustainable revenue components have been defined as being compatible with the maintenance of a given average level of

reserves (that is, over the medium term), it is clear that we should be able to assess the contribution of an individual budget to the permanent balance of payments outcome in terms of the deviation of the actual budget deficit from its sustainable level.

The calculation of these aggregates over the period 1977-83 are shown for Fiji (Table 3.9), Solomon Islands (Table 3.10), Tonga (Table 3.11), Western Samoa (Table 3.12), and Vanuatu (Table 3.13). In each of these tables, the first two lines show trend exports and actual exports. The third and fourth lines show the trend and actual values respectively of the other explanatory variable used in the tax revenue regressions in Table 3.6 (that is, tourist credits for Fiji, net transfers for the others). The fifth line shows sustainable taxation revenue, found by substituting trend values of the explanatory variables (exports and tourists credits, or exports and transfers) into the estimating equations from Table 3.6. The sixth line is trend non-tax revenue and the seventh is sustainable total internal revenue. Actual internal revenue is listed on line 8 for comparison. Line 9 shows sustainable budget expenditure found by multiplying sustainable total internal revenue by the seven-year average ratio of expenditure to revenue for the relevant economy (Table 3.7). Line 10 shows actual budget expenditure. Lines 11 and 12 show, respectively, the calculated sustainable budget deficit and actual budget deficit. It would then be possible to separate the difference between the sustainable and actual deficits into two parts: one being the deviation of actual internal revenue from sustainable internal revenue; and the other being the deviation of actual expenditure from its sustainable level. Separating these two parts may be useful for identifying the size and direction of instability originating on the receipts side of the budget, and the extent to which expenditure decisions offset or enhance this instability.

The difference between the actual deficit and the sustainable deficit may then be taken as a measure of the impact of fiscal policy on the current account of the balance of payments. Actual deficits which exceed the sustainable level in any one year indicate that the net absorption of resources by the government in that year is greater than that which can continue to be supported by the trend in available internal resources over the export cycle. This will result in a larger current account balance of payments deficit than if the sustainable deficit had been appropriated and, since the sustainable deficit is by construction compatible with a medium-term balance of payments equilibrium, continuing budget deficits in excess of this norm cannot be sustainable.

Nevertheless, governments need not feel obliged to appropriate for their sustainable deficit in every year. The actual deficit may exceed or fall short of the norm depending upon the overall balance of payments position and the chosen means of

Table 3.10 Solomon Islands: sustainable levels of internal revenue, budget expenditure and budget deficit (calendar year — millions of Solomon Is dollars)

	1977	1978	1979	1980	1981	1982	1983
(1) Trend exports	26.1	31.8	38.7	47.2	57.4	70.0	85.2
(2) Actual exports	29.6	30.6	59.3	60.8	57.6	56.6	71.2
(3) Trend net unrequited transfers	9.4	10.2	11.1	12.0	13.0	14.2	15.4
(4) Actual net unrequited transfers	11.7	16.8	17.2	16.5	10.2	6.7	14.1
(5) Sustainable tax revenue	9.5	11.7	14.4	17.9	22.1	27.4	34.0
(6) Trend non-tax revenue	6.0	6.6	7.3	8.1	9.0	10.0	11.1
(7) Sustainable internal revenue ((5) + (6))	15.5	18.3	21.7	26.0	31.1	37.4	45.1
(8) Actual internal revenue	13.9	17.2	23.9	27.5	36.1	39.4	40.5
(9) Sustainable budget expenditure ((7)×1.547)	24.0	28.3	33.6	40.2	48.1	57.9	69.8
(10) Actual budget expenditure	21.8	30.6	37.3	45.1	51.0	55.3	59.4
(11) Sustainable budget deficit ((9) - (7))	8.5	10.0	11.9	14.2	17.0	20.5	24.7
(12) Actual budget deficit ((10) - (8))	7.9	13.4	13.4	17.6	14.9	15.9	18.9

Source: Author's calculations.

deficit financing. If a government were to appropriate for a budget deficit in excess of the norm, and if the main source of deficit financing was borrowing from the domestic banking system which has no foreign exchange earning counterpart, then the overall balance of payments position would deteriorate rapidly and irrevocably (ceteris paribus), the extent of the foreign exchange loss being approximately equal to the excess of the actual budget deficit over the norm. The limitations to the continuing pursuit of such a strategy are obvious enough, but what can be said in the context of overseas sources of finance?

Foreign grants and loans provide counterpart foreign exchange to meet the direct and indirect imports associated with a given budget deficit. Two issues are important here. The first is the extent to which some of these countries are concerned with their dependence on foreign grants. The second is their concern with escalating foreign debt service obligations on overseas loans.

Because foreign grants are unrequited transfers which do not affect the balance of payments impact of a given budget deficit, there is a strong case for including them 'below the line' in the estimation of the sustainable budget deficit. If, in addition to the overall macroeconomic role of fiscal policy as discussed so

Table 3.11 Tonga: sustainable levels of internal revenue, budget expenditure and budget deficit (fiscal year ending June — millions of Tongan dollars)

	1977	1978	1979	1980	1981	1982	1983
(1) Trend exports	4.9	5.2	5.5	5.8	6.2	6.6	7.0
(2) Actual exports	6.4	5.1	7.0	7.2	7.5	4.3	6.5
(3) Trend net unrequited transfers	6.3	7.7	9.3	11.3	13.7	16.7	20.2
(4) Actual net unrequited transfers	6.4	7.2	8.9	10.6	13.5	22.6	15.5
(5) Sustainable tax revenue	4.6	5.4	6.3	7.3	8.6	10.1	11.9
(6) Trend non-tax revenue	2.1	2.4	2.9	3.4	4.0	4.7	5.5
(7) Sustainable internal revenue ((5) + (6))	6.7	7.8	9.2	10.7	12.6	14.8	17.4
(8) Actual internal revenue	6.4	8.6	8.8	10.6	12.5	15.7	18.3
(9) Sustainable budget expenditure ((7)×1.256)	8.4	9.8	11.6	13.4	15.8	18.6	21.8
(10) Actual budget expenditure	8.2	10.4	11.6	13.4	16.6	20.1	20.4
(11) Sustainable budget deficit ((9) - (7))	1.7	2.0	2.4	2.7	3.2	3.8	4.4
(12) Actual budget deficit ((10) - (8))	1.8	1.9	2.8	2.8	4.1	4.4	2.1

Source: Author's calculations.

far, a country was concerned to reduce its dependence on foreign grants, it must recognize that the rate at which this can be achieved depends on the rate of growth of internal revenue, which in turn depends on the rate of growth of exports. Thus it would be appropriate to base sustainable expenditure calculations not just upon sustainable internal revenue but also upon sustainable (desirable) flows of grant aid.

Over an historical period this could be simply evaluated by fitting a trend through a time series of grant aid flows and recalculating sustainable expenditure accordingly. This has not been done in this chapter because of the difficulty in obtaining consistent time series of grant aid flows for each country. In a forecasting context it would of course be necessary to take into consideration the anticipated (slower) rate of growth of foreign grants, which would, one hopes, be related to export growth potential, either directly through its effect on internal revenue prospects, or indirectly through its effect on debt servicing capacity to which we now turn.

Over time it is reasonable to assume that the potential for net foreign borrowing by these governments for general budgetary

Table 3.12 Western Samoa: sustainable levels of internal revenue, budget expenditure and budget deficit (calendar year — millions of tala)

	1977	1978	1979	1980	1981	1982	1983
(1) Trend exports	8.3	9.8	11.6	13.7	16.1	19.0	22.5
(2) Actual exports	11.6	8.2	15.0	16.2	11.6	15.8	27.5
(3) Trend net private transfers	4.9	6.8	9.4	13.1	18.1	25.1	34.7
(4) Actual net private transfers	4.6	8.9	11.0	17.2	19.3	22.6	31.5
(5) Sustainable tax revenue	10.6	12.3	14.5	17.5	21.4	26.7	33.9
(6) Trend non-tax revenue	3.3	3.6	3.9	4.2	4.5	4.9	5.3
(7) Sustainable internal revenue ((5) + (6))	13.9	15.9	18.4	21.7	25.9	31.6	39.2
(8) Actual internal revenue	14.8	18.2	21.0	24.9	24.3	28.3	41.1
(9) Sustainable budget expenditure ((7)×2.028)	28.2	32.2	37.3	44.0	52.5	64.1	79.5
(10) Actual budget expenditure	28.2	37.2	44.6	52.4	55.1	58.1	69.7
(11) Sustainable budget deficit ((9) - (7))	14.3	16.3	18.9	22.3	26.6	32.5	40.3
(12) Actual budget deficit ((10) - (8))	13.4	19.0	23.6	27.5	30.8	29.8	28.6

Source: Author's calculations.

purposes (that is, their creditworthiness) will be positively correlated with exports - as export earning potential increases, so will borrowing capacity. The perception by foreign banks of a country's creditworthiness will of course be affected by ex ante trends in export potential whereas what we have been discussing so far is only in terms of ex post trends, and the two need not necessarily be the same. To the extent that ex post and ex ante trends in export earnings do differ, the budget impact norm would need to be modified if it were used in forecasting.

In any case, not only does the trend in exports largely determine the sustainable internal revenue trend, it also determines the extent to which governments have access to foreign commercial borrowing as a source of residual budget finance. Because of the recent entry of these governments in foreign capital markets it is not yet possible to test this proposition statistically, but, if it is accepted, it indicates an alternative type of constraint on the ability of a country to continue to run budget deficits in excess of the sustainable deficit.

The budget norm thus represents an attempt to quantify variations in the budget deficit in a way that is meaningful in

Table 3.13 Vanuatu: sustainable levels of internal revenue, budget expenditure and budget deficit (calendar year — millions of vatu)

	1977	1978	1979	1980	1981	1982	1983
(1) Trend exports	2317	2449	2590	2738	2894	3060	3235
(2) Actual exports	2914	3082	3240	2449	2832	2201	2940
(3) Trend net unrequited transfers	2476	2622	2777	2941	3115	3299	3494
(4) Actual net unrequited transfers	2272	2474	2711	3455	4002	3241	3000(p)
(5) Sustainable tax revenue	789	872	961	1055	1154	1236	1370
(6) Trend non-tax revenue	205	233	265	301	343	390	443
(7) Sustainable internal revenue ((5) + (6))	994	1105	1226	1356	1497	1626	1813
(8) Actual internal revenue	933	1043	1287	1191	1472	1729	2006
(9) Sustainable budget expenditure ((7)×2.655)	2639	2934	3255	3600	3974	4317	4813
(10) Actual budget expenditure	3287	3556	4117	3595	3252(p)	2909	3102
(11) Sustainable budget deficit ((9) - (7))	1645	1829	2029	2244	2477	2691	3000
(12) Actual budget deficit ((10) - (8))	2354	2513	2830	2404	1780(p)	1180	1096

(p) Preliminary

Source: Author's calculations.

the context of a medium-term sustainable balance of payments. It does not explicitly take account of different methods of financing the budget deficit, and yet it appears to retain its relevance for balance of payments management under different financing assumptions.

5 Conclusions

It has been argued in this chapter that macroeconomic policy responses to short-term instability emanating through fluctuations in foreign exchange receipts on current account should be formulated in the context of a medium-term view of prospects and performance. The purpose of this was to provide a basis upon which stabilization policy can support progress towards ultimate development objectives within constraints set by the need to preserve medium-term balance of payments equilibrium.

Export commodity price stabilization funds were suggested as the most effective mechanism to moderate fluctuations in export incomes directly, and indirectly thereby to reduce the associated fluctuations in domestic income and expenditure which, in the absence of direct stabilization mechanisms, hold the potential to upset both private sector and public sector investment plans. Although the difficulties in making such funds work in the desired manner are not ignored, they are not treated in very much detail in this chapter because room was needed for a more comprehensive analysis of fiscal policy options.

Special attention was paid to fiscal policy in recognition of the large size of the government sector and its leading role in development planning in all five of the Pacific economies studied. It was shown that fiscal policy is ineffective for domestic stabilization but has a strong and direct effect on the balance of payments. A practical method for assessing the impact of annual budget deficits on medium-term balance of payments equilibrium was outlined. Adherence to the fiscal principles advocated in this method would provide significant benefits in two important respects. First, it contains guidelines for setting a stable and sustainable rate of growth of aggregate government expenditure. This would provide a sound basis upon which expenditure planning for development can proceed with enhanced confidence. Second, it would ensure that the conduct of fiscal policy will promote the maintenance of a sound balance of payments and, in combination with other policies, help to avoid the trap of permanent disequilibrium in the balance of payments. This assessment of the method's benefits remained valid under a wide range of sources of finance for the budget deficit. However, the short-term implications for financing the balance of payments deficit must still be addressed.

An attempt to use fiscal policy to offset wide fluctuations in current account receipts is to be avoided, partly because of the adverse effects of widely fluctuating government expenditure on uncertainty for private and public sector investment plans, but especially because it would exacerbate short-term fluctuations in the current account of the balance of payments. For example, a boom in export receipts will cause taxation revenue to increase, thereby tending to restrain import demands and build up a surplus of foreign exchange. Restraint of government expenditure in an attempt to moderate the level of domestic activity would further restrain imports and exacerbate the surlus. By the same token, an attempt to spend the way out of a recession caused by depressed export sector incomes will result in a rapid increase in import demands and exacerbate the temporary balance of payments deficit.

The converse approach to fiscal policy of spending the maximum current resources available to government on a year-to-year basis would also be undesirable from the point of view of increasing uncertainty in private and public sector investment plans, although it would serve to moderate fluctuations in the current account of the balance of payments. However, spending extra revenue accrued on public projects would result in a rapid leakage of expenditure into imports sufficient to mop up the surplus.

This brief study has eschewed both extremes of fiscal policy in favour of maintaining a steady sustainable trend in government expenditure, so as to promote stability in the investment climate. The effect of this on the balance of payments deficit will then lie somewhere between the above-mentioned extremes. Adherence to a sustainable expenditure growth trend will preserve medium-term balance of payments equilibrium. However, the possibility that a temporary deficit financing problem may arise for the balance of payments in any particular year cannot be ruled out (at least, not for unexpectedly large shortfalls in current receipts: an anticipated downturn would be taken into account in determining sustainable budget expenditure).

The ability to withstand temporary shortfalls in export receipts can be enhanced by drawing on the resources of the International Monetary Fund (IMF). A good account of the types of IMF programs which may be relevant in respect of balance of payments support for the Pacific islands is given by Reddy (1984).

One issue raised by Reddy (not to be overemphasized, but nonetheless important) is that IMF programs necessarily involve the loss of some degree of sovereignty over the formulation of domestic economic policy, through different degrees of conditionality applied to Fund drawings under different programs. This is very mild for the Compensatory Financing Facility, which is the appropriate one for strictly temporary shortfalls, but it is serious for the Extended Fund Facility which may be undertaken

in the event of a persistent and fundamental disequilibrium in a Fund member's balance of payments.

The issue has been clouded in the past by the scope which exists for disagreement between the Fund and some members over the extent to which a particular balance of payments crisis is cyclical or structural. It has become emotive by observations that some aspects of IMF programs in pursuit of balance of payments equilibrium during the 1970s and early 1980s have on occasion resulted in 'overkill' - a process of economic retrenchment that went further than was strictly necessary in terms of quite reasonable objectives (Dell 1982).

One advantage of following the guidelines suggested in the present chapter is that medium-term equilibrium in the balance of payments will be preserved, so a resort to IMF programs aimed at correcting a fundamental disequilibrium will be unnecessary and sovereignty over policy formulation will be retained (provided, of course, that a fundamental disequilibrium does not already exist). Further, the quantitative estimation of a budget norm along the lines suggested will provide for an objective assessment of the extent to which a particular balance of payments crisis is cyclical or structural, and thereby clarify the size and type of Fund assistance which is appropriate.

Table 3.A.1 Fiji (calendar year — millions of Fiji dollars)

	1975	1976	1977	1978	1979	1980	1981	1982	1983
Adjusted merchandise exports f.o.b.	131.4	108.5	150.9	151.8	202.6	278.8	240.8	236.4	221.5
Passenger fares, travel credits	76.9	84.0	88.7	96.9	116.1	122.7	139.2	162.6	165.2
Other goods, services credits	46.1	45.3	59.1	59.8	66.6	94.2	104.4	107.5	134.7
Unrequited transfers — private (net)	-4.1	-4.4	-3.6	-3.4	-7.1	-3.6	-7.5	-2.8	-1.9
Unrequited transfers — government (net)	3.7	1.2	2.7	1.7	16.2	22.9	22.1	19.1	27.2
Adjusted merchandise imports f.o.b.	-190.5	-205.0	-241.2	-255.4	-340.4	-393.0	-465.7	-411.2	-428.9
Freight, insurance debits	-30.3	-32.5	-38.0	-43.0	-47.1	-55.1	-64.8	-57.1	-59.1
Other income, services debits	-38.4	-44.0	-46.5	-46.3	-68.5	-95.6	-113.1	-140.3	-122.8
Current account deficit(-)/surplus(+)	-5.2	-46.9	-27.9	-37.9	-61.6	-28.7	-144.6	-85.8	-64.1
Overall balance of payments	-35.6	+19.7	-21.9	+15.7	-2.9	-31.4	+17.3	+19.7	+5.9
Foreign exchange reserves (end year)	124.9	109.5	128.6	110.4	117.2	132.7	117.1	123.3	122.5
GDP at current market prices	450.0	562.4	623.5	702.2	852.2	983.8	1056.1	1122.0(p)	..
Taxation revenue	90.5	104.1	117.6	136.5	160.7	185.4	214.1	210.9	222.5
Non-tax revenue	17.7	15.1	28.9	17.0	39.4	42.5	44.2	55.4	63.5
Total budget outlays	122.3	161.4	191.0	207.3	231.8	233.2	279.4	315.2	348.2
Budget deficit(-)/surplus(+)	-14.1	-42.2	-44.5	-53.8	-31.7	-5.3	-21.1	-48.9	-62.2

(p) Preliminary

Source: Government of Fiji, Current Economic Statistics, Bureau of Statistics, Suva (January 1980, April 1983, January 1985).

Table 3.A.2 Solomon Islands (calendar year — millions of Solomon Is dollars)

	1975	1976	1977	1978	1979	1980	1981	1982	1983
Merchandise exports f.o.b.	11.8	20.0	29.6	30.6	59.3	60.8	57.6	56.6	71.2
Other goods, services credits	1.9	2.5	3.0	4.6	5.0	9.7	11.3	17.7	16.4
Unrequited transfers — private	1.4	1.4	1.5	1.8	2.0	0.6	-5.0	-4.8	-3.0
Unrequited transfers — government	6.1	9.3	10.2	15.0	15.2	15.9	15.2	11.1	17.1
Merchandise imports f.o.b.	-21.8	-21.1	-25.8	-30.9	-50.6	-61.5	-66.0	-57.4	-70.6
Freight, insurance debits	-4.4	-4.2	-5.2	-6.2	-10.0	-10.6	-13.2	-11.4	-14.0
Other income, services debits	-4.6	-6.4	-8.1	-12.0	-12.0	-25.0	-23.0	-21.3	-34.0
Current account deficit(-)/surplus(+)	-9.6	1.4	5.2	2.9	8.9	-10.1	-23.1	-10.1	-7.0
Overall balance of payments	1.0	1.5	6.2	13.3	6.8	-7.3	-5.7	21.2	16.9
Foreign exchange reserves (end year)	..	..	..	..	31.2	23.9	18.2	39.4	56.3
GDP at current market prices	51.2	60.6	73.5	85.8	112.7	119.4	140.6	158.5(p)	175.0(p)
Taxation revenue	5.5	6.3	8.6	10.8	15.7	18.3	24.3	29.2	26.0(p)
Non-tax revenue	3.7	3.9	5.3	6.4	8.2	9.2	11.8	10.2	14.5(p)
Total budget outlays	14.1	17.7	21.8	30.6	37.3	45.1	51.0	55.3	59.4
Budget deficit(-)/surplus(+)	-4.9	-7.5	-7.9	-13.4	-13.4	-17.6	-14.9	-15.9	-18.9

(p) Preliminary

Source: Solomon Islands (1984).

Table 3.A.3 Tonga (fiscal year ending 30 June — millions of Tongan dollars)

	1975	1976	1977	1978	1979	1980	1981	1982	1983
Merchandise exports f.o.b.	4.6	3.2	6.4	5.1	7.0	7.2	7.5	4.3	6.5
Other goods, services credits	..	..	..	..	7.7	8.2	11.3	13.7	4.5
Unrequited transfers (net)	6.5	5.8	6.4	7.2	8.9	10.6	13.5	22.6	15.5
Imports c.i.f.	-13.0	-11.7	-17.7	-22.3	-26.2	-30.1	-35.1	-41.2	-41.7
Other income, services debits	..	..	..	..	-4.4	-4.7	-5.6	-5.9	-2.7
Current account deficit(-)/ surplus(+)	..	..	..	..	-7.0	-8.8	-8.4	-6.5	-17.9
Foreign exchange reserves (end June)	..	..	..	..	10.5	14.2	14.8	13.9	14.8
GDP at current market prices	24.8	24.6	30.8	36.3	40.0	46.8	53.5	59.9	66.6
Taxation revenue	4.2	3.6	4.5	6.1	6.3	7.5	8.9	10.4	12.0
Non-tax revenue	1.4	1.5	1.9	2.5	2.5	3.1	3.6	5.3	6.3
Total budget outlays	5.6	7.3	8.2	10.4	11.6	13.4	16.6	20.1	20.4
Budget deficit(-)/ surplus(+)	-	-2.2	-1.8	-1.9	-2.8	-2.8	-4.1	-4.4	-2.1

Sources: Tonga (1981) (for government budget data covering FY1976 to FY1980); otherwise ADB (1984).

Table 3.A.4 Western Samoa (calendar year — millions of tala)

	1975	1976	1977	1978	1979	1980	1981	1982	1983
Merchandise exports f.o.b.	4.5	5.4	11.6	8.2	15.0	16.2	11.6	15.8	27.5
Other goods services credits	..	4.1	5.6	2.1	0.4	6.7	3.3	2.5	1.7
Unrequited transfers — private	{3.6	2.4	4.6	8.9	11.0	17.2	19.3	22.6	31.5
Unrequited transfers — government		3.1	7.7	8.8	17.5	13.0	14.8	14.3	23.8
Imports c.i.f.	-23.2	-23.6	-32.3	-38.6	-61.2	-57.2	-58.5	-60.0	-80.4
Other income, services debits	..	-4.2	-6.3	-4.5	-6.7	-6.8	-5.2	-3.2	-2.3
Current account deficit(-)/ surplus(+)	-13.4	-12.8	-9.1	-15.1	-24.0	-10.9	-14.7	-8.0	+1.8
Net foreign liabilities(-)/ assets(+)	..	..	..	..	-3.4	-11.3	-21.6	-28.5	-22.9
GDP in current producer prices	..	..	..	..	..	89.3	..	..	..
Taxation revenue	8.0	8.7	12.2	14.6	16.6	20.4	20.3	23.9	33.8
Non-tax revenue	2.1	2.7	2.6	3.6	4.4	4.5	4.0	4.4	7.3
Total budget outlays	18.0	21.2	28.2	37.2	44.6	52.4	55.1	58.1	69.7
Budget deficit(-)/surplus(+)	-7.9	-9.8	-13.4	-19.0	-23.6	-27.5	-30.8	-29.8	-28.6

Sources: Western Samoa (1984b) (for years 1980 to 1983); ADB (1984) (for years 1975 to 1979).

Table 3.A.5 Vanuatu (calendar year — millions of vatu)

	1976	1977	1978	1979	1980	1981	1982	1983	1984
Merchandise exports f.o.b.	1537	2914	3082	3240	2449	2832	2201	2940	4303
Other goods, services credits	907	1208	1728	2033	2950	3440	4686	5000(p)	..
Unrequited transfers (net)	2298	2272	2474	2711	3455	4002	3241	3000(p)	..
Imports c.i.f.	-3000	-4155	-4614	-5020	-4922	-5123	-5663	-6260	-6631
Other income, services debits	-705	-1829	-1694	-1571	-1878	-1956	-2056	..	..
Current account deficit(-)/ surplus(+)	1037	410	976	1393	2054	3195	2409	..	..
Foreign currency deposits	..	..	..	..	..	1646	2833	3990	6152
GDP at current market prices	5000(p)	..	..	8000(p)	6700(p)	..	..	..	..
Taxation revenue	553	764	785	1104	945	1220	1265	1456	1773
Non-tax revenue	288	169	258	183	246	252	464	550	564
Total budget outlays	3432	3287	3556	4117	3595	3252(p)	2909	3102	3400(p)
Budget deficit(-)/surplus(+)	-2591	-2354	-2513	-2830	-2404	-1780	-1180	-1096	-1063(p)

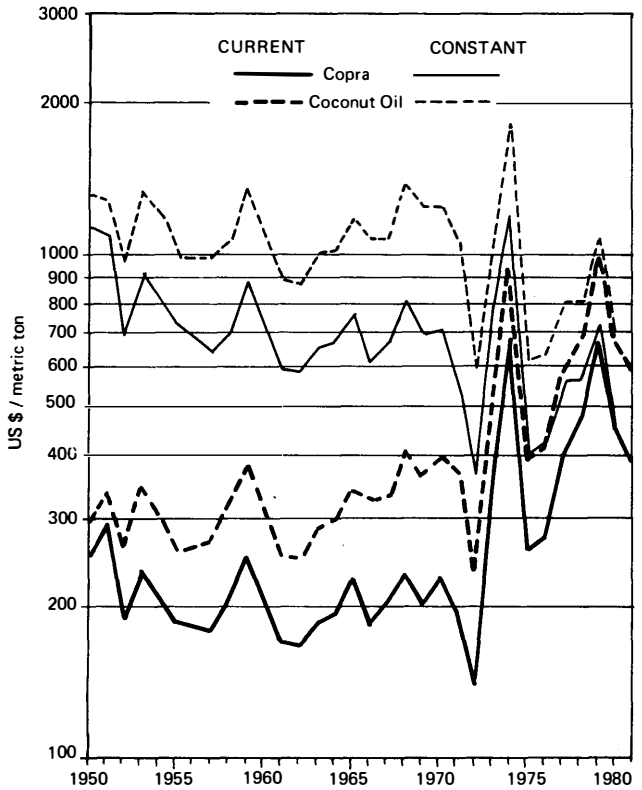
(p) Preliminary

Sources: ADB (1984) and October 1984 Supplement (for balance of payments data); Vanuatu (1981 and 1984a) (for government budget data).

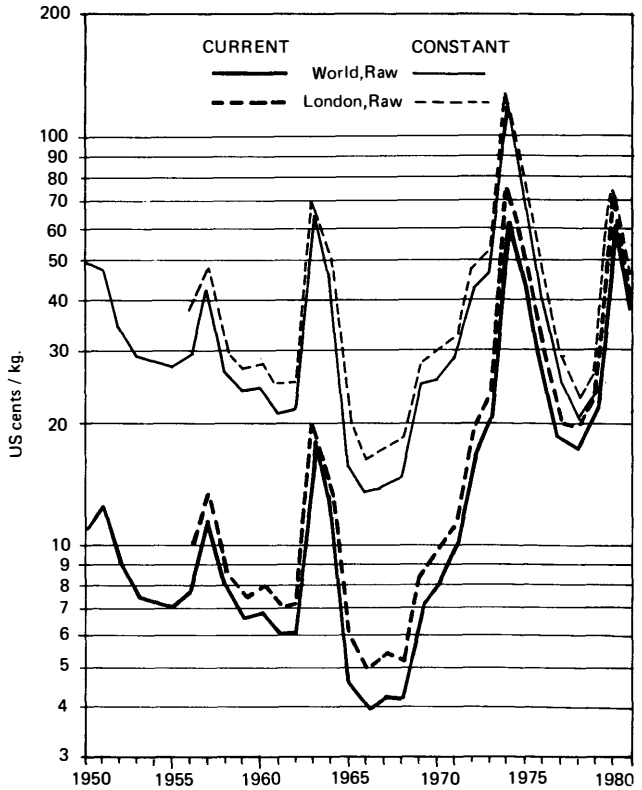
Appendix 3.B Graphs of commodity prices

Source: World Bank, Commodity Trade and Price Trends, Johns Hopkins University Press, Baltimore.

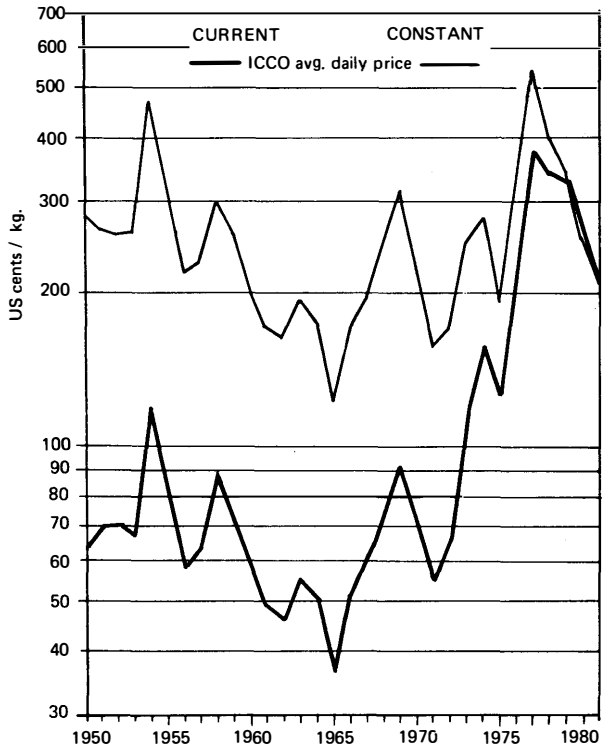
Copra and coconut oil
(Yearly average)



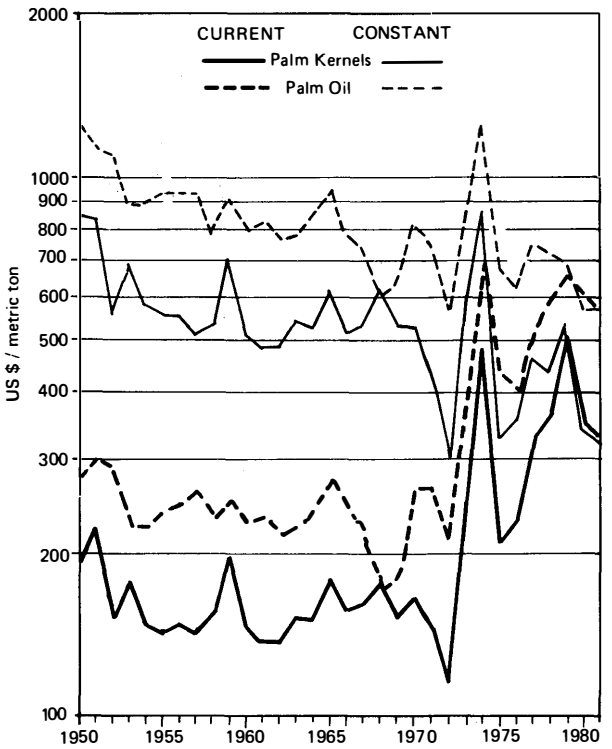
Sugar
(Yearly average)



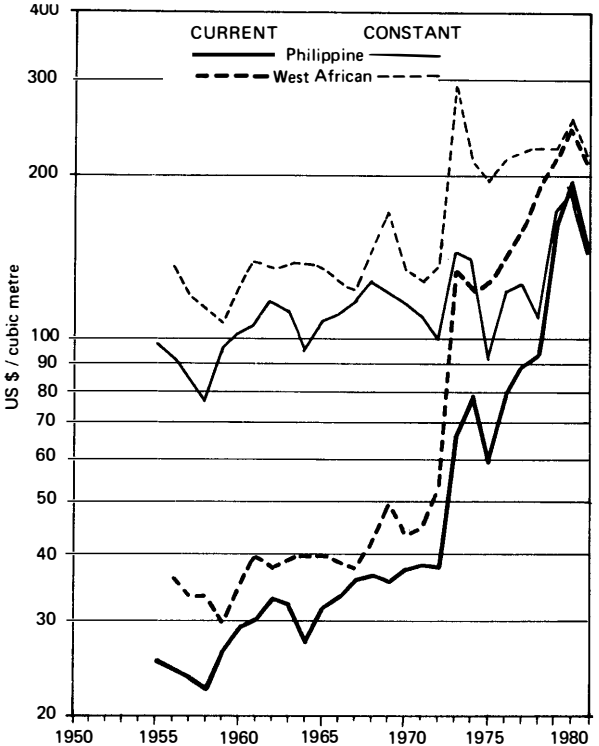
Cocoa
(Yearly average)



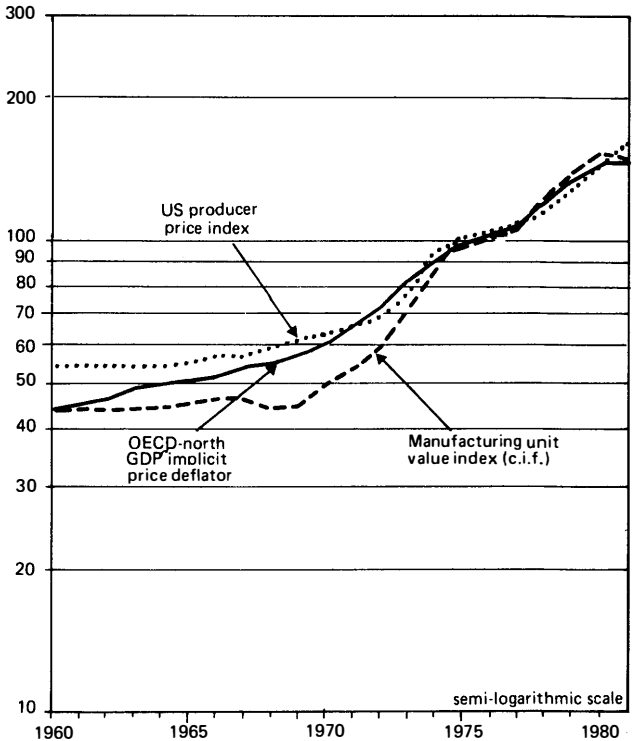
Palm kernels and palm oil
(Yearly average)



Logs
(Yearly average)



Selected price indices, 1960-1961
(1975=100)



Chapter 4

Trade problems and policies of Pacific island economies

Rodney E. Falvey

When viewed from a trading perspective the two most significant characteristics of the five Pacific island economies discussed in this chapter (Fiji, Solomon Islands, Tonga, Vanuatu and Western Samoa) are their small size and their isolation. Smallness is important because it implies that to capture the benefits of the division of labour these economies should specialize in the production and export of a few traded products in which they have a comparative advantage, and import the remainder of their requirements. For this, and other historical reasons, Pacific islands have tended to specialize in the production and export of a few tropical primary products, while importing consumer and capital goods.

Isolation combines with small shipment volumes to yield on average high transport costs for both exports and imports. While the natural protection accorded import competing industries by transport costs is consequently high, this advantage for domestic producers tends to be offset by the economies of scale obtainable by larger foreign producers. The small internal market does not allow solely domestic producers to reap the same advantages. Only limited import competing production would therefore occur without protection.

In combination these circumstances imply that the growth and development prospects of these economies depend heavily on their export performance. Imports are the only viable source of the capital and consumer goods that characterize advanced living standards. In addition, participation in competitive international markets promotes specialization and efficiency in exporting activities whose benefits may spread to the rest of the economy through induced factor movements and the development of internal markets.

As a consequence activity in small economies like these is heavily influenced by external events. The level and variability of their external receipts have therefore been matters of great concern to these governments. This review of trade problems and policies therefore centres on the issue of 'instability' in export receipts, since this provides the underlying motivation for the many stabilization schemes and diversification policies adopted in the islands.

The following section (1) gives a general overview of trading volumes and patterns, beginning with the current account before narrowing in on merchandise trade flows. This provides a useful perspective on the relative significance of the latter for the different countries. Section 2 turns to the issue of instability in export receipts. Besides examining merchandise export flows, the other credit (and debit) components of the current account are also considered, since it is variations in total receipts (and expenditures) which are of primary significance to the aggregate economy. The policies adopted or contemplated to counter the effects of external instability are then discussed in Section 3. While a wide range of approaches can be listed, those which have reasonable prospects of success for small island economies are quite limited. The concluding section briefly summarizes the paper.

Before examining the current account in detail, it is worth looking at information on growth rates, merchandise export shares and changes in total export volumes for these and comparable island economies which are provided in Table 4.1. Given their size and levels of development one would expect these countries to have a high ratio of merchandise exports to gross domestic product (GDP). While this is true for Solomon Islands, Vanuatu and possibly Fiji, it is not the case for Tonga and Western Samoa. Similarly, with the exception of Solomon Islands, the changes in the volumes of total exports are low relative to those of the rapidly growing island states.[1] Table 4.1 therefore suggests that, with the exception of Solomon Islands, exports may not be fulfilling the 'leading sector' role to the extent necessary for rapid economic growth and development.

1 An overview of current account trends

The current account statistics for the five economies studied are presented for four selected years in Appendix Table 4.A.1. Transactions are grouped into three categories corresponding to the three components of the current account balance - the trade balance, net other goods and services income and total unrequited transfers.

Two aspects are worth noting in comparing the country data in Appendix Table 4.A.1. First, while trade balance deficits and net inflows of unrequited transfers are generally the rule, experiences with other goods and services income and the overall current account balance are more diverse. Fiji and, in later years, Vanuatu have significant net other goods and services

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[1] Further evidence on low export growth rates is provided in Section 2 below.

Table 4.1 Export shares and growth rates

Country	Population[1] (mid-1981) in millions	GDP per capita[1] (US$ 1981)	Growth in GDP per capita 1960-80[1] (%)	Merchandise exports[2] GDP (%)	Merchandise exports[2] (%)	Total exports 1984[3] / Total exports 1975 (in US$)
Fiji	0.6	2000	3.3	23.9		1.50
Solomon Islands	0.2	640	1.3	44.1		6.05
Tonga	..	..	..	13.0		1.24[a]
Western Samoa	0.2	..	..	18.1		2.78
Vanuatu	0.1	350	0.4	38.7		1.28[b]
Barbados	0.3	3500	4.9	24.1		3.64
Cyprus	0.6	3740	6.3	26.3		3.78
Malta	0.4	3600	8.1	41.1		2.37
Mauritius	0.9	1270	2.1	33.8		1.23
Seychelles	0.1	1800	2.9	13.3		4.33
Papua New Guinea	3.1	840	2.5	37.1		1.89

[a]1975-80. [b]1977-84.

Sources: [1]World Bank (1983).

[2]Table 3 in Guest (Chapter 3 in this volume) and International Monetary Fund (IMF), International Statistics Yearbook 1985.

[3]IMF, International Financial Statistics Yearbook 1985.

surpluses, consistent with their roles as regional communications and financial centres. The other countries tend to have persistent deficits or erratic small surpluses in these items. Similarly, Fiji and Western Samoa run persistent current account deficits, Vanuatu runs a surplus, while Tonga and Solomon Islands alternate between the two. Diversity is again evident in the composition of total credits. Only for Solomon Islands do merchandise exports dominate total credits. In 1981-82 the largest credit components were total unrequited transfers in Tonga and Western Samoa, and other goods and services credits in Fiji and Vanuatu. This strongly suggests that any examination of instability in external receipts for these countries should not be confined to merchandise exports. Variations in these other components could well be significant and may amplify or offset those in merchandise exports.

The broad commodity compositions of trade flows for these countries are indicated in Appendix Table 4.A.2. Such individual shifts in export shares as the growth in Fiji's re-exports of petroleum products and the rapid development of Solomon Islands'

fish exports after 1971, can be seen from this table. The export shares of food and live animals, and crude materials, are high, and once comprised over 90 per cent of total merchandise exports. The recent growth in Standard International Trade Classification (SITC) 4 may reflect the effects of policies designed to promote export diversification and the increased processing of domestic resources. Palm oil exports from Solomon Islands began in 1976, and coconut oil exports from Vanuatu and Tonga began in 1978 and 1979 respectively. Export shares have become more diversified, although this effect is not pronounced.

The composition of imports is similar across countries. The mix is characterized by high shares of food, basic manufactures and machinery and transport equipment. There are few perceptible trends apart from the jump in the share of petroleum imports.

The import and export shares of each country's top ten trading partners, from the late 1960s to 1980, are presented in Appendix Table 4.A.3. Several inferences can be drawn. First, there appears to be greater volatility in export than in import shares, both for individual countries and for the largest three combined. Second, the combined shares of the largest three export and import trading partners respectively, provide no evidence that exports are more or less highly concentrated than imports across countries. Third, Australia and New Zealand together have a much larger share of imports than exports. Fourth, the colonial influence shows itself in the large shares of the United Kingdom in Fiji, France in Vanuatu and New Zealand in Western Samoa. Given the similarity of the islands' economies there is little intra-regional trade, apart from some re-exports from Fiji.

2 External instability

The significance of instability in export receipts is a subject that has generated considerable debate. Whether such instability is more than merely a nuisance for planning purposes and does in fact impose economic costs (reducing an economy's rate of growth for example), appears to be an unresolved issue despite the attention it has received.[2] A recent study (Moran 1983) concludes that instability in aggregate export receipts does not appear to have a statistically significant impact on growth in the long run, but can negatively affect growth over shorter periods (a decade). In the long run internal adjustments offset the negative short-run impact. Moran also finds that in his sample of

[2]The theoretical linkage between uncertainty and growth through saving and investment is ambiguous. While uncertainty may adversely affect the level and efficiency of investment, and through it the growth path, it should also induce risk averse individuals to save, and therefore to invest, more.

countries instability in total export receipts is consistently higher than price and quantity instability, implying that price and quantity fluctuations tend to reinforce each other. Quantity instability is always less than price instability. These results are consistent across a variety of export currency measures and instability indexes.

While the general case that export instability per se is economically disadvantageous remains unproven, two points make it relevant in this context. First, the countries examined here have the characteristics normally associated with highly variable export earnings (Brundell, Horn and Svedberg 1981). Their exports are primarily agricultural, are highly concentrated and are small on world markets. Thus, if instability is to be a matter of concern anywhere it should be of concern here. Second, the governments of the region have been very concerned with instability and this has had an important influence on policymaking.

As noted above, the current account variable of concern at the aggregate level is presumably total credits rather than simply merchandise exports alone. The analysis of export instability therefore begins with the components of the current account listed in Appendix Table 4.A.1 (unfortunately Vanuatu could not be included because of data limitations). Only then is attention turned to the major components of merchandise exports.

Current account components . The objective here is to determine the relative levels of instability in the various current account components and the interrelationships between them. For this purpose an exponential trend rate of growth was estimated for each component and an instability index constructed on the basis of deviations from this estimated trend.[3] (The details of this procedure and the techniques used to decompose the instability in aggregate variables in terms of their components are given in Appendix 4.B.) The results are shown in Table 4.2,[4] which provides an indication of the relative rates of growth and degrees of instability of the relevant current account components. Few clear patterns emerge from this table. For Fiji and Western Samoa, total credits are estimated to be growing more rapidly than total debits, but the converse holds for Solomon

[3]This procedure follows that recently employed by Lloyd and Procter (1983).

[4]Note that exponential trends cannot be estimated directly for variables whose values alternate in sign. Trend values for these variables can still be inferred, however, from the relevant 'adding up' constraint (e.g. current account balance = trade balance + net other goods and services income + unrequited transfers) and by recalling that when all but one element is at its trend value then so is the last.

Table 4.2 Estimated trends and instability indexes for current account compenents

	Fiji		Solomon Is.		Tonga		Samoa	
	Trend growth rate	Instability index	Trend growth rate	Instability index	Trend growth rate	Instability index	Trend growth rate	Instability index
CB	10.6	0.3970	a	a	a	a	7.9	0.3569
TB	12.7	0.0674	a	a	20.4	0.0333	13.5	0.1175
OGS	13.4	0.0855	10.9	0.1066	a	a	a	a
UT	a	a	1.1	0.1354	n.a.	n.a.	21.4	0.0918
TC	13.1	0.0286	14.6	0.0632	15.7	0.0547	12.7	0.0488
MEX	12.6	0.0562	16.4	0.0918	8.8	0.0662	7.9	0.0986
OGSC	13.4	0.0240	28.1	0.0366	18.8	0.1041	-	0.3713
PUT	a	a	a	a	19.1	0.0445	17.7	0.0749
OUT	16.2	0.7228	8.3	0.0629	n.a.	n.a.	26.5	0.3174
TD	12.8	0.0240	18.6	0.0617	16.3	0.0338	11.2	0.0470
MIM	12.6	0.0293	14.7	0.0561	16.6	0.0321	11.5	0.0565
OGSD	13.4	0.0174	16.4	0.0593	15.5	0.0727	9.6	0.0692

CB = Current account balance
TB = Trade balance
OGS = Other goods and services
UT = Unrequited transfers
TC = Total credits
MEX = Merchandise exports
OGSC = Other goods and services credits
PUT = Private unrequited transfers
OUT = Official inrequited transfers
TD = Total debits
MIM = Merchandise imports
OGSD = Other goods and services debits

[a]Indicates that an exponential trend cannot be estimated (see text).

Sources: Calculated from IMF, Balance of Payments Statistics Yearbooks, IMF, International Financial Statistics Yearbooks, and Asian Development Bank, Key Indicators of D.M.C.s.

Islands and Tonga. Total credits have higher instability indexes than total debits in all cases, however. The components of total credits exhibit quite different rates of growth and instability indexes, with again no consistent pattern. In general, merchandise exports are neither the fastest nor the slowest growing item, and neither the most nor the least variable. Similar remarks apply to the composition of total debits, although here the divergence in growth rates and instability indexes is much less pronounced.

The instability in each aggregate variable can be attributed to the differing trends of its components, and their deviations about these trends.[5] Table 4.3 and Appendix Table 4.A.4 provide the relevant decompositions. Table 4.3 breaks down the variations in the current account into those percentages attributable to deviations from trends in the trade balance, other goods and services income and unrequited transfers, and the co-variances among them. Examining the variance terms, one notes that in all cases the greatest percentage is explained by the variance in the trade balance. Unrequited transfers then follow, except for Fiji. But it is the interaction terms that are particularly revealing. Deviations in the trade balance and unilateral transfers are partially offsetting in all four cases, particularly for Tonga and Western Samoa. The same is true for other goods and services income and transfers, except for Tonga.[6] With this one exception, unrequited transfers presently perform a stabilizing role in the current account. This stabilizing role is particularly important for Solomon Islands and Western Samoa, and is noted in the latter's Fifth Development Plan. The general pattern that emerges

Table 4.3 Decomposition of instability in current account balance (per cent)

Country	Contribution due to					
	Components			Interaction terms		
	Var.(TB)	Var.(OGS)	Var.(UT)	Cov.(TB,OGS)	Cov.(TB,UT)	Cov.(OGS,UT)
Fiji	142.2	44.3	9.6	-74.5	-12.1	-9.5
Solomon Islands	93.1	25.2	38.4	84.7	-85.8	-55.5
Tonga[a]	148.4	57.5	75.5	-115.6	-146.8	80.9
Samoa	189.6	12.3	167.2	45.3	-229.5	-84.8

[a]Tongan CB includes only private unrequited transfers.

Abbreviations and sources: As for Table 4.2.

[5]That is, deviations from the trend in the current account balance; see Appendix 4.B.

[6]In this respect it is interesting to note that our data include only private transfers for Tonga.

from Table 4.3 is one of considerable variability in the trade balance in all cases, and also in transfers for Western Samoa, with much of this instability then being offset by the co-variance terms between the trade balance, other goods and services income and unrequited transfers.

Further evidence of these interactions is given in Appendix Table 4.A.4. The variance in merchandise exports is the largest among the credit items. For Fiji almost all the variation in total credits is attributable to merchandise exports, other goods and services credits and the positive interaction between the two. For Solomon Islands, variations in merchandise exports and transfers are significant. For Tonga (where only data on private transfers are available) there is a more even distribution, with positive co-variances among all components. Since private transfers are so important for Western Samoa, total transfers have been broken down into their two components in decomposing the variability in total credits. Several points can be noted. First, both types of transfer are negatively correlated with both other credit items in the current account. Second, variations in private and official transfers are positively correlated. Third, variations in transfers, particularly official transfers, are responsible for much of the variation in total credits. Finally, the negative co-variance between other goods and services credits and the transfer components considerably dampens the variability in total credits.

On the debit side a clear pattern emerges. In all cases the deviations in merchandise imports and other goods and services debits are positively correlated, and the major source of variability in total debits is in the trade account - merchandise imports.

The final part of Appendix Table 4.A.4 provides the correlations between these credit and debit deviations. With only two (small) exceptions these correlations are positive, indicating that when credit components are above total credit trends debit components are above debit trends also. Deviations on the two sides therefore tend to offset each other in the current account. This is to be expected, of course, since when income is high so generally is expenditure.

The two most significant implications of Table 4.3 and Appendix Table 4.A.4 are, first, that merchandise export receipts are an important source of variation in total receipts, and, second, that unrequited transfers appear to perform a stabilizing role in the current account. Trends and instability in merchandise export receipts are discussed in more detail below.

Here a few comments on the future prospects for transfers are in order. That transfers currently perform a stabilizing role is not accidental. Official aid flows and private transfer inflows partially adjust to the level of other credits.[7] In considering future prospects therefore, the composition as well as the magnitude of transfers is of importance. In 1982, 43 per cent of Fiji's total transfer credits were private, with the rest being 'interofficial' (including grants and technical assistance received under multilateral and bilateral arrangements); all Solomon Islands' transfer credits were interofficial. and all its transfer debits were private[8]; in 1981 77.2 per cent of Tonga's and 60.1 per cent of Western Samoa's private transfer credits were migrants' remittances and the remainder were interofficial transfers.

Migrants' remittances represent, in a sense, the proceeds from the export of population (or labour), with these exports being nominally 'permanent' in the case of the migrants' remittances and 'temporary' for workers' remittances. As Appendix Table 4.A.1 reveals, these transfer flows are of major significance in some cases, and their future stability and growth are therefore matters of importance. Worker remittances are lost once a worker returns, although if this only occurs at the point of retirement and a foreign pension entitlement can be transferred, then some inflow of funds may continue for a short time. Migrant remittances similarly are likely to be largely specific to the migrating generation. Growing private transfer receipts therefore depend on a growing outflow of migrants and workers.

The high per capita values of official aid flows reflect, amongst other things, the small size of the recipients' and the donors' desire to maintain political stability in the area. Despite these current advantages, the political stability of other countries in the region and the donors' political motivations are both exogenous to any given recipient and therefore subject to unpredictable changes. This makes long-term reliance on aid flows a questionable proposition. Similar issues cloud Vanuatu's role as a 'financial centre' (tax haven). Continued success in this role depends on the South Pacific being perceived as politically stable relative to other geographical areas in which tax havens are located. However, this is another area in which accurate predictions are notoriously difficult.

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[7] This is clearly the case for the Stabex grants discussed below.

[8] Note that for some countries some aid flows are included in reported other goods and services credits where these cannot be separated out.

Major exports. Given that variations in aggregate merchandise export receipts are an important source of variations in total receipts, it is useful to examine the variation in major individual export products to determine the extent to which this instability can be attributed to world prices, about which the small countries can probably do little, or to export quantities, over which they can have a greater influence. The correlations among variations in the prices and quantities of different export products are also of importance.

To investigate instability at the product level, unit value[9] and quantity data were collected for each country's major export products. Exponential trends were then estimated as above, and an instability index calculated for each unit value and quantity series on the basis of deviations from these trends. The results are reported in Appendix Table 4.A.5. Since some products (copra, cocoa and fish) are major exports for more than one country, this table has more than one estimate of the trend and instability in their unit values. Any differences can be attributed to differences in marketing strategies, data inaccuracies and unequal sample sizes.

The results for Fiji will be considered in some detail to illustrate the method and the significant features of the other cases will be noted. For Fiji two merchandise exports have been included - sugar (the major export) and coconut oil - plus the tourist volume, as an important other goods and services credit.[10] Taking total exports, the estimated 7.4 per cent trend growth rate in unit values when added to the 2.4 per cent trend in quantities, yields a 9.8 per cent trend in total export receipts. Of the two components, unit values have the higher instability index scores, and this is reflected in the decomposition of the variation in total export receipts. The deviations in quantities and unit values are significantly negatively correlated,[11] tending to stabilize total receipts. Similar conclusions apply to the individual export items, where quantities again are more stable than unit values, and deviations in the two are negatively correlated. The sugar unit value is more stable than that of coconut oil, but the opposite holds for their respective quantities. It is interesting to note that while tourism is

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[9] Spurious variations in unit values due to shifts in the composition of non-homogeneous exports should not be a major difficulty with these product categories. For further evidence on price variability see Appendix 3.B in Guest (Chapter 3 in this volume).

[10] In 1982, 'travel' credits were 52.3 per cent of other goods and services credits.

[11] This is the opposite result to that for the countries included in Moran's (1983) credits.

growing more rapidly than the two merchandise exports it is also less stable. An indication of the interrelationships among these deviations from trend is given by their correlation matrix. In addition to confirming the features noted above, this shows that deviations in the unit values of the two merchandise exports are positively correlated, but that deviations in the quantities of all three exports are negatively correlated. The implication is that the interaction of unit value deviations tends to amplify total instability, while that among quantities tends to dampen it. Of course the coconut oil-sugar correlation is insignificant, so that it is largely through offsetting movements in sugar and tourism that any stabilization would occur.

For Solomon Islands, Appendix Table 4.A.5 has data on three merchandise exports - copra, timber and fish; and once again tourists. An outstanding feature in this case is the high estimated trend rates of growth in both unit values and quantities of timber and fish exports. When summed, these estimates imply a trend rate of growth of export receipts in each category of well over 20 per cent. For these fast growing exports, quantity instability is more pronounced than that in unit values, but the two are again negatively correlated. While tourism is quantitatively the most stable export of those considered, the tourist sector is very small. Turning to the correlation matrix, unit values are positively correlated as for Fiji, but only that between timber and copra is likely to be significant. The quantity deviations have a mixed pattern, with copra and timber, and tourists and fish negatively correlated, and copra and tourists positively correlated.

Tonga exhibits a disturbing feature (one shared with Western Samoa) in that the estimated trend growth rates in the quantities of both its copra and dessicated coconut exports are negative. Unit value instability still exceeds that in quantities, although the difference here is not large, and price and quantity deviations continue to be offsetting. Once again unit value deviations are significantly positively correlated, while the correlation between quantity deviations is negative but insignificant.

Vanuatu's exports have characteristics that are by now familiar. The instability in unit values exceeds that in quantities for copra and cocoa, with the converse holding for the fast growing fish exports. Again tourism is quantitatively the most stable export. Copra and cocoa price and quantity deviations are positively correlated, which tends to amplify instability in total receipts.

As noted above, Western Samoa's copra and cocoa exports have negative trend growth rates, and this is reflected in total exports. Unit values exhibit more instability than quantities, both in the aggregate and for the individual exports. As for

Fiji, the negative co-variance between total export price and quantity deviations implies reduced instability.

Appendix Table 4.A.5 indicates five features of export instability. First, in aggregate it appears likely that price and quantity deviations from trend are negatively correlated, and hence tend to offset each other in total export receipts. Naturally the same must apply to the majority of individual export products. Second, price instability exceeds quantity instability in aggregate and in the slower growing products (sugar, coconut products and cocoa). The converse holds for the faster growing exports (fish and timber). Third, deviations in unit values are all positively correlated, which adds to aggregate instability. Fourth, quantity deviations exhibit a mixture of positive and negative correlations across commodities. Finally, both coconut products and cocoa are characterized by low, sometimes negative estimated trend rates of growth in quantity. Timber, fish and tourism appear to be the growth areas for these economies.

Two cautionary points need to be made concerning the results reported in Appendix Table 4.A.5. The instability indexes themselves reveal nothing concerning the sources of instability. However, given that domestic demand for these major exports is relatively small, and that the export volumes are relatively small in relation to world markets, it seems reasonable to suppose that price (unit value) variations are largely exogenous to these countries, while quantity variations are largely determined by domestic factors on the supply side. Of course weather conditions (e.g. cyclones) and variations in the routes taken by migratory fish species (e.g. tuna) etc., exert a significant influence on these products. The underlying causes of any significant negative correlation in quantity deviations of export products must therefore be determined before any attempt is made to exploit them for stabilization purposes. Otherwise policies designed to take advantage of such relationships may in fact only disrupt them.

Table 4.4 indicates, however, that besides the instability in the export prices they receive, the level of these prices relative to the corresponding 'world average' is so low as to be a matter of concern. While above average freight costs may be a partial explanation, the fact that the prices received by Papua New Guinea are significantly higher in all relevant cases indicates that other factors are involved. The obvious implication is that the quality of the island exports is significantly below the world average, so that significant scope remains for raising export earnings through quality improvement in traditional exports. The current marketing schemes do not appear to be generating high quality exports.

Table 4.4 Ratio of export prices to world prices for major exports in 1980

Product	Fiji	Solomon Islands	Tonga	Vanuatu	Western Samoa	Papua New Guinea
Sugar	0.76	n.a.	n.a.	n.a.	n.a.	n.a.
Cocoa	n.a.	0.81	n.a.	0.72	0.82	0.93
Coconut oil	0.81	n.a.	n.a.	n.a.	n.a.	0.91
Copra	n.a.	0.88	0.72	0.70	0.78	0.93
Coffee	n.a.	n.a.	n.a.	0.60	n.a.	1.04

Sources: Fiji: Bureau of Statistics, Current Economic Statistics, January 1983.

Solomon Islands: Statistics Office, Statistical Yearbook, 1982.

Tonga: Department of Statistics, Statistical Abstract, 1983.

Vanuatu: National Planning and Statistics Office, Statistical Indicators, 1984.

Western Samoa: Department of Statistics, Annual Statistical Abstract, 1984.

Papua New Guinea: Statistical Office, Abstract of Statistics, December Quarters 1974-84.

IMF, International Financial Statistics Yearbook, 1984.

3 Policies to counter external instability

As noted above, many approaches have been suggested for reducing the dependence of small open economies on external events. A basic drawback of the openness of these Pacific island economies is seen as the instability in world commodity markets which generates instability in their export receipts, incomes and abilities to import. This has generated an interest in both stabilization schemes and diversification policies.

Stabilization schemes. Primary exporting countries have experimented extensively with agricultural marketing schemes to achieve higher and more stable prices of individual export products (ESCAP 1983; 1980). These appear to have two objectives: first, to stabilize the incomes of (low income) producers; and second, by stabilizing domestic prices, to stabilize outputs and hence to help stabilize export receipts. Concerning the latter, it is important to note that one can only be assured that stabilizing the quantity exported will stabilize export receipts if export prices and quantities are otherwise positively correlated. However, from the previous section it is far from clear that this is the case for the major exports of these economies. If, as Appendix Table 4.A.5 suggests, prices and

quantities are otherwise negatively correlated, then such schemes could increase the instability in export receipts.[12] A further drawback is that unless prices are set at unreasonably low levels, an extended price depression[13] can easily exhaust the stabilization reserves. Certainly the history of such schemes does not lead to optimism about their success.

Since Appendix Table 4.A.5 indicates that the deviations about trend in different commodity exports are not perfectly correlated, there may be advantages to operating 'national' or even 'regional' commodity marketing schemes covering a range of exports. Such a system would require fewer reserves than a series of independent schemes. Even so, experience surely suggests that single country agricultural price stabilization schemes are better viewed as a luxury for rich importing countries than as a viable policy for relatively poor developing countries to use in stabilizing their aggregate export receipts.

As these countries are small producers on world markets, there is nothing they can do independently to stabilize world prices. Two opportunities may arise in this direction however. One is to participate in long-term supply contracts. Both sellers and buyers may gain by avoiding price fluctuations through such arrangements, but the prerequisite on the supply side is an assured supply of an assured quality. The significant quantity variability exhibited in Appendix Table 4.A.5, and quality control problems illustrated by Table 4.4, may limit such contracts to a fraction of total exports. Other opportunities may come through participation in international price stabilization agreements (such as Fiji's participation in International Sugar Agreements) or in special trading arrangements (such as Fiji's involvement in the Lome Convention's Sugar Protocol). The issue of whether or not to join international price stabilization schemes is not clear-cut for small producers. If their participation is important for the success of the scheme, or if their major markets are consumer members, and hence participation is required for their exports to be admitted to these markets, a strong case for participation exists.[14] Otherwise greater benefits may result from non-participation, since small producers can take advantage

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[12] For example, complete quantity stabilization about its trend would reduce the last two columns of Appendix Table 4.A.5 to zero. If the sum of these two terms was initially negative, the instability in receipts would be increased as a result.

[13] This apparently is a very real possibility for coconut products; see ESCAP (1983).

[14] For example, Vanuatu's non-participation in International Coffee Agreements would create difficulties for its exports in penetrating the Australian market.

of the stabilized prices without a commitment to the supply restrictions usually involved.

Given the costs and difficulties of solo micro-stabilization schemes, the possibility of macro-stabilization should be examined. In principle this should provide the first best strategy. Governments can use their foreign exchange reserves in combination with domestic monetary and fiscal policies to neutralize the effects of fluctuations in export receipts on the domestic economy. Such a strategy also has all the 'pooling' advantages of integrated commodity schemes, and, perhaps most significantly for skill-deficient developing countries, has the advantage of economizing on the use of skilled manpower. Of course a precondition for such schemes is an ability to exercise restraint in booms and the converse in recessions, but this applies to all stabilization systems.

Fortunately there are at least two international schemes which provide funds in the event of an exogenous and temporary shortfall in export receipts. The International Monetary Fund's (IMF) Compensatory Financing Facility offers temporary loans for this purpose. Countries in such balance of payments difficulties are eligible to draw up to 100 per cent of their fund quotas. This scheme has several advantages. It applies to exports in general and may even cover receipts from tourism and workers' remittances if data are available. Such assistance is additional to that normally available under an IMF Stand-By Arrangement and is subject to fewer conditions. Since May 1981 this facility has been expanded to cover imports of cereals.

The European Communities' (EC) Stabex scheme is complementary and operates in a similar fashion.[15] It compensates Africa Caribbean Pacific (ACP) countries for declines in export earnings from specified products destined for the EC market. Countries are eligible for a compensatory transfer if the product in question represents at least 2 per cent of total export earnings in the year preceding the application, and the drop in export earnings is at least 2 per cent of average exports to the EC over the reference period. The advantage of Stabex is that compensation is either repayable on concessional terms (as in Fiji), or not repayable at all.

Information on the use of these facilities by these five nations is given in Table 4.5. Fiji, Solomon Islands and Western Samoa have used the IMF's Compensatory Facility, and all countries have used Stabex. However, the small sums involved and the considerable instability that remains in both the trade balances and total credits of these countries, suggest that fuller use may be made of them.

[15] See Hewitt (1983) for a description and evaluation of the Stabex scheme.

Table 4.5 Use of Stabex and Compensatory Financing Facility

A: Gross Stabex transfers (millions of EUA[a])

	Fiji	Solomon Is.	Tonga	Vanuatu	W. Samoa
1975-79 (Lomé I)	2.115	2.174	1.208	1.431	2.837
1980-85 (Lomé II)	2.284	3.948	4.011	8.932	5.064

B. Compensatory Financing Facility balances (millions of SDR[b])

	Fiji	Solomon Is.	Tonga	Vanuatu	W. Samoa
1975	-	-	..	-	0.50
1976	-	-	..	-	1.00
1977	6.50	-	..	-	1.36
1978	6.50	-	..	-	2.25
1979	6.50	-	..	-	2.25
1980	-	-	..	-	1.97
1981	-	-	..	-	3.22
1982	13.50	1.60	..	-	2.62
1983	13.50	1.60	..	-	3.15
1984	13.50	1.60	..	-	2.65

[a]EUA = European Unit of Account. In 1979, 1 EUA = US$1.4419.

[b]SDR = Special Drawing Right. In 1979, 1 SDR = US$1.292. In 1984, 1 SDR US$1.025.

Sources: A. Hewitt (1983):Table 2); EC Commission data.
B. IMF, International Financial Statistics Yearbook, 1985.

The desirability and feasibility of additional regional stabilization schemes were recently examined by a group of experts for the South Pacific Commission (SPC 1980). Their report concluded that, given the existence of Stabex and national price stabilization schemes for individual products, a new regional scheme could have a useful role in two areas. First, at the macro level a new scheme could supplement Stabex, covering products omitted from the Stabex list[16] (where the quantity exported is too small to qualify for Stabex grants), or new products with export potential. The main products of interest not covered by Stabex are in the fresh vegetable category, but the report noted that the contribution of price stabilization to the development of new exports would be minimal unless transport and marketing difficulties were also overcome. The problem that this scheme might be perceived as partially substituting for Stabex, with a

[16]In this context it is interesting to note that the Seychelles have been pushing to have tourism included in Stabex; see Dommen (1980).

possible loss of Stabex benefits, was also noted. Second, at the micro level, a new scheme could operate as a regional reserve fund, providing finance to individual national commodity price stabilization schemes. The major difficulties here involve integration with existing national marketing schemes, whose intervention targets often differ, and whose administrators strongly desire to remain independent of any regional system. This second scheme was also envisaged as being complementary to Stabex in the sense that it aims at price stabilization rather than income stabilization, and provides funds directly to producers rather than to national governments.

Of these two proposals, the second has attracted some interest, with a recommendation at the 21st South Pacific Conference (1981) that a regional agricultural stabilization scheme be established for copra and coconut products, since these products are of most immediate concern to small, low income growers.

Diversification policies. Once the limitations on the stabilization of receipts and the growth prospects of existing exports under current policies are recognized, a natural step is to consider diversification into other tradeable goods. This strategy has had a dual focus in the Pacific as elsewhere; export diversification and import substitution. With the former, the underlying argument is the same as that for asset diversification. By relocating resources into other export products whose receipts are not perfectly correlated with those of existing exports, the variance in total export receipts can be reduced, at minimal cost, it is hoped, in terms of forgone expected receipts. As noted in the preceding section, Appendix Table 4.A.5 indicates that both the price and quantity deviations of existing exports are not perfectly positively correlated, so that the current export mix presumably captures some of the benefits of diversification. But with price deviations so highly positively correlated, the existence of potential gains from further diversification cannot be ruled out.

In general some form of diversification into manufacturing for export has been the recommended strategy. To quote the Economic and Social Commission for Asia and the Pacific (ESCAP 1983:72): ´A convincing body of empirical evidence shows that export proceeds from primary products and raw materials generally tend to be cyclically more unstable and grow more slowly than those from manufactured goods.´ From this it is typically inferred that policies to encourage the further processing of primary exports or the development of labour-intensive assembly industries are highly desirable both to stabilize overall export receipts and to extend the range of local value added activities. Given its surface attractiveness, the potential difficulties with this strategy are worth noting. First, there is the problem of selecting commercially viable new, non-correlated exports.

Second, it is clear that with limited potential output from most alternatives, due to limited resources, diversification possibilities are constrained by diseconomies of scale in both production and transportation. Third, while these countries might potentially have some cost advantages in comparison with their major export markets, they are at a cost disadvantage in other respects (e.g. basic services such as electricity supply). In the smaller islands communications are relatively poor and there is a shortage of local entrepreneurial ability which must be supplemented by expensive expatriate labour. More significantly, these countries appear to be at a significant disadvantage in most respects compared to their potential and existing East Asian competitors. This is particularly true for assembly-type activities based on imported components. It is difficult to see these economies being broadly competitive with East and South Asian exporters in the near future, given their current labour costs. Long-term preferential treatment by importers would thus appear to be necessary to sustain such activities, and may not be sufficient as the South Pacific Regional Trade and Economic Cooperation Agreement (SPARTECA) experience indicates. The further processing of selected export products may be promising in this respect. Here there are potential advantages in terms of freight savings due to the weight loss in processing, and the gains from processing foodstuffs while they are still fresh. External benefits are anticipated from the induced growth in indigenous industrial, managerial and marketing skills, and development of primary suppliers and new industries based on wastes and by-products. But even so it is important to note that the possession of a comparative advantage in a primary product does not in itself imply a comparative advantage in its processing, so that forcing the diversification and further processing of existing exports could easily involve significant resource costs and should be undertaken cautiously, and only with some assurance of commercial success.

As noted in the discussion of Appendix Table 4.A.2, all these countries have actively sought to diversify and to expand the domestic processing of their exports. The products commonly listed as potential export growth areas include:[17] coconut and palm oil; canned fruit, fish and meat; dessicated coconut and coconut cream; timber (logs, veneer, etc.); fruit juices; fresh fruit; rice; coffee and tea. In some cases these products are currently exported, but for new products or a major expansion of existing exports, several problems arise. First, there is the oft-cited difficulty of limited markets, which may constrain export growth in some cases. For example, the markets for coconut oil and coconut products are more restricted than those for copra; but smallness should help in this respect. Second, there is the problem of competitiveness with other suppliers. Canning, for

[17] See, for instance, Commonwealth Secretariat/SPEC (1978).

example, requires significant amounts of water and electricity, inputs few of these countries can provide competitively. Third, scale requirements may also limit diversification possibilities. To take full advantage of economies of scale in the crushing process to obtain coconut oil, for example, the entire copra output would be sacrificed. The result is then export substitution rather than diversification. Fourth, besides the potential increase in export volume these products represent, information on their real price growth prospects and, from an instability perspective, on their price correlations with traditional exports, is also important. The appropriate form in which resources should be exported (e.g. logs or sawnwood for timber resources) deserves careful attention. Fifth, given the transportation difficulties, it is likely that labour-intensive high value primary products which can be air-freighted represent strong growth prospects. Products such as cut flowers (orchids), tropical fruit and vanilla have been suggested. Finally, the strong possibility that promising prospects for export diversification also lie outside the merchandise export sector should not be overlooked. Tourism, the provision of communications and financial services and the export of labour (both migrants and workers) have been successful in the past.

Similar considerations apply to attempts at stabilization through the diversification of export markets. The diseconomies of transportation associated with isolation and small size are particularly relevant here. There is also the problem that, to the extent that Stabex transfers depend, now or in the future, on the volume exported to EC members' markets specifically, diversion away from these markets could have an indirectly negative effect on the stability of total receipts.

On the debit side, import substitution was once the popular strategy for reducing vulnerability to external fluctuations. By reducing the volume of imports it was hoped that 'dependence' on foreign sources would be reduced. This strategy typically involved the protection of domestic import-competing producers. Such an approach clearly involves many of the same difficulties as export diversification, in terms of product selection and the potentially high costs of resource misallocation. The diseconomies of small scale are even more binding on the import side, since sales are confined to the small captive internal market. But besides these obvious dangers, the now considerable historical evidence on import substitution in developing countries overwhelmingly suggests that, while these policies may be successful in reducing import-dependency in an aggregate statistical sense, the natural tendency to substitute the less essential items first (typically consumer goods) implies a shift in the composition of imports towards intermediate and capital goods. Unfortunately the uninterrupted supply of the latter then becomes even more essential for the smooth functioning of both the new import substitution and the old export industries. In this

sense real vulnerability to external fluctuations is often increased.[18] An emphasis on import substitution has typically been associated with low growth, even in large countries, while more outward-looking policies have often resulted in rapid growth for small countries.

Many of the other approaches suggested to reduce export instability also have their import counterparts. These include the diversification of import sources (particularly to the rapidly growing economies of Southeast Asia), the purchase of imports on long-term contracts, and even the possibility of bulk purchases of imports by the Pacific island economies collectively. Given that imports are naturally more diversified than exports, it is clear that transportation problems will hamper efforts at further diversification, and the coordination, negotiation and administrative difficulties associated with bulk purchases are likely to be severe.

5. Conclusions

The preceding sections have presented a general picture of five small, non-resource-rich, isolated countries, which currently benefit from high per capita transfer inflows, but whose major traditional exports are primary products with limited growth prospects under current policies and variable export receipts. These characteristics constrain the policy options open to their governments in meeting the growing economic aspirations of their populations. Smallness implies an unavoidable specialization in production, and when combined with a limited resource base indicates that the range of viable production activities for the economy will be quite limited. This may frustrate the career aspirations of some inhabitants, making emigration an important social safety valve. Isolation from major trade routes implies that transport costs are a significant trade barrier, further limiting the scope for diversification in both export products and export markets, as well as reducing the flexibility in marketing.

Aid and private transfer payments, besides being important sources of external receipts, also appear to have partly performed a stabilizing role in the current account. While there are natural doubts as to whether such high levels of transfers will be maintained, it should also be noted that inflows of funds of this magnitude raise the value of the domestic currency and thereby reduce the competitiveness of domestic exporting industries in classic 'Dutch Disease' fashion. Future reductions in transfer inflows would reverse this effect, thus partly generating the expanded exports necessary to replace them.

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[18] Import substitution is examined in more detail in Parry (1986).

Concern over instability in export markets has had an important impact on policy formation. It has resulted in the introduction of price and income stabilization schemes for individual products, with mixed results. The availability of compensatory grants and financing through Stabex and the IMF's Compensatory Financing Facility can undoubtedly remove much of the pressure in this area. While Stabex in particular has its limitations in terms of product and market coverage, and less than total compensation, the macro-stabilization approach appears the least distortionary of the feasible options.

Instability, plus sluggish growth in traditional exports, has also prompted efforts at export diversification. As noted above such efforts are constrained by economies of scale, with the accompanying danger that one group of exports will simply replace another with little improvement, if any, in overall prospects. At this stage, the further processing and development of products selected from existing exports and other high value added primary products seems a more promising strategy than the development of manufacturing exports based on imported components, given the intense competition from the Asian countries in the latter area. Of course international competitiveness in a primary product does not imply competitiveness in its processed form, and the danger that capital-intensive processing activities could yield little value added at world prices should not be overlooked.

Topics of interest for fuller investigation fall into several categories. For existing exports it is important to determine the explanations for the relatively low prices received, the slow growth in quantities and the instability in both prices and quantities. To what extent are they inadvertent side effects of other policy actions? Have the existing marketing schemes helped or hampered attempts to raise export quality? Should these schemes be continued much as they are, substantially modified to provide greater incentives to producers, or should they be discontinued altogether? To what degree might stabilization at the macroeconomic level, using drawings from the IMF's Compensatory Financing Facility and Stand-By Arrangements and the EC's Stabex system, supplemented by foreign exchange reserves, substitute for stabilization at the individual product level? In fact, given these international sources of funds, does export instability remain an important policy issue?

Turning to the question of diversification, the issues here involve the best directions in which diversification should proceed and the extent to which diversification away from traditional exports is optimal. Because of the Pacific islands' small size and isolation, one cannot simply look at the determinants of 'comparative advantage' and leave transportation to take care of itself. The range of potentially viable exports must be determined not only by considering competitiveness (based on resource endowments etc.), but also by looking at the

transportation pattern to see which markets can be profitably serviced. It would be useful to reconsider the products listed in Section 3 above from this perspective. Cost-benefit analysis is important for evaluating proposed processing activities.

It is also important that the consideration of potential exports should include the other goods and services category. A comparison of the anticipated price trends of prospective exports with those of existing exports and estimates of the correlations between their price fluctuations would be helpful. These would provide an indication of the effects of export diversification on aggregate export receipts and growth.

More general topics include an examination of the 'Dutch Disease' effects of the high transfer inflows on actual and potential exports. This could parallel work already done for mineral booms in Australia, Indonesia and the United Kingdom, and may provide some indication of the likely adjustments that will occur if aid flows are reduced.

Although not exclusively a trade issue, population migration is clearly important and has significant trade implications. Research on the causes and costs and benefits to both 'donors' and 'recipients' of such labour flows would be extremely useful in evaluating this option.

Appendix 4.A

Table 4.A.1 Current account statistics for five island economies, 1970-82

Fiji

	1970	1974	1978	1982
		(US$ million)		
GDP	220.2	560.0	829.4	1,206.4
Merchandise exports	62.1	142.8	184.5	251.4
Merchandise imports	-92.5	-234.5	-297.9	-440.2
Trade balance (a)	-30.4	-91.8	-113.5	-188.8
Other goods and services credits	46.9	143.5	185.1	292.1
Other goods and services debits	-33.4	-82.3	-105.1	-213.5
Net OGS income (b)	13.5	61.2	80.0	78.6
Private unrequited transfers	-1.2	-2.3	-4.0	-3.0
Official unrequited transfers	3.8	4.0	2.0	20.5
Total unrequited transfers (c)	2.6	1.7	-2.0	17.5
Current account balance (a) + (b) + (c)	-14.3	-29.8	-35.8	-92.8

Source: IMF, International Financial Statistics Yearbooks.

Solomon Islands

	1970	1974	1978	1982
		(US$ million)		
GDP	31.4	73.9	98.5	159.8
Merchandise exports	..	26.0	35.1	58.3
Merchandise imports	..	-24.0	-35.4	-59.1
Trade balance (a)	..	2.0	-0.3	-0.8
Other goods and services credits	..	..	5.3	18.2
Other goods and services debits	..	..	-20.7	-34.7
Net OGS income (b)	..	..	-15.4	-16.5
Private unrequited transfers	..	2.0	2.0	-5.0
Official unrequited transfers	..	8.0	17.2	11.8
Total unrequited transfers (c)	..	10.0	19.2	6.8
Current account balance (a) + (b) + (c)	..	5.0	3.5	-10.5

Sources: IMF, Balance of Payments Statistics Yearbooks and ADB, Key Indicators of S.M.C.s.

Table 4.A.1 (cont'd)

Tonga

	1970	1974	1978	1981
		(US$ million)		
GDP	13.6	36.4	36.3	n.a.
Merchandise exports	..	4.9	7.5	7.6
Merchandise imports	..	-10.8	-18.6	-36.8
Trade balance (a)	..	-5.9	-11.1	-29.2
Other goods and services credits	..	3.8	6.8	12.7
Other goods and services debits	..	-2.3	-8.1	-8.5
Net OGS income (b)	..	1.5	-1.3	4.2
Private unrequited transfers	..	5.1	8.6	14.8
Official unrequited transfers	..	..	..	..
Total unrequited transfers (c)	..	..	..	..
Current account balance (a) + (b) + (c)	..	0.7	-3.8	-10.2

Source: IMF Balance of Payments Statistics Yearbooks.

Vanuatu

	1970	1976	1978	1982
		(US$ million)		
GDP	..	..	..	..
Merchandise exports	..	19.8	41.5	23.1
Merchandise imports	..	-30.9	-51.2	-55.2
Trade balance (a)	..	-11.1	-9.7	-32.1
Other goods and services credits	..	11.8	23.4	49.3
Other goods and services debits	..	-17.3	-34.2	-26.0
Net OGS income (b)	..	-5.5	-10.8	-23.3
Private unrequited transfers	..	0.2	0.2	-
Official unrequited transfers	..	29.7	33.3	34.1
Total unrequited transfers (c)	..	29.9	33.5	34.1
Current account balance (a) + (b) + (c)	..	13.3	13.0	25.3

Source: ADB, Key Indicators of D.M.C.s.

Table 4.A.1 (cont'd)

Western Samoa

	1970	1974	1978	1982
		(US$ million)		
GDP	..	..	..	..
Merchandise exports	4.8	12.6	11.1	11.7
Merchandise imports	-12.1	-26.2	-47.7	-44.5
Trade balance (a)	-7.3	-13.6	-36.6	-32.8
Other goods and services credits	2.4	7.2	2.9	4.3
Other goods and services debits	-2.8	-7.6	-6.1	-9.4
Net OGS income (b)	-0.4	-0.4	-3.2	-5.1
Private unrequited transfers	2.2	7.1	12.1	18.6
Official unrequited transfers	0.4	2.7	12.0	12.3
Total unrequited transfers (c)	2.6	9.8	24.1	30.9
Current account balance (a) + (b) + (c)	-5.1	-4.2	-15.7	-7.0

Source: IMF International Financial Statistics Yearbooks.

Table 4.A.2 Commodity composition of trade for five island economies, 1965-80 (per cent)

Fiji

SITC group	Export shares			
	1965	1970	1975	1980
Food/live animals	82.8	65.3	75.2	68.1
(03) Fish + preparations	(2.5)	(7.6)	(1.3)	(5.0)
(0611) Raw sugar	(76.8)	(54.0)	(70.9)	(57.0)
(0615) Molasses	(1.0)	(0.8)	(1.0)	(3.9)
Bev/tobacco	0.3	0.6	-	-
Crude mat. (ex. fuels)	4.8	2.3	0.7	1.8
Mineral fuels etc.	-	11.0	12.1	15.3
(33) Petroleum products	-	(11.0)	(12.1)	(15.3)
An., veg. oil/fat	11.2	8.7	3.8	2.1
(4243) Coconut oil	(11.2)	(8.7)	(3.8)	(2.1)
Chemicals	-	0.4	0.4	0.4
Basic manuf.	0.6	3.5	2.6	2.2
Mach./trans. equip.	-	2.2	2.5	3.8
Misc. manuf.	0.2	2.0	1.2	0.9
Not classified	-	3.9	1.5	5.3
(971) Gold	..	..	..	4.1

Table 4.A.2 (cont'd)

Fiji

SITC group	Import shares 1965	1970	1975	1980
Food/live animals	21.0	18.7	17.4	14.2
Bev/tobacco	2.4	1.9	1.4	0.8
Crude mat. (ex. fuels)	2.4	1.4	0.9	0.7
Mineral fuels etc.	9.8	11.0	22.1	23.1
An., veg. oil/fat	1.5	1.5	1.6	1.1
Chemicals	7.9	6.5	7.6	6.7
Basic manuf.	21.2	19.5	17.9	18.7
Mach./trans. equip.	22.4	20.9	20.3	22.6
Misc. manuf.	10.5	15.1	12.7	8.5
Not classified	1.1	3.6	2.8	3.6

Solomon Islands

SITC group	Export shares 1967	1970	1975	1980
Food/live animals	1.5	1.3	24.9	41.8
(03) Fish + preparations	-	-	(23.7)	(38.1)
Bev/tobacco	0.1	-	0.5	0.2
Crude mat. (ex. fuels)	94.7	96.5	68.1	44.8
(2212) Copra	(71.2)	(52.4)	(39.6)	(17.3)
(24) Wood	(21.1)	(40.9)	(27.0)	(26.3)
Mineral fuels etc.	-	-	-	-
An., veg. oil/fat	-	-	-	10.9
(4222) palm oil	-	-	-	(10.9)
Chemicals	-	-	-	-
Basic manuf.	-	-	-	-
Mach./trans. equip.	-	-	-	-
Misc. manuf.	-	-	0.4	-
Not classified	4.2	0.6	6.1	2.3

Solomon Islands

SITC group	Import shares 1967	1970	1975	1980
Food/live animals	-	20.8	14.4	10.8
Bev/tobacco	-	6.4	4.0	3.0
Crude mat. (ex. fuels)	-	0.4	0.5	0.7
Mineral fuels etc.	-	5.6	9.9	16.0
An., veg. oil/fat	-	-	0.3	0.7
Chemicals	-	7.1	8.0	5.1
Basic manuf.	-	18.0	23.4	16.6
Mach./trans. equip.	-	30.7	29.7	39.2
Misc. manuf.	-	9.5	8.0	7.6
Not classified	-	1.2	1.9	-

Table 4.A.2 (cont'd)

Tonga

SITC group	Export shares 1965	1970	1976	1980
Food/live animals	-	44.7	36.5	31.3
(05) Vegetables and fruit	-	(42.9)	(34.6)	(27.6)
Bev/tobacco	-	-	-	-
Crude mat. (ex. fuels)	-	51.5	57.4	19.2
(2212) Copra	-	(50.3)	(51.3)	(13.2)
Mineral fuels etc.	-	1.2	-	-
An., veg. oil/fat	-	-	-	42.5
Chemicals	-	-	-	-
Basic manuf.	-	1.1	1.6	0.7
Mach./trans. equip.	-	0.3	0.6	0.6
Misc. manuf.	-	-	2.3	4.1
Not classified	-	1.1	1.5	1.6

Tonga

SITC group	Import shares 1965	1970	1976	1980
Food/live animals	-	29.1	28.3	23.6
Bev/tobacco	-	8.0	7.2	6.5
Crude mat. (ex. fuels)	-	3.3	6.2	5.1
Mineral fuels etc.	-	3.9	11.1	14.3
An., veg. oil/fat	-	-	-	-
Chemicals	-	10.1	6.0	5.7
Basic manuf.	-	24.9	17.1	19.9
Mach./trans. equip.	-	13.1	15.4	17.0
Misc. manuf.	-	6.8	8.2	7.4
Not classified	-	0.4	0.3	0.5

Vanuatu

SITC group	Export shares 1965	1970	1975	1980
Food/live animals	16.0	46.7	46.0	21.8
(01) Meat + preparations	(2.0)	(2.5)	(8.0)	(8.5)
(0311) Fish, fresh, chilled, frozen	(12.0)	(40.2)	(32.7)	(1.0)
(0721) Cocoa beans	(1.4)	(3.4)	(4.9)	(10.6)
Bev/tobacco	-	-	-	-
Crude mat. (ex. fuels)	84.0	51.8	52.8	69.3
(2212) Copra	(57.8)	(41.6)	(42.7)	(67.3)
(2837) Manganese ore	(25.6)	(2.8)	(8.5)	(0.9)
Mineral fuels etc.	-	-	-	-
An., veg. oil/fat	-	-	-	8.5
Chemicals	-	-	-	-
Basic manuf.	-	-	-	-
Mach./trans. equip.	-	1.4	-	-
Misc. manuf.	-	0.1	-	0.3
Not classified	-	-	1.0	0.1

Table 4.A.2 (cont'd)

Vanuatu

SITC group	Import shares 1965	1970	1975	1980
Food/live animals	21.7	20.5	18.3	23.1
Bev/tobacco	7.0	5.7	5.4	5.9
Crude mat. (ex. fuels)	0.9	1.6	2.0	2.1
Mineral fuels etc.	7.3	6.0	10.6	15.8
An., veg. oil/fat	0.7	0.5	0.5	0.5
Chemicals	5.4	5.5	5.9	6.3
Basic manuf.	21.6	21.2	16.7	13.8
Mach./trans. equip.	20.7	24.0	24.9	20.6
Misc. manuf.	6.5	8.6	8.9	11.8
Not classified	8.2	6.3	6.8	0.1

Western Samoa

SITC group	Export shares 1965	1970	1975	1980
Food/live animals	52.5	50.0	32.5	34.4
(05) Vegetables and fruit	(30.0)	(17.1)	(6.3)	(14.4)
(0721) Cocoa beans	(22.2)	(30.3)	(25.1)	(18.1)
Bev/tobacco	-	1.8	-	3.3
Crude mat. (ex. fuels)	41.5	42.7	62.3	59.7
(2212) Copra	(41.3)	(41.6)	(58.0)	(53.7)
Mineral fuels etc.	-	-	0.3	-
An., veg. oil/fat	-	-	-	0.6
Chemicals	-	-	-	0.5
Basic manuf.	-	-	1.3	0.3
Mach./trans. equip.	-	-	-	0.2
Misc. manuf.	0.9	1.2	3.5	0.9
Not classified	5.1	5.2	-	-

Western Samoa

SITC group	Import shares 1965	1970	1975	1980
Food/live animals	30.8	24.4	28.8	21.5
Bev/tobacco	5.5	4.4	5.4	2.6
Crude mat. (ex. fuels)	8.9	4.8	0.7	1.4
Mineral fuels etc.	3.6	3.8	8.3	16.5
An., veg. oil/fat	0.1	-	0.4	0.7
Chemicals	4.2	4.9	3.8	9.1
Basic manuf.	22.5	20.4	19.6	22.7
Mach./trans. equip.	13.9	26.6	24.9	21.0
Misc. manuf.	7.1	6.3	5.8	4.5
Not classified	2.1	4.2	2.3	-

Note: SITC = Standard International Trade Classification.

Source: United Nations, Yearbooks of International Trade Statistics.

Table 4.A.3 Trading partner shares of five island economies, 1967-80 (per cent)

Fiji

Country	Exports 1967	1971	1975	1980
United Kingdom	44.3	30.2	59.6	21.0
USA	15.4	18.8	2.0	10.5
New Zealand	5.6	6.3	8.8	10.6
Australia	5.3	3.5	3.4	2.8
Samoa	1.5	2.1	3.0	2.2
Singapore	0.7	3.5	3.2	1.7
Canada	6.3	10.6	0.4	7.1
Tonga	5.1	2.1	2.3	2.5
Malaysia	-	1.6	3.3	8.4
Japan	4.7	3.9	0.4	10.8
Largest three	66.0	60.0	72.0	42.4

Fiji

Country	Imports 1967	1971	1975	1980
Australia	27.2	26.2	28.9	30.5
Japan	15.3	17.1	15.7	14.3
United Kingdom	17.2	17.9	13.4	7.3
New Zealand	7.9	10.7	12.2	14.7
Singapore	3.0	4.0	8.4	11.0
USA	5.7	4.0	4.0	6.5
Hong Kong	3.8	3.1	2.6	1.5
India	2.6	1.8	1.3	1.1
F.R. Germany	0.9	1.3	1.1	1.1
Iran	1.6	1.9	1.3	-
Largest three	59.7	60.5	58.0	59.5

Solomon Islands

Country	Exports 1967	1971	1975	1980
Japan	38.4	57.8	29.3	26.0
United Kingdom	41.9	4.8	11.0	11.5
American Samoa	-	-	5.3	5.9
Netherlands	0.2	-	6.2	14.4
F.R. Germany	0.4	3.0	7.1	5.8
Sweden	-	-	5.5	-
Norway	-	-	5.9	-
Australia	16.2	12.2	3.8	2.3
USA	-	-	3.2	20.5
Denmark	-	-	8.1	-
Largest three	96.5	74.8	48.4	60.9

Table 4.A.3 (cont'd)

Solomon Islands

Country	Imports 1967	1971	1975	1980
Australia	44.6	34.6	35.3	30.9
Japan	5.1	25.9	13.3	19.7
United Kingdom	19.8	15.3	14.4	8.6
Singapore	2.8	2.2	9.5	14.7
USA	10.4	5.7	4.1	3.2
New Zealand	0.1	3.1	2.5	7.0
Papua New Guinea	0.5	-	3.0	5.4
Hong Kong	5.4	2.7	2.3	2.9
China	1.7	1.7	2.4	2.5
F.R. Germany	1.2	-	3.4	1.2
Largest three	74.8	75.8	63.0	65.3

Tonga

Country	Exports 1969	1971	1975	1980
Netherlands	14.6	16.0	53.1	1.5
New Zealand	30.1	34.7	20.4	29.7
F.R. Germany	4.5	15.5	7.7	-
United Kingdom	1.4	10.3	11.4	2.2
Australia	4.2	5.6	1.6	34.2
Fiji	1.0	2.0	3.3	2.8
Singapore	-	-	-	11.9
Denmark	-	-	-	-
USA	0.3	1.4	0.1	13.4
Hong Kong	0.5	0.4	-	-
Largest three	49.2	66.2	84.9	77.3

Tonga

Country	Imports 1969	1971	1975	1980
New Zealand	34.5	37.2	34.9	37.6
Australia	24.0	25.7	23.3	31.7
United Kingdom	9.8	11.8	10.3	3.5
Fiji	22.3	12.4	6.4	4.9
Japan	2.0	5.7	5.0	6.1
USA	3.2	3.1	5.7	5.8
Singapore	0.2	0.3	-	3.8
Hong Kong	1.6	1.6	2.6	1.8
Iran	-	-	1.5	-
China	-	0.2	1.2	2.5
Largest three	80.8	75.3	68.5	75.4

Table 4.A.3 (cont'd)

Vanuatu

Country	Exports 1967	1971	1975	1980
USA	14.5	37.1	28.2	..
France	47.4	34.1	43.4	..
Japan	27.7	17.8	14.7	..
New Caledonia	2.1	6.6	8.5	..
Italy	2.1	3.0	-	..
Australia	1.4	1.0	0.8	..
New Zealand	-	0.3	-	..
Fr. Polynesia	-	-	1.7	..
Denmark	-	-	1.6	..
Singapore	-	-	0.8	..
Largest three	89.6	89.0	86.2	..

Vanuatu

Country	Imports 1967	1971	1975	1980
Australia	42.4	38.8	29.9	..
France	20.8	16.4	25.1	..
Japan	7.6	12.6	7.8	..
New Zealand	0.4	5.7	4.0	..
New Caledonia	2.7	2.2	7.1	..
United Kingdom	3.2	6.6	5.1	..
Hong Kong	6.5	3.5	2.6	..
Singapore	2.5	3.0	4.1	..
F.R. Germany	0.7	1.3	2.7	..
USA	2.3	2.8	2.6	..
Largest three	70.8	67.8	62.8	

Western Samoa

Country	Exports 1967	1971	1975	1979
New Zealand	46.8	32.8	20.3	24.1
F.R. Germany	3.1	25.1	19.9	14.7
Netherlands	6.3	20.6	33.8	25.4
USA	11.4	8.7	2.9	8.8
Sweden	-	3.9	9.4	18.4
America Samoa	-	2.5	3.0	4.9
United Kingdom	21.8	2.9	0.1	-
Japan	-	-	2.0	-
Australia	4.0	0.4	3.4	1.7
Tonga	-	-	2.2	-
Largest three	80.0	78.5	74.0	67.9

Table 4.A.3 (cont'd)

Western Samoa

Country	Imports 1967	1971	1975	1979
New Zealand	27.1	31.5	27.0	24.8
Australia	23.7	19.9	24.2	16.6
Japan	9.0	14.9	11.2	11.0
USA	7.0	5.7	13.3	8.7
United Kingdom	10.8	8.0	6.7	2.5
Fiji	3.9	4.5	2.7	2.7
Singapore	0.2	2.0	5.2	5.7
Hong Kong	3.8	3.3	2.4	1.2
F.R. Germany	1.3	1.3	1.3	20.0
South Africa	4.5	0.1	0.5	-
Largest three	61.6	66.3	64.5	61.4

Source: United Nations Yearbooks of International Trade Statistics.

Table 4.A.4 Decomposition of instability in total credits and debits (per cent)

A: Total credits	Fiji	Solomon Is	Tonga	Samoa
Var(MEX)	44.4	68.2	19.4	29.8
Var(OGSC)	20.3	3.1	17.3	24.6
Var(UT)	1.8	15.8	..	..
Cov(MEX,OGSC)	34.1	7.6	19.0	23.4
Cov(MEX,UT)	1.0	15.4	..	
Cov(OGSC,UT)	-1.6	-10.1	..	
Var(PUT)			11.3	14.1
Var(OUT)			..	33.3
Cov(MEX,PUT)			9.5	-0.9
Cov(MEX,OUT)			..	-7.5
Cov(OGSC,PUT)			23.5	-11.3
Cov(OGSC,OUT)			..	-30.2
Cov(PUT,OUT)			..	24.8
B: Total debits				
Var(MIM)	64.0	48.1	54.9	81.7
Var(OGSD)	5.6	11.7	12.1	4.7
Cov(MIM,OGSD)	30.4	40.2	33.0	13.6

Table 4.A.4 (cont'd)

C: Correlations between credit and debit items

	MEX	OGSC	UT	PUT	OUT
Fiji					
MIM	0.77	0.86	0.12		
OGSD	0.54	0.76	0.17		
Solomon Islands					
MIM	0.54	-0.19	0.53		
OGSD	0.61	0.19	0.38		
Tonga					
MIM	0.64	0.92	..	0.78	..
OGSD	0.59	0.69	..	0.54	..
Western Samoa					
MIM	0.19	0.14		0.37	0.67
OGSD	0.43	0.76		0.22	-0.11

Abbreviations and sources: As for Table 4.2.

Table 4.A.5 Export instability in five island economies

Fiji

Product	Unit value		Quantity		Decomposition (%)			
	Export share[a]	Trend	Instab. ind.	Trend	Instab. ind.	U. value	Quantity	Inter-action
Total exports	100%	7.4	0.0792	2.4	0.0245	182.3	57.9	-140.2
Sugar	52%	7.1	0.0980	2.5	0.0368	116.8	43.6	-60.4
Coconut oil	8.2%	4.8	0.1195	-1.2	0.0191	94.4	15.7	-10.1
Tourists	..	..	..	12.8	0.1386	..	..	..

Correlations		Total exports		Sugar		Coconut oil	
		Q	UV	Q	UV	Q	UV
Export	UV	-0.66					
Sugar	Q	0.89	-0.39				
	UV	-0.65	0.94	-0.42			
Coconut oil	Q	-0.16	0.28	-0.20	0.12		
	UV	-0.19	0.41	-0.04	0.36	-0.13	
Tourists	Q	0.30	-0.59	-0.39	-0.40	-0.11	-0.08

Samples: Total exports (1957-83); sugar (1961-83); coconut oil (1958-83); tourists (1960-82).

Table 4.A.5 (cont'd)

Solomon Islands

Product	Unit value		Quantity		Decomposition (%)			
	Export share[b]	Trend	Instab. ind.	Trend	Instab. ind.	U. value	Quantity	Inter-action
Copra	32%	6.3	0.1565	1.6	0.0258	81.8	14.2	4.0
Timber	26%	10.4	0.0595	13.9	0.3447	33.6	174.9	-108.5
Fish	25%	11.0	0.0153	15.0	0.2320	7.4	104.1	-11.5
Tourists	..	..	..	11.3	0.0043	..	..	..

Correlations		Copra		Timber		Fish	
		Q	UV	Q	UV	Q	UV
Copra	UV	0.06					
Timber	Q	-0.35	-0.32				
	UV	0.40	0.54	-0.65			
Fish	Q	-0.04	-0.09	0.16	0.13		
	UV	-0.11	0.07	-0.06	0.24	-0.20	
Tourists	Q	0.39	-0.64	-0.18	-0.34	-0.29	-0.35

Samples: Copra (1964-80); timber (1964-80); fish (1971-80); tourists (1970-81).

Tonga

Product	Unit value		Quantity		Decomposition (%)			
	Export share[b]	Trend	Instab. ind.	Trend	Instab. ind.	U. value	Quantity	Inter-action
Copra	52.1%	4.7	0.1403	-3.9	0.1054	62.0	64.2	-26.2
Dessicated coconut	11.0%	10.9	0.0628	-2.8	0.0477	81.4	62.5	-43.9

Correlations		Copra		Dessicated coconut	
		Q	UV	Q	UV
Copra	UV	-0.23			
Desiccated coconut	Q	-0.10	0.05		
	UV	-0.37	0.68	-0.30	

Samples: Copra (1964-80); dessicated coconut (1966-80).

Table 4.A.5 (cont'd)

Vanuatu

Product	Unit value		Quantity		Decomposition (%)			
	Export share[b]	Trend	Instab. ind.	Trend	Instab. ind.	U. value	Quantity	Interaction
Copra	44.5%	4.5	0.1509	0.3	0.0426	57.6	16.9	25.3
Fish	34.3%	8.8	0.0178	5.4	0.1869	9.9	98.1	-8.1
Cocoa	3.9%	8.7	0.1478	-0.1	0.0843	41.8	24.3	33.8
Tourists	..	..	..	7.2	0.0247	..	..	..

Correlations		Copra		Fish		Cocoa	
		Q	UV	Q	UV	Q	UV
Copra	UV	0.39					
Fish	Q	-0.41	-0.27				
	UV	0.13	0.21	-0.12			
Cocoa	Q	0.26	0.08	-0.08	0.38		
	UV	0.46	0.53	-0.33	0.61	0.50	
Tourists	Q	0.73	0.53	-0.04	0.41	0.47	0.75

Samples: Copra (1959-80); fish (1959-80); cocoa (1959-80); tourists (1972-82).

Western Samoa

Product	Unit value		Quantity		Decomposition (%)			
	Export share[a]	Trend	Instab. ind.	Trend	Instab. ind.	U. value	Quantity	Interaction
Total exports	100%	4.0	0.1187	-1.9	0.0383	90.8	30.1	-20.9
Copra	41.6%	3.0	0.1351	-0.2	0.0786	56.7	33.5	9.7
Cocoa	30.9%	5.3	0.2661	-4.0	0.1016	108.6	43.7	-52.3

Correlations		Total exports		Copra		Cocoa	
		Q	UV	Q	UV	Q	UV
Export	UV	-0.19					
Copra	Q	0.60	0.20				
	UV	-0.11	0.88	0.11			
Cocoa	Q	0.65	-0.43	-0.18	-0.23		
	UV	-0.21	0.89	0.13	0.63	-0.35	

Samples: Total exports (1952-83); copra (1952-83); cocoa (1952-83).

[a] In 1970. [b] Average over sample period.

Sources: IMF, International Financial Statistics Yearbooks and United Nations, Statistical Yearbook for Asia and the Pacific (Tourists).

Appendix 4.B Instability indexes

The instability indexes and decompositions presented in the tables were developed in Lloyd and Procter (1983). For each variable (y), an exponential trend ($\tilde{y}$) is calculated, and the corresponding instability index (I_y) is then taken as 'the sample variance of the ratio of actual to estimated trend values'.

i.e. $I_y = \text{Var}\ [y/\tilde{y}]$

In each case $\tilde{y}$ is determined by estimating (using Ordinary Least Squares) the equation

$$\log [y] = \text{constant} + a_y t + u \qquad (1)$$

where t is a time dummy variable. From (1) $\tilde{y} = y_o$. $\text{Exp}\ [a_y t]$ where $\log [y_o]$ is equal to the estimated constant in (1).

Writing $y = \tilde{y}.e_y$, one then has $I_y = \text{Var}\ [e_y]$

Decompositions: (i) $y = \sum_i x_i$

Since $\frac{y}{\tilde{y}} = \sum_i \frac{x_i}{\tilde{y}}$, one can write

$$I_y = \text{Var}\left[\sum_i \frac{x_i}{\tilde{y}}\right]$$

$$\text{i.e. } I_y = \sum \text{Var}\left[\frac{x_i}{\tilde{y}}\right] + 2 \sum_i \sum_{i<j} \text{Cov}\left[\frac{x_i}{\tilde{y}}, \frac{x_j}{\tilde{y}}\right]$$

(ii) $y = p.q$

Then $\tilde{y} = \tilde{p}.\tilde{q} = p_o\ q_o$. $\text{Exp}\ [(a_p + a_q)t]$

and $e_y = \frac{y}{\tilde{y}} = \frac{p}{\tilde{p}} \cdot \frac{q}{\tilde{q}} = e_p.e_q$

one can then approximate $\text{Var}\ [e_q]$ by

$\text{Var}\ [e_y] \simeq \bar{e}_q\ \text{Var}\ [e_p] + \bar{e}_p\ \text{Var}\ [e_q] + 2\bar{e}_p \bar{e}_q\ \text{Cov}\ [e_p, e_q]$ where $\bar{e}$ denotes a sample mean value.

Chapter 5

The South Pacific Regional Trade and Economic Cooperation Agreement: a critique

Max Robertson

The South Pacific Regional Trade and Economic Cooperation Agreement of 1980 (SPARTECA) is a preferential, non-reciprocal agreement between Australia and New Zealand and the Forum islands of the South Pacific. The Forum islands comprise Fiji, Solomon Islands, Cook Islands, Kiribati, Nauru, Niue, Tonga, Tuvalu, Vanuatu and Western Samoa. The agreement came into force on 1 January 1981 and has been ratified by all Forum island countries. Papua New Guinea trade relationships with Australia are covered by the parallel Australia/PNG Trade and Commercial Relationships Agreement (PATCRA).

The basis of the original agreement is described in a recent revision of the Agreement and updated schedule by the Australian Department of Trade dated 31 March 1985, which sets out the objectives of SPARTECA to be as follows:

(i) To achieve progressively duty free and unrestricted access to markets of Australia and New Zealand by the Forum island countries over as wide a range of products as possible.

(ii) To accelerate the development of the Forum island countries, in particular through the expansion and diversification of their exports to Australia and New Zealand.

(iii) To promote and facilitate this expansion and diversification through the elimination of trade barriers.

(iv) To foster the growth and expansion of exports of Forum island countries through the promotion of investment in those countries.

(v) To promote greater penetration by exports from Forum island countries into Australia and New Zealand through such measures as cooperation in the marketing and promotion of goods from Forum island countries.

(vi) To promote and facilitate economic cooperation including commercial, industrial, agricultural and technical cooperation.

Pacific islands face major difficulties in exporting to Australia and New Zealand, because of the competitiveness of most

of their raw material exports with Australian products, because of quota and tariff restrictions, and because of their inability to compete with Asian exporters in labour-intensive manufactures. The initial impetus for the Agreement arose from a political desire to assist the Forum island countries. However, the problems underlying island exports were not carefully identified in the late 1970s. Australian officials instead focused on the desirability of measures to improve the access of Forum island countries to the Australian market. Protracted discussions with both Forum island and New Zealand officials led eventually to the formation of SPARTECA.

Traditionally, Australia has imported very little from the Pacific, as 1984 trade figures show (Table 5.1). Seventy-eight per cent of Forum island exports to Australia in 1984 were represented by the two principal products, phosphates and gold. As phosphate production from Nauru is expected to decline, the relative importance of other island products will increase.

Table 5.1 Value of Australia's merchandise imports from Forum island countries, 1984

Principal merchandise imports from Forum island countries	A$m	Principal source
Phosphates	53.4	Nauru
Gold	20.4	Fiji
Others (principally vegetable oils, food products, timber)	20.8	Fiji, Tonga, Western Samoa
Total imports from Forum islands	94.6	
Total merchandise imports	23,540	
Percentage of total imports from Forum island countries	0.4	

SPARTECA is only one of several trade agreements involving the Forum islands. Other trade agreements which are important to the islands are described below.

Generalized system of preferences

Industrial nations, including Japan, USA, Canada, USSR and EC operate unilateral schemes of preference providing for the reduction or total elimination of customs duties on imports from developing countries. The parallel Australian scheme is the Australian System of Tariff Preference. Most developing countries benefit from this scheme, including a number of important Southeast Asian competitors.

Most of the schemes provide for concessional entry for manufactured goods. Treatment of traditional island exports varies from scheme to scheme. Some schemes, such as those of the EC and Japan, provide for quotas on some products beyond which normal tariffs are imposed, but these do not in general apply to the islands because their output and exports are too small to affect industrial markets.

The Economic Community's Lomé scheme

The EC has evolved privileged access conditions for former EC colonies and other low income countries under a series of special conventions. Duty and quota free entry of products from Africa-Caribbean-Pacific (ACP) states into the EC is provided with certain exceptions. The exceptions largely apply to agricultural products - including beef, veal, fish products, processed fruit and vegetables - for which the EC has a common market organization. Annual quantitative limits apply to these products.

Manufactured goods face somewhat tougher rules of origin requirements than those contained in SPARTECA. Certification of origin is more complicated and safeguard clauses, similar to those of SPARTECA, operate.

SPARTECA

Key features of the 1980 Agreement as it applied to Australia include:

1. Nomination of a list of products (Schedule 1 to the Agreement) permitted duty free and unrestricted access to the Australian market. This list contained many products which can potentially be exported from the Pacific islands.

2. Nomination of a further list (Schedule 2 to the Agreement) of products to which duties and quotas apply. These include passionfruit pulp, other fruit products, timber and fabrics. Some had already been exported to Australia when SPARTECA was introduced.

3. Any product which is omitted from both lists receives the developing country tariff applying to that product.

4. Rules of Origin (Article 5) - Australia regards goods as originating in a Forum island if the goods are either: (i) unmanufactured raw products, or (ii) manufactured goods, where 'not less than 50 per cent of the cost of goods is represented by labour or materials from one or more Forum island countries or Australia'. A 'request for exemption' paragraph to Article 5 (paragraph 3) permits Australia or New Zealand to waive the 50 per cent rule if they choose to do so. Despite two island requests for this to occur, Australia has not waived the 50 per cent rule since the Agreement was introduced.

5. Exceptions to the Agreement - the Australian and New Zealand governments have defined several categories of exceptions to the Agreement. These include goods affected by quarantine regulations, revenue or excise duties, and dumping prohibitions.

6. Procedures exist to alter the lists of products permitted duty free access.

7. Assistance is to be provided to the islands in export development and trade promotion.

8. A Regional Committee on Trade was established to review the operations of SPARTECA.

SPARTECA is similar to the EC-ACP arrangements in most respects. Rules of origin and their certification are more favourable in Australia. The principal difference lies in (i) the absence of quotas on tropical foods in the EC scheme (because these products do not compete with European products), and (ii) the larger quotas existing in the EC.

The administration of SPARTECA, 1981-85

The value of SPARTECA to the Pacific countries can be asesed by examining the trends in exports to Australia over the period 1981-85 (Table 5.2).

Table 5.2 Value of imports to Australia from Pacific islands, 1980-84 (A$'000)

Country	1980	1981	1982	1983	1984(p)
Cook Is	136	81	64	12	67
Niue	9	18	17	20	11
Fiji	18,895	16,232	23,659	26,366	36,180
Kiribati	544	190	24	16	56
Nauru	68,397	62,790	55,097	77,674	53,427
Solomon Is	1,107	990	831	1,013	1,238
Tonga	2,845	1,579	1,716	1,805	2,538
Tuvalu	5	28	6	7	38
Vanuatu	34	199	237	116	230
Western Samoa	692	374	983	1,874	2,339
Total[a]	92,664	82,481	82,551	108,776	95,969

(p) Preliminary and subject to revision.

[a]Colums may not add to totals because of rounding.

Source: Australian Bureau of Statistics.

Several points can be made with reference to the table:

1. In aggregate terms, exports to Australia from the smaller island countries - Cook Islands, Niue, Kiribati and Tuvalu - are insignificant, and do not appear likely to grow appreciably.

2. Solomon Islands, Tonga, Western Samoa and Vanuatu all export to Australia. However, only Western Samoa displays a trend increase over the 1980-84 period. There are two major reasons for Western Samoa's success, namely a joint venture wood veneer factory in Western Samoa, and a successful fruit and vegetable export industry from Western Samoa to Australia, based on taro and coconut, coordinated with a retail store promotion campaign in Australia.

3. The dominant exporters to Australia are Fiji and Nauru, which together accounted for between 93 per cent and 96 per cent of total exports to Australia during the period 1980-84. As previously noted, Nauru exports are entirely phosphates, while Fiji's exports are dominated by gold. Fiji has shown a significant growth trend since 1981. This reflects considerable growth in a number of other exports. The most important of these are coconut oil, leather products, timber, clothing and molasses.

4. Total exports declined between 1980 and 1982; they then increased in 1983 largely because of increased sales of phosphates, and fell again in 1984. In total the record has been a poor one.

The Forum island countries depend heavily on Australia and New Zealand for imports (see Appendix 5.2). Typically between one-quarter and one-third of total imports to each country come from Australia. Presumably this largely reflects the relatively short distance between the islands and Australia and New Zealand as well as cultural and political bonds. However, apart from Fiji and Tonga, Australia is insignificant as an export destination. As Appendix 5.5 indicates, the shares of exports to Australia are very low and quite stable. It is reasonable to regard the 1979-80 shares as indicative for later years. They confirm the point that the EC, Japan and the United States are far more important as export destinations (Table 5.3).

Table 5.3 Share of Forum island countries' exports to Australia, 1983

Year	Country	Per cent	Total merchandise exports 1983 (US$m)
1979	Western Samoa	1.7	11.7
1971	Vanuatu	3.0	23.1
1979	Tonga	34.2	7.6 (1981)
1979	Solomon Islands	2.3	58.3
1984	Fiji	17.1	197.0 (1984)

Source: Falvey (Chapter 4, this volume).

Since 1981, the Agreement and Australian administration of it has been subject to growing criticism from island governments. There have been a number of separate grounds for these criticisms.

1. In practice, the liberalization of access provisions in the initial SPARTECA have not been very generous

As indicated by Sutherland (1983), the positive list used by Australia has created considerable frustration amongst Pacific exporters. The positive list which the islands were potentially able to produce excluded some products from SPARTECA concessions. These products included soya sauce, plastic garments, rubber rainwear and ballpoint pens, all potentially products that the islands could produce, and mechanical digging equipment, which is currently produced in Tonga.

The Australian Second Schedule maintains restrictions on some of the few products which the Forum islands could realistically expect to export. The products include timber, passionfruit pulp, furniture components, and clothing.

Clothing. Clothing manufacture is an industry which several Forum island countries believe, somewhat optimistically, has significant export prospects. It is the product category in which there is the greatest gap between high island expectations and mediocre levels of exports, and therefore is likely to cause political problems for Australia in the future.

Australia has a tariff quota system applying to household textiles, apparel and footwear, operating from 1 January 1982 for seven years. Quotas were initially based on imports in 1979-80. Eighty-five per cent of the quota was allocated to importers on the basis of historical performance. This is mostly held by large retailers such as Coles and Myers. The balance (including quota based on market growth) is sold by tender. Clothing can be imported by companies or individuals who do not have quota holdings but this attracts penalty rates of duty.

Since 1981, the Forum island countries have enjoyed a 'seed' quota for clothing products of 66,000 units per annum which can be imported to Australia duty free. This seed quota is in excess of the global quota held by Australian importers. The purpose of the quota from Australia's viewpoint is to help in market testing, to encourage follow-up orders from Australian importers with quota entitlements. Major problems have arisen in ensuring a fair sharing of the quota among Forum island countries. In 1981, Fiji (the only Forum island country with significant capacity in clothing manufacture) used the whole quota. More recently the South Pacific Bureau for Economic Cooperation (SPEC) has allocated the quota among Fiji, Vanuatu, Tonga and Cook Islands. However, only Fiji has fully used its entitlement.

With the exception of two companies, Fijian clothing exporters have found it difficult to interest Australian clothing importers in using part of their global quota to import Fijian clothing products. This reflects the belief of most quota holders that Fijian clothing is not of export quality and is not price competitive despite its 40 per cent duty advantage compared to clothing from Southeast Asia.

Australian authorities have pointed out that the global quota system gives the Forum island countries the same access to the Australian market as is provided to exporters from other developing countries. In practice, new suppliers in countries such as Fiji face difficulties. Established importers holding base quota have generally been unwilling to buy island clothing. Prospective importers who do not have quota entitlements find it uneconomic to purchase tender quota, because Forum island clothing

does not compete in the high value segment of the market where the cost of purchasing quotas can be readily passed on to the final purchaser.

The best Fijian manufacturers are now using joint venture partners to provide market access and production expertise. As a result, total clothing imports from the Forum islands in 1984-85 exceeded the reserved quota by 45 per cent. In the future, successful joint venture arrangements with quota holders may be expected to lead to significant export growth.

Passionfruit pulp. Total passionfruit pulp imports from Forum island countries were 100 per cent of quota in 1983 and, in 1984, 131 per cent above the duty free quota of 100,000 litres. The excess above quota was subject to 10 per cent duty. Given the size of the Australian market (estimated at 1.6m litres per annum by the Department of Trade), the extreme price competitiveness of this market, and the importance of this product to Forum island countries, particularly Western Samoa, the existing level of quota appears far from generous. The 10 per cent duty applying to imports in excess of quota appears likely to have inhibited exports, in 1983 and 1984, in this highly competitive market. Other problems in growing passionfruit efficiently and in shipping have also affected this product.

Plywood. Fiji plywood exports have been excluded from SPARTECA concessions, because the plywood is thicker than the 5.5mm maximum thickness specified for duty concessions under the Second Schedule. Requests from SPEC, which is responsible for the coordination and channelling of requests for changes in the Agreement to Australian and New Zealand authorities, appear likely to produce changes in the Second Schedule so that Fijian plywood receives SPARTECA concessions in 1986.

Furniture components. Problems of definition exist. Fiji exports of CKD furniture have been denied SPARTECA concessions because the products did not fit the Australian definition of furniture components. It is understood that this restricted furniture exports throughout 1984-85.

In contrast to Australia, New Zealand established an eligibility list on the exception principle - that is, only a small number of nominated products were excluded from concessional entry. This has proved far simpler to administer, and has caused few political problems for New Zealand.

2. The value content rules are severe and have been administered unsympathetically

As described, SPARTECA provides for duty free access for unmanufactured goods. Manufactured products must contain at least 50 per cent Forum island or Australian content to be admitted under SPARTECA provisions, providing this content is derived from (i) a Forum island country, or (ii) one or more such countries and Australia.

The 50 per cent rule restricts opportunities to engage in labour-intensive light assembly activities, with the object of exporting to Australia. To meet the 50 per cent rule raw materials for these activities often cannot be bought from the cheapest international supplier, but instead Australian suppliers (despite non-competitive pricing) must receive preference. Thus SPARTECA has been of benefit to some Australian exporters - principally of paper and textiles. A lower level of Forum island content would be of material benefit in encouraging the kind of light manufacturing to which the islands are best suited. The 50 per cent rule penalizes efficiency because the islands find it more difficult to satisfy the 50 per cent rule as they lower their costs.

Article V, Section 3.a. contains a provision to reduce the value added content below 50 per cent in special circumstances. Surprisingly, only two applications have been made since 1981. Both were rejected. One application related to the importing of Viyella material from the UK to Fiji for the manufacture of very high quality men's shirts to be exported to Australia. Owing to the very high cost of the raw material, manufacture could not meet the 50 per cent test. The second instance related to the importing of engines from Japan for the assembly of air compressors in Fiji to be exported to Australia. Again, the cost of imported materials prevented the assembler from achieving 50 per cent local content. In both cases the Australian Government adopted a very severe interpretation of SPARTECA. As a result of the failure of these two applications, it is perhaps understandable that Forum island officials feel SPARTECA is being administered in a somewhat harsh and unsympathetic manner.

Analysis of the export performance of Forum island countries indicates that, by value, exports of raw products, or semi-manufactured raw products, dominate. So far, the performance of the islands in manufacturing/assembly operations has been very disappointing. The tariff advantage which SPARTECA provides to Forum island countries is zero, or low for many of their traditional or potential exports (see Table 5.4).

Table 5.4 Tariffs applied in Australia for various products, 1984-85

Product	General rate	Developing country rate	SPARTECA	Major source 1984-85	Per cent of total imports supplied by major source (by value) 1984-85
Coconuts	Free	Free	Free	Western Samoa	62
Coconut oil	Free	Free	Free	Fiji	47
Fruit					
bananas	Free	Free	Free	Philippines	91
pineapple	Free	Free (canned, 10%)	Free	Thailand	49
avocados	Free	Free	Free	New Zealand	48
guava	Free	Free	Free		
Jellies, marmalade	10%	5%	Free	United Kingdom	28
Wood					
roughsawn	Free	Free	Free	Singapore	17
mouldings	15%	15%	15%	Malaysia	48
utensils	15%	Free (excepting Taiwan)	Free	Taiwan	35
Passionfruit pulp	10%	10%	Free	Western Samoa	..
Fish - canned	15%	15%	Free	Italy	24
Prawns	Free	Free	Free	Malaysia	42
Plywood	28-25%	28-25%	23%	Taiwan	50

As the table indicates, SPARTECA provides no tariff advantage to the Forum islands against developing countries in the export of coconut oil, coconuts and tropical fruit. Minimal tariff advantage exists in the export of canned fish, roughsawn wood and passionfruit pulp. While the Forum islands do enjoy a significant tariff advantage in exporting plywood, this is in practice heavily qualified. Quota restrictions on imports of Forum island plywood apply, under Schedule 2 of the Act. Only Fiji and Western Samoa have plywood factories, and are therefore able to take advantage of the Agreement. In practice, growth prospects in the Australian market are best for specialized types of plywood which cannot yet be manufactured in either Fiji or Western Samoa - such as plastic-coated formwork ply. Consequently it appears unlikely that SPARTECA will lead to significant growth in sales to Australia.

3. Smaller Forum island countries consider that SPARTECA has little to offer them

Export statistics for 1981-84 (Appendix 5.4) suggest that the smaller islands have not been able to benefit. It is very difficult to see how a trade agreement with Australia, which offers liberalized access to products they cannot export competitively, can ever make much impact on income and employment in the small Forum island countries. Articles 8 and 9 of SPARTECA contain explicit recognition of the need for special treatment of smaller Forum islands. At present A$200,000 per annum is provided to the Forum island countries for Article 8 activities. Much of this is spent on trade fairs and other marketing assistance. Traditionally, very little of this allocation is spent on the smaller Forum islands, whose export activities are very limited.

In summary, the Forum island countries (apart from Fiji) should regard SPARTECA as being of minor importance to their economic development. Their export performance over the last four years, and the absence of new foreign investment in any of the Forum islands which can be attributed directly to SPARTECA concessions suggests that SPARTECA, as it now operates, can only have a limited impact.

The Forum islands face four broad sets of development options. These are: (i) further expansion of traditional agricultural exports - such as coconut, logs, fish, palm oil, fruit and fruit juices; (ii) further secondary processing of these traditional exports - such as sawnwood, veneer, furniture and canned foods; (iii) assembly-type operations based on imported raw materials - such as clothing manufacture; and (iv) expansion of service activities such as tourism and (in Vanuatu) banking and finance (see also Falvey, Chapter 4 in this volume).

Schedule 2 of SPARTECA inhibits the second option and the 50 per cent local content rule is a barrier to the development of the third option. The first option is by far the best one. The islands are small suppliers to world markets which are growing. However, island supplies are inhibited by neglect of agriculture and inappropriate marketing (Fisk 1986). This is not however the perception in the islands, where the second and third options are favoured. While some good prospects exist in these areas, long-term success demands policy changes both within the islands and amongst their trading partners. Widespread recognition of this has created the pressure leading to the changes in SPARTECA announced in August 1985.

Changes in SPARTECA, August 1985

A Pacific Heads of Government Meeting was held at Raratonga, Cook Islands on 5 August 1985. At this meeting, the Australian Prime Minister, Mr Hawke, announced substantial alterations to SPARTECA, to apply from 1 January 1987. The changes are as follows:

1. Access to the Australian market is to be provided on a duty free unrestricted basis to all exports from Forum island countries, other than those products to which Australian sectoral policies currently apply. The latter products are textiles, clothing and footwear, sugar, steel and passenger motor vehicles.

2. The Rules of Origin clause is to be changed. If the New Zealand content is to be incorporated in Forum island products exported to Australia, then 25 per cent of the manufactured cost must be Australian. The balance can be from any country.

3. The two positive lists are to be replaced by a negative list, restricting imports in the four categories to which global policies apply. In practice clothing is the item on the negative list which is of most practical significance.

4. The clothing 'seed quota' of 66,000 units is to be maintained for the next three years. Apportionment of the seed quota will continue to be made by the Australian Department of Trade, as in 1984-85.

Only those New Zealand products which are traded duty free on an unrestricted basis under the Closer Economic Relations (CER) agreement can be included in the 25 per cent New Zealand content figure for the calculation of manufactured cost. All other products (listed in the lengthy Schedule 5 of Australian Customs Tariff) attract the duty currently applicable. In 1991, when all products traded between Australia and New Zealand will have become free of duty, there will be no products remaining on Schedule 5, and the 25 per cent New Zealand content will apply to all

products. In the interim several important sectors, in particular the textile, clothing and footwear industries, remain restricted by their inclusion in Schedule 5.

This qualification is of some significance. It will discourage entrepreneurs from establishing assembly operations based on New Zealand raw materials in the islands specifically for the Australian markets, at the same time indicating the extremely cautious and unsympathetic approach to the Agreement taken by some Australian administrators. The 25 per cent Australian content option still encourages Australian sourcing, at above world costs. Assembly or manufacturing activity based on imports of raw material from third countries is still discouraged.

The proposed changes indicate a moderate liberalization of the access provisions. Two limits on access to the Australian market remain; however, these are required for reasons of national policy and are unlikely to alter:

(i) Quarantine regulations prevent the importation to Australia of tropical fruit products from islands which have not been designated disease-free. While Australian quarantine regulations are applied consistently to all countries, these rules are of particular significance to those Pacific island nations which have not clarified the pest status of their fruit-growing areas. This is a matter for action by the islands which are affected.

(ii) Despite requests from Fiji for exemption, excise requirements remain. Liquor will continue to attract a duty equal to the excise levied on Australian producers. Other trade agreements, such as Lomé, contain similar provisions.

Mr Hawke announced at Rarotonga that Australia would establish an interdepartmental committee to evaluate the prospects of achieving a CER agreement including the Forum island countries. This announcement created considerable interest in Australia and the islands. Arguments which have been advanced in favour of including Forum island countries include the following:

Security of investment. Once introduced, a CER agreement such as between Australia and New Zealand is very difficult to dismantle. This provides investors with a high degree of confidence that there will not be any unexpected changes in the ground rules. At present, Article 7 in SPARTECA states that the Australian Government may change the levels of duty concession provided under the SPARTECA provisions. While this has not happened and it seems very unlikely that this would occur, the possibility could create an element of uncertainty in the minds of potential investors, possibly inhibiting them from investing in the Forum islands.

Opposing protectionism. Some Pacific island countries, particularly New Guinea and Fiji, are becoming increasingly protectionist, despite the failure of import substituting policies in many developing countries. They are looking to import replacing industries as the basis of their development. A CER agreement could help to discourage this trend to resource misallocation.

The reciprocity requirements of a CER agreement would compel the reduction of trade barriers in all participating countries. However, the experience of the Caribbean (CARIFA and CARICOM) suggests that it would do little to boost intra-regional trade. The whole Pacific-Australasian market is not large by international standards. Some processing industries, such as canning and biscuit manufacture, can be established in the islands, but major industrialization gains cannot be expected. The production of agricultural products and labour-intensive processing and manufacturing for world-wide markets has a much greater potential.

A number of major problems which would have to be addressed by Forum island countries if they were to seriously consider membership of a CER agreement include:

(i) The problems of reciprocity. The ANZCER provides for the progressive abolition of all customs duties and other trade restrictions by 1991. This has important implications for the Pacific islands. They would have to remove customs duties, which are currently levied on most imports. These represent a significant share of public revenue in most Forum islands.

(ii) The few import replacement industries that exist in the Pacific with high protection would face increasing competition from lower priced products from Australian and New Zealand manufacturers whose economies of scale outweigh the freight costs involved. New Zealand dairy products, cement and poultry, would undercut existing industries in the islands. Thus a CER agreement would be extremely difficult to achieve.

(iii) Common technical standards do not apply throughout the Pacific. Unlike Australia and New Zealand the Pacific islands have a great diversity of technical standards in most products. This lack of commonality is likely to complicate the process of integration.

In summary, the Forum island countries are unlikely to secure significant benefits in terms of employment and income generation from a CER agreement. The existing and potential level of trade with Australia does not appear to be very substantial as a proportion of Forum island exports.

Broad conclusions

The statistics of Forum island exports to Australia in 1980-84 do not indicate that SPARTECA has had an impact on export and output levels. The further relaxation of access to the Australian market announced in 1985 is not likely to make a noticeable impact on exports. A number of important factors apart from access restrict exports from Pacific island to Australia.

Lack of price competitiveness

A number of the most important Forum island exports, including coconut products, tropical fruit and fruit juices, attract no duty, or marginal rates of duty from the developing countries with which the Forum islands compete. Consequently the duty-free access available under SPARTECA does not give a competitive advantage in these products to the Forum islands.

Australian importers will continue to buy from the lowest cost producer. As indicated by the trade statistics, Western Samoa and Fiji dominate sales of coconuts and coconut oil to Australia. However, apart from the traditional island products, the islands are clearly not the lowest cost producers for any products. Consequently the developing countries of Southeast Asia, with their very high labour productivity, commitment to quality, relatively low though rising wage rates, and economies of scale can be expected to dominate in most product categories. This situation appears likely to continue in the foreseeable future.

Scarcity of marketing and management expertise

Forum island countries have a severe shortage of skilled manpower with management and marketing skills. A large proportion of skilled manpower is employed at relatively high wages in government administration. Lack of entrepreneurship has seriously inhibited sales of non-traditional products including furniture, clothing and canned foods. The need to tailor products to provide the styles and packaging most popular with Australian buyers has been widely neglected. There is also a market channel access problem.

It is naturally difficult to persuade an Australian importer to switch from any existing source to an unknown supplier, unless there is a significant advantage (in price/quality, delivery terms etc.) by doing so. Many island exporters are not price/quality competitive.

Supply constraints

Apart from clothing manufacturers in Fiji, and timber manufacturers in Fiji and Western Samoa, most Forum island exporters cannot consistently supply large volumes of high quality products to Australia. The small volumes they do export prevent them from achieving economies of scale in transport costs and discourage Australian importers looking for volume and continuity of supply.

The extremely limited factory capacity in the Pacific island countries indicates the redundancy of the safeguard clauses in SPARTECA. The Pacific islands do not have the installed capacity in any industry to seriously threaten the viability of Australian manufactures, and this appears unlikely to change at least in the short term. This does not appear to be recognized by some Australian Government officials responsible for the administration of SPARTECA, particularly those of the Department of Industry, Technology and Commerce.

In recent years much of the Pacific has been affected severely by cyclones. This has prevented exporters from meeting market requirements for fruit and vegetable exports and created an image in the Australian market of Forum islands as unreliable suppliers.

The lack of interest of island trading companies

Trade in the Pacific has traditionally been dominated by Burns Philp, Steamships, and WR Carpenter. These firms are now finding their island activities unprofitable and appear keen to reduce their presence in the Pacific. While a number of joint venturers and island (particularly Indian) entrepreneurs have been attempting to step into this vacuum they have lacked the expertise, resources and market contacts in Australia which the island trading companies enjoy.

Exchange rate effects

The currencies of most Forum island countries have been appreciating against the Australian dollar over the last two to three years. This has seriously inflated export prices and reduced the competitiveness of island exporters. Cheaper substitutes are available from Asian exporters, whose currencies have appreciated more slowly against the Australian dollar.

Competitive domestic producers

With the exception of coconuts, most Pacific products can be (and are) produced in Australia. In many cases, Australian producers are efficient, understand their customers, have low freight costs, and are well able to tailor products to meet the requirements of individual buyers. The Pacific islands would have to have low labour cost, that is high labour productivity, to compete.

Pacific exporters will need to develop a reasonable level of market sophistication and work to identify market niches, in order to avoid head on competition with low-cost Australian or Asian competitors. This could be done in two ways: first, by making the most effective use possible of the marketing expertise within the South Pacific Trade Commission office in Sydney; second, by working with customers to identify ways to tailor or modify products so as best to meet customer needs.

Shipping logistics

In the absence of any pooling arrangements, most Pacific exporters are unable to provide sufficiently large volumes to enable economic shipping arrangements to be made. By contrast, Australian suppliers have available very economical road freight. Consequently domestic producers of tropical fruits and vegetables can offer overnight delivery terms to the major markets. Sea freight to Australia is time-consuming and subject to various delays. Most clothing and tropical fruit is not transported to Australia by air. Air freight has been found to be competitive in other parts of the world, but air freight rates are only competitive from Fiji. This reflects the inappropriate airline policy applying in the Pacific (Forsyth, Chapter 6 in this volume).

The limitations of SPARTECA

While detailed assessment of the value of the recent changes to SPARTECA must await its introduction in 1987, it seems likely that the Agreement will not generate significant additional trade, and will therefore be of marginal impact only on income and employment in the Forum island countries.

Access is not a crucial problem for most Forum island products. The Forum islands currently enjoy, and, as indicated by the low levels of developing countries tariffs, have always enjoyed low levels of tariff for traditional island products. The basic difficulty faced by the Forum islands in exporting products other than coconuts and coconut oil is their inability to compete

on price with aggressive developing countries. In general the Forum islands do not have the skills and the investment in modern factory machinery needed to compete effectively. They have been unable to secure the foreign investment needed to compete vigorously in export markets, because they have low levels of labour productivity, high wage costs, and various institutional obstacles such as land tenure problems, which have retarded development.

All Forum island countries require basic policy decisions on exchange rates and manpower policy, to provide stronger incentives for investment, in both traditional and non-traditional exports. Tax holiday and similar incentives are not an alternative: they merely waste government revenues. Costs have to be lowered and product quality improved. Until this occurs, the Forum islands will continue to face difficulties in competing with Southeast Asian exporters.

Irrelevance to the smaller Forum island countries. The smaller Forum countries have very limited resources and no significant export industries. Statistics covering their exports to Australia in 1980 and 1984 are contained in Appendix 5.4. The access provisions of SPARTECA are clearly of limited value to them. Their perception that SPARTECA is an agreement of primary benefit to Fiji is no doubt correct. However, it is difficult to see what the Australian Government could do to structure a trade agreement for their benefit.

Assistance to these smaller Forum island countries will no doubt continue predominantly in the form of development assistance as in the past. Firm-specific aid as provided for by Article 8 of SPARTECA is difficult to provide in the smaller Forum islands except in the area of tourism.

In summary SPARTECA as amended offers the Forum island countries minor reductions in barriers to access to the Australian market. However, there are a great number of other factors which will have far more influence on the future prosperity of the Forum islands than SPARTECA. These factors include:

(i) The future of the Australian system of Tariff Preference for Developing Countries. If, as expected, the Australian Government reduces the margin of developing country preference, Forum island exporters of products on which the standard rate of tariff is high - such as plywood - will benefit. However, many Forum island exports are products attracting low rates of tariff from both developing countries and all other countries, and would therefore be unaffected.

(ii) As discussed, the competitiveness of island exporters suffers from a lack of investment in efficient technology. There is a need for greater flexibility and a stronger commercial

orientation in the administration of the Australian Government's 'joint venture scheme'. This scheme could be used to encourage the establishment of ventures in which Australian companies could provide manufacturing expertise and market access. However, to this point the scheme has been a disappointment. Private (i.e. non-government) joint venture agreements have been difficult to achieve, and few of significance have been launched, largely owing to problems in the scheme's administration by the Australian Development Assistance Bureau (ADAB).

All the Forum islands have strong potential as tourist destinations (Dwyer, Chapter 7 in this volume). There is scope on all the islands for the upgrading of tourist facilities and the establishment of an industry of far greater significance than at present. This would require the coordination of airline operations, foreign investment policies and the development of overseas marketing programs. Tourism potential lies in the fact that the Forum islands have a natural appeal (and convenience) to Australian and New Zealand holiday travellers.

Most Forum island countries have not vigorously publicized the opportunities they can offer to joint venture investment in processing and manufacturing for export. There is need for clarification of investment guidelines, and better publicity of export-oriented investment opportunities. However, the profitability and hence the attractions of joint venture depends partly on factors beyond the influence of the Forum islands such as the conditions applying to double taxation agreements.

SPARTECA encourages the Forum islands to look to Australia and New Zealand, both as a source of raw materials for manufacturing, and as the ultimate destination for exports. In that respect it diverts rather than creates trade. However, the Forum islands enjoy substantial concessions under the terms of the EC's Lomé agreement, and under all industrial countries' GSP schemes. The opportunities in these larger markets appear to be substantially better than in the very small markets of Australia and New Zealand. Clearly, as the trade figures indicate, there are good markets for most Forum island products including timber, coconut, tuna and passionfruit in the EC, Japan and the United States. It is clear therefore that the introduction of the revised SPARTECA in January 1987 is not likely to be of more than marginal benefit to the islands.

Politically, SPARTECA holds quite grave dangers for Australia. The island nations have been led to expect major trade gains through the agreement. These are not likely to eventuate (even from the revised scheme), certainly not in the short run. Australia should expect a backlash of frustrated expectations as a result of the Agreement as it stands.

Appendix 5.1 Australian imports under SPARTECA (A$)

Country	1980	1981	Per cent change 1980/81	1982	Per cent change 1981/82	1983	Per cent change 1982/83	1984(p)	Per cent change 1983/84
Cook Is	135,188	77,838	-42.4	62,528	-19.7	4,378	-92.9	60,858	1290.0
Fiji	16,854,012	15,075,602	-10.5	1,549,260	42.9	24,740,400	14.8	35,631,426	44.0
Kiribati	543,860	29,860	-94.5	13,011	-56.5	7,105	-45.4	7,093	-0.2
Nauru RP	68,376,266	68,785,056	-8.2	55,084,756	-12.3	77,660,883	41.0	53,425,125	-31.2
Niue	9,296	18,172	95.5	16,425	-9.6	19,502	18.7	10,838	-44.4
Solomon Is	663,760	816,238	23.0	638,189	-21.8	724,517	13.5	822,904	13.6
Tonga	2,843,844	1,578,725	-44.5	1,711,882	8.4	1,789,530	-9.6	2,493,674	39.3
Tuvalu	4,887	28,303	479.1	5,093	-82.0	7,309	43.5	37,661	514.3
Vanuatu	25,646	177,559	592.3	203,553	14.6	95,817	-52.9	207,159	116.2
Western Samoa	660,451	358,999	-45.6	975,291	171.7	1,541,754	58.1	1,907,088	23.7
Total	90,117,210	80,946,408	-10.2	60,259,988	-0.8	106,591,195	32.8	94,603,826	-11.2

(p) Preliminary and subject to revision.

Source: Australian Department of Trade, Working Papers.

Appendix 5.2 Forum island countries' trade with Australia (A$'000)

Exports from Australia to:

Country	1980	1981	1982	1983	1984(p)
Cook Is	766	1,293	818	565	672
Fiji	147,337	176,469	168,397	178,505	171,755
Kiribati	9,553	7,454	6,987	11,353	7,524
Nauru RP	18,412	14,461	10,471	13,679	8,367
Niue	13	179	106	98	39
Solomon Is	20,905	20,722	20,297	41,464	34,141
Tonga	6,236	8,234	6,095	7,029	5,879
Tuvalu	1,112	1,043	1,655	1,140	1,384
Vanuatu	14,373	11,641	12,800	15,717	18,864
Western Samoa	7,714	5,175	5,516	8,033	6,330
Total[a]	226,421	246,671	233,142	277,584	254,967

Imports into Australia from:

Country	1980	1981	1982	1983	1984(p)
Cook Is	136	81	64	12	67
Fiji	18,895	16,232	23,659	26,366	36,180
Kiribati	544	190	24	16	56
Nauru RP	68,397	62,790	55,097	77,674	53,427
Niue	9	18	17	20	11
Solomon Is	1,107	990	831	1,013	1,238
Tonga	2,845	1,579	1,716	1,805	2,538
Tuvalu	5	28	6	7	38
Vanuatu	34	199	237	116	230
Western Samoa	692	374	983	1,874	2,339
Total[a]	92,664	82,481	82,551	108,776	95,969

(p) Preliminary and subject to revision.

[a]Columns may not add to totals because of rounding.

Source: Compiled from information supplied by the Australian Bureau of Statistics.

Appendix 5.3 SPARTECA: Local content (Article 5), explanatory note

There are some important rules in SPARTECA about local content of products to be exported to Australia under the Agreement. One of the main objectives of SPARTECA (Article 2b) is to accelerate the development of the Forum island countries by giving firms in the islands new opportunities to export to Australia. It is not intended to help firms from other countries. Therefore the agreement sets the minimum Forum island content of a product for export to Australia under SPARTECA.

In general a Forum island country's product must have at least a 50 per cent local content to be eligible for the SPARTECA concessions.

The products covered by the agreement have been divided into 'unprocessed raw materials' and 'manufactured goods' for the purpose of determining their treatment under the Rules of Origin requirements.

Unprocessed raw materials

This type of product must originate in the Forum island countries to be able to claim the SPARTECA tariff concessions.

Manufactured products

This type of product must meet two conditions to be able to claim the SPARTECA tariff concessions:

(i) the last manufacturing process must be carried out in the Forum island country claiming the concession;

(ii) 50 per cent of the cost of producing the goods must be made up of country content from either the Forum island countries or the Forum island countries and Australia.

The main elements which can be included as production costs (i.e. 'factory or works costs') and as country content costs (i.e. 'labour and material costs') are broadly similar. The Australian Customs Service identifies the main cost components as:

Production costs ('factory or works costs'). Total raw materials, wages paid to production workers, utility costs (power, water, etc.), factory overheads (rent, depreciation, etc.), total cost of inside containers (local plus imported content of retail packaging etc.).

Country content costs ('labour and material costs'). Local raw materials, wages paid to production workers, utility costs, factory overheads, local content cost of inside containers.

Exporters must include an origin declaration on their commercial invoices appropriate to the type of good (raw material or manufactured product) if claiming concessional tariff treatment under SPARTECA. The recommended declaration format is set out below. No special form is required.

The cost components recognized as making up the local content elements for the purpose of this rule require accurate assessment, particularly so in the case of some industries (e.g. apparel) where imported raw materials may comprise a significant part of the export value of the goods. If in doubt it is important to have local content costs cleared with the Australian Customs Service.

Appendix 5.4 Australian imports from smaller island countries (A$'000)

Country	Main products	1980	1984
Kiribati	Phosphate	530	-
	Ores and metal scrap	-	49
	Works of art	14	7
	Total	544	56
Tuvalu	Works of art	5	38
	Total	5	38
Niue	Floor coverings	2	-
	Works of art	8	11
	Total	10	11
Cook Islands	Essential oils	-	1
	Pearls and semi-precious stones	127	-
	Pumps and parts	-	6
	Works of art	8	60
	Special transactions	1	-
	Total	136	67
Tonga	Fish	-	17
	Vegetables and fruit	108	41
	Sugar and honey	1	-
	Tea, coffee, spices	28	234
	Oil seeds	18	5
	Wood	-	1
	Metalliferous ores	1	5
	Crude animal and vegetable matter	-	12
	Animal and vegetable oils	2,640	2,187
	Manufactured goods	5	3
	Specialized machinery equipment	-	4
	Machinery and transport equipment	-	5
	Clothing	-	3
	Misc. manufactured articles	45	-
	Total	2,846	2,517
Western Samoa	Vegetables and fruit	90	529
	Tea, coffee, spices	92	196
	Animal feedstuffs	267	18
	Misc. edible produce	-	165
	Hides	-	22
	Oil seed	-	2
	Wood	201	180
	Metalliferous ores	31	14
	Vegetable oils	-	736
	Wood and cork manufacture	-	463
	Measuring equipment	-	7
	Misc. manufactured articles	7	8
	Total	688	2,340
Nauru	Phosphate	68,374	53,377
	Stamps	2	48
	Non-merchandise trade	20	-
	Total	68,396	53,425

Appendix 5.5 Trading partner shares of total exports and imports, 1967-79 (per cent)

Western Samoa

Country	1967	1971	1975	1979
Exports				
New Zealand	46.8	32.8	20.3	24.1
F.R. Germany	3.1	25.1	19.9	14.7
Netherlands	6.3	20.6	33.8	25.4
USA	11.4	8.7	2.9	8.8
Sweden	-	3.9	9.4	18.4
American Samoa	-	2.5	3.0	4.9
United Kingdom	21.8	2.9	0.1	-
Japan	-	-	2.0	-
Australia	4.0	0.4	3.4	1.7
Tonga	-	-	2.2	-
Largest three	80.0	78.5	74.0	67.9
Imports				
New Zealand	27.1	31.5	27.0	24.8
Australia	23.7	19.9	24.2	16.6
Japan	9.0	14.9	11.2	11.0
USA	7.0	5.7	13.3	8.7
United Kingdom	10.8	8.0	6.7	2.5
Fiji	3.9	4.5	2.7	2.7
Singapore	0.2	2.0	5.2	5.7
Hong Kong	3.8	3.3	2.4	1.2
F.R. Germany	1.3	1.3	1.3	1.2
South Africa	4.5	0.1	0.5	-
Largest three	61.6	66.3	64.5	61.4

Appendix 5.5 continued

Fiji

Country	1967	1971	1975	1980
Exports				
United Kingdom	44.3	30.2	59.6	21.0
USA	15.4	18.8	2.0	10.5
New Zealand	5.6	6.3	8.8	10.6
Australia	5.3	3.5	3.4	2.8
Samoa	1.5	2.1	3.0	2.2
Singapore	0.7	3.5	3.2	1.7
Canada	6.3	10.6	0.4	7.1
Tonga	5.1	2.1	2.3	2.5
Malaysia	-	1.6	3.3	8.4
Japan	4.7	3.9	0.4	10.8
Largest three	66.0	60.0	72.0	42.4
Imports				
Australia	27.2	26.2	28.9	30.5
Japan	15.3	17.1	15.7	14.3
United Kingdom	17.2	17.9	13.4	7.3
New Zealand	7.9	10.7	12.2	14.7
Singapore	3.0	4.0	8.4	11.0
USA	5.7	4.0	4.0	6.5
Hong Kong	3.8	2.1	2.6	1.5
India	2.6	1.8	1.3	1.1
F.R. Germany	0.9	1.3	1.1	1.1
Iran	1.6	1.9	1.3	-
Largest three	59.7	60.5	58.0	59.5

Source: United Nations, Yearbook of International Trade Statistics.

Appendix 5.5 continued

Vanuatu

Country	1967	1971	1975	1980
Exports				
USA	14.5	37.1	28.2	-
France	47.4	34.1	43.4	-
Japan	27.7	17.8	14.7	-
New Caledonia	2.1	6.6	8.5	-
Italy	2.1	3.0	-	-
Australia	2.1	3.0	-	-
New Zealand	-	0.3	-	-
Fr. Polynesia	-	-	1.7	-
Denmark	-	-	1.6	-
Singapore	-	-	0.8	-
Largest three	89.6	89.0	86.2	-
Imports				
Australia	42.4	38.8	29.9	-
France	20.8	16.4	25.1	-
Japan	7.6	12.6	7.8	-
New Zealand	0.4	5.7	4.0	-
New Caledonia	2.7	2.2	7.1	-
United Kingdom	3.2	6.6	5.1	-
Hong Kong	6.5	3.5	2.6	-
Singapore	2.5	3.0	4.1	-
F.R. Germany	0.7	1.3	2.7	-
USA	2.3	2.8	2.6	-
Largest three	70.8	67.8	62.8	-

Appendix 5.5 continued

Tonga

Country	1967	1971	1975	1980
Exports				
Netherlands	14.6	16.0	53.1	1.5
New Zealand	30.1	34.7	20.4	29.7
F.R. Germany	4.5	15.5	7.7	-
United Kingdom	1.4	10.3	11.4	2.2
Australia	4.2	5.6	1.6	34.2
Fiji	1.0	2.0	3.3	2.8
Singapore	-	-	-	11.9
Denmark	-	-	-	-
USA	0.3	1.4	0.1	13.4
Hong Kong	0.5	0.4	-	-
Largest three	49.2	66.2	84.9	77.3
Imports				
New Zealand	34.5	37.2	34.9	37.6
Australia	24.0	25.7	23.3	31.7
United Kingdom	9.8	11.8	10.3	3.5
Fiji	22.3	12.4	6.4	4.9
Japan	2.0	5.7	5.0	6.1
USA	3.2	3.1	5.7	5.8
Singapore	0.2	0.3	-	3.8
Hong Kong	1.6	1.6	2.6	1.8
Iran	-	-	1.5	-
China	-	0.2	1.2	2.5
Largest three	80.8	75.3	68.5	75.4

Appendix 5.5 continued

Solomons

Country	1967	1971	1975	1980
Exports				
Japan	38.4	57.8	29.3	26.0
United Kingdom	41.9	4.8	11.0	11.5
American Samoa	-	-	5.3	5.9
Netherlands	0.2	-	6.2	14.4
F.R. Germany	0.4	3.0	7.1	5.8
Sweden	-	-	5.5	-
Norway	-	-	5.9	-
Australia	16.2	12.2	3.8	2.3
USA	-	-	3.2	20.5
Denmark	-	-	8.1	-
Largest three	96.5	74.8	48.4	60.9
Imports				
Australia	44.6	34.6	35.3	30.9
Japan	5.1	25.9	13.3	19.7
United Kingdom	19.8	5.3	14.4	8.6
Singapore	2.8	2.2	9.5	14.7
USA	10.4	5.7	4.1	3.2
New Zealand	0.1	3.1	2.5	7.0
Papua New Guinea	0.5	-	3.0	5.4
Hong Kong	5.4	2.7	2.3	2.9
China	1.7	1.7	2.4	2.5
F.R. Germany	1.2	-	3.4	1.2
Largest three	74.8	75.8	63.0	65.3

Chapter 6

Economic problems of international transport for the South Pacific island economies*

Peter Forsyth

1 Transport in the South Pacific: the issues

The source of the South Pacific islands' transport problem is obvious. They are islands separated by great distances from other nations, and, in turn, they are separated from each other by considerable distances. Apart from this, they are small - in population, or market-size terms. Together these facts imply that transport costs between the islands, and between them and other nations, are high. This transport cost disadvantage will remain for the foreseeable future.

The problems are made greater by the interaction of distance and small size. This is because there are economies of scale in vehicle size - for ships and aircraft. Only in markets which are dense (in terms of traffic per unit period) can minimum transport costs be achieved. Thus Hawaii is distant from its markets, but the size of traffic flows to and from it enable relatively low costs. The South Pacific nations can generate only very small amounts of traffic on most routes. In terms of their transport links, they must choose between frequency and lower costs. Usually, frequent services can be maintained only if high cost, small vehicles are used. Furthermore, the transport infrastructure further limits the choice of vehicle: often the vehicle which would enable the best combination of frequency and cost has characteristics which prevent it from operating from a particular point. Throughput at a terminal (airport or port) is not sufficient to justify upgrading which would enable a more suitable vehicle to use the facility. Thus these nations must solve the next problem of deciding what level of infrastructure combined with vehicle is appropriate. All cities and countries face these problems, but they are acute in the case of the South Pacific nations.

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A corollary of this is that the route structure of the transport systems becomes very important. An improved route may enable greater traffic to use a link, leading to either larger vehicles and lower costs, or greater frequency, or some combination of both. The trade-off between direct routes and benefits from less direct routes, which enable more traffic to be carried - and hence economies - but a higher cost due to greater distance, is a critical one. It is obviously desirable that the most efficient route patterns are adopted, and a precondition for this is that there are no externally imposed constraints, such as regulation, which prevent this. Such constraints are, in fact, not very important in the case of shipping, but are very important for air transport.

Granted that these basic problems are not going to be removed, what are likely to be the key economic issues surrounding transport in the region? The high level of cost means that economic efficiency in the provision of transport services is especially important. Economic efficiency encompasses several interrelated aspects. One is productive efficiency, meaning that the outputs should be produced at minimum feasible cost. With transport services, a key aspect of this is route structure. Allocative efficiency, meaning that the right services are provided and the right prices are charged, is also desirable: there is not very much point in having efficient shipping services if these are priced way above cost. When efficiency is the question, the critical issues are market structures, forms of regulation, firm structure and the pattern of incentives. These form the substance of sections 4, 5 and 6.

In the present context, aid, or subsidies, are often given to specific projects such as for wharf or airport upgrading, or operation of transport undertakings. The question of who gains from such grants is a crucial one. It is possible for countries to specify that aid they give is used in such a way that the largest beneficiary is themselves. The effect of subsidies on various aspects of transport operation needs to be considered. Subsidies might be justified by reference to possible externalities. If so, it is desirable that the form of the aid or subsidy be such as to effectively correct the externality. Thus, in sections 2 and 3, possible externalities of the transport system, and the effects of subsidies and aid are analysed.

Transport costs affect trade patterns. The economic activities of the Pacific nations are constrained by transport costs. While this must be recognized, further examination of the relationship between transport costs and industry structure will not be carried out here in any detail. Transport costs are unlikely to change by very much, except where the development of a new industry goes hand in hand with a substantial change in traffic flows. When this is so, the development of the industry and its transport implications need to be assessed jointly (an

example is tourism and air transport). However, for many questions of trade/industrial structure, transport costs can be taken as given. Clearly, determination of comparative costs must take them into account.

In this chapter, attention is focused on international transport questions. Internal transport is also an important issue, though the restrictions on operations are not as significant as for international transport (especially aviation). Often the same sorts of problems arise in both areas, and the same type of solutions can be adopted.

2 Identifying transport-related externalities

Externalities are a potential source of failure of markets. Often countries, especially developing ones, choose not to rely exclusively on the free working of markets. They may rationalize this in terms of the failure of markets to allocate resources and produce goods efficiently. If externalities exist, it may be possible to improve on market solutions either by regulating the market, or imposing taxes or subsidies. Thus it is important to identify the possible externalities associated with transport services as a preliminary to discussion of the effects of aid or subsidies and to analysis of efficiency. A number of possible externalities can be identified; they may or may not actually be present. In some cases, they are directly related to the operation of transport systems, and, in other cases, they are indirectly linked. Some of these externalities are frequently discussed in the development literature, whereas others are of particular importance in the South Pacific.

Employment externalities. One externality which could be important is that which arises from the shadow wage rate not being equal to the market rate. Thus, workers may be paid $20 per day, but if jobs are scarce and workers are willing to offer their services at $5 per day, the market wage overestimates the social cost of employing people. Any assessment of the desirability of operating or investing in some service or project should take account of the social cost of labour, though assessments undertaken in the private sector will use the market wage.[1] Thus, in an underemployed economy, social cost of investing in an airport or wharf may be less than the cash cost, and the social cost of operating an airline or shipping service will be less than the cash cost.

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[1] On the measurement of the shadow wage rate, see, e.g., Sen (1972).

In addition to this, transport availability and prices will affect employment in other activities in the economy. A good example is tourism: if air fares are reduced, or travelling is made more convenient with direct services, more tourists may come. These tourists will create extra jobs in the tourism industry. Alternatively, suppose that shipping services are arranged so that one port is used as a hub for traffic from several nations. To the extent that economic activity is increased in one country and reduced perhaps in others, there may be externalities. Not surprisingly, all countries would wish to become the hub if positive externalities are generated. It would be insufficient to assess the relative desirability of direct versus indirect services without taking these employment externalities into account.

The greatest scope for externalities of this type to emerge would be in tourism. Building of infrastructure for transport can also generate this type of externality. Operation of transport industries, like airlines and shipping companies, is likely to require considerable numbers of skilled personnel, who will be in short supply in developing countries. The externalities which come about through increased employment are likely to be small, especially with airlines. Again, the links between industries must be recognized. More employment overall may result if a country increases tourism by relying on overseas airlines than if it operates its own airline at higher cost and charges fares which discourage tourism.

There is a danger of relying too heavily on this externality to justify propositions which are basically uneconomic.[2] Whether the shadow wage is below the market wage is an empirical question, which can be resolved by examining the way the labour markets work. Furthermore, the transport sector, and other sectors like tourism which are affected by it, may require specialized labour with skills. This labour may not be in oversupply, and the market wage will then be a good indicator of the social wage.

Foreign exchange. A second externality which could be relevant to assessment of transport projects arises if the shadow foreign exchange rate is not equal to the market exchange rate. If, in general, imports are protected, and exports not taxed, the social value of foreign exchange may exceed its market value. Thus, any generated net foreign exchange surpluses of a project should be valued at a premium. Transport projects may have significant foreign exchange effects. A national airline will pay a considerable amount of its costs overseas, but it will also

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[2] On this point, see Appendix 6.2.

generate revenue from overseas. The same is true of a shipping service. When transport improvements generate tourism flows, they also generate foreign exchange flows (and, probably, a net surplus). (They can also generate flows out of the country.)

Again, caution must be exercised if this externality is being used to justify something. Estimating the net foreign exchange effects of a project is difficult, and results need not be obvious. For example, a national airline can give rise to a net drain of foreign exchange (if, for example, as is often the case in the South Pacific, it is unable to utilize its aircraft fully). In principle the shadow foreign exchange rate is something that can be determined empirically. There is little evidence that, for the South Pacific nations, it differs markedly from market rates.

Environmental externalities. A third type of externality which should be mentioned is the traditional type which can arise from any productive activity such as transport. It can be positive or negative. Transport activities can give rise to noise and pollution which ought to be counted as costs. They may also create external benefits. These externalities should be recognized as possible, and they are best treated by incorporating them in the analysis of specific projects; one cannot be general about them.

Economies of route density. A final type of externality arises from the nature of transport services. This can be regarded as a scale economy. As the density of traffic increases, either the costs fall because larger vehicles can be used, or frequency increases. This externality is not captured by the supplier of the transport service - only to a limited extent is it possible to 'sell' frequency. It is an economy which is internal to the industry but external to the firm.[3] In competition, price is set equal to average cost, which exceeds marginal cost. In most transport systems, this effect is relatively unimportant, and average and marginal costs can be regarded as approximately equal. In the South Pacific, with its routes, infrequent service and small vehicles, it can be important. It provides a justification for some subsidy to transport services on grounds of economic efficiency, though empirical work suggests that this subsidy would be very small, and probably not worth bothering about.

3 The effects of subsidies and aid in international transport

A subsidy arises when a government gives a grant (or, perhaps, tax concession) to an industry to encourage it to produce more of an output, so as to make that output cheaper. It can be

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[3] For this aspect of scale economies see Mohring (1976).

received from a home or overseas government. Aid arises when an overseas government gives a grant (or some form of concession) to the home government. It may be given unconditionally, in the form of cash, or it may be directed to a specific project, or industry. In such a case, it becomes a subsidy. Much, though not all, of aid takes the form of a subsidy to some project or industry.

The subsidy issue is a fundamental one for South Pacific transport. Sometimes, poor transport as such is seen as a suitable reason for subsidy. Conversely, tight budgets mean that governments are willing to rely on restricting markets and taxing the profits. Thus, Tonga subsidizes air transport, whereas Vanuatu taxes it (see Vanuatu 1981:262). Can both nations be pursuing policies which work in their own interest? The South Pacific island nations receive considerable amounts in the form of aid. Some of this is specifically directed towards projects - i.e. it constitutes a subsidy to certain transport services. Subsidies can take several forms, including permitting enterprises to operate for several years at a loss (as with the Pacific Forum line and Air Pacific).

The key questions surrounding aid and subsidies are, first, their effect on efficiency and second, who gains the benefits from them (or who pays the taxes). Of these, the former is less important in the present circumstances. Sometimes, subsidies may enable inefficient operation to continue, and the costs of this can be high. With international transport taking place between generally poor countries (the South Pacific island nations) and rich countries, the incidence of subsidies and taxes is critical. Is aid to these countries effectively enjoyed by them, or passed through the transport system, back to the donors? Are subsidies which governments offer enjoyed by nationals, or a reverse form of aid?

Market structure and the incidence of subsidies. For purposes of analysis, three groups can be identified. These are the consumer of the product shipped, or the transport service; the producer of the product shipped; and the producer of the transport service. Some assumptions need to be made about how the prices of transport services and goods shipped are set.

Consider goods being shipped to markets in the Pacific from countries from the island economies, or goods being shipped to the island economies. For most goods (excluding perhaps copra) the island economies are price takers (Falvey, Chapter 4 in this volume). If subsidies are given to transport, and are entirely passed on by the transport operator, the island nations enjoy the full amount of the subsidy. Domestic prices for exports rise, and prices of goods imported fall by the amount of the transport cost reductions. If transport is not in perfectly elastic supply, some of the subsidy will be enjoyed by transport operators, who may include nationals of both groups of countries. To the extent that

the island nations supported part of the losses of the Pacific Forum line, and that it was operated efficiently, the subsidies would have gone, in the main, to their own nationals. The same would be true of intra-regional and inter-island shipping.

In contrast, consider the effect of subsidies to air transport, and suppose that airlines are sufficiently competitive or contestable (see section 5) for the subsidy to be passed on to users. To the extent that nationals of the countries use airlines, the country reaps the benefit of the subsidy. However, especially with international air transport, many of the users are nationals of the rich Pacific rim countries. These people will be the main beneficiaries of the subsidy. However, the matter is not so simple, since the supply of tourism services needs to be considered as well. Suppose that more tourists can be catered for, but at somewhat higher cost. Lower air fares induce an increase in tourism, and land content prices rise (by something less than the reduction in air fares). The local tourism industry gains some of the transport subsidy. For example, transport costs may fall $10 per person. With more tourism, land content prices may rise $5. The tourists gain a net $5, as does the local tourist industry.[4] This industry may be partly overseas owned, and thus some of its additional profits will be payable overseas. As discussed in Section 2 above, there may be externalities associated with tourism. New jobs may be created, and thus there are additional benefits which can be evaluated at the difference between market and shadow wage rates. The country as a whole could gain more than the subsidy, even though some of the benefits were reaped by overseas visitors. The island nations subsidize air transport often through infrastructure, and the question arises of whether the effects discussed above are sufficient to ensure that the benefits from the subsidy policy more than outweigh the cost of the subsidy to the island economy. Aid which is directed to air transport may not be very valuable to the initial recipient of the aid: the donor may gain more.

Because of the nature of things, subsidies must usually be directed to the transport operator in the first instance. Thus a subsidy may be given for port developments, or for a specific air service, or generally to an airline. The transport operator may be owned by the island nations individually or as a group, or owned elsewhere. There arises the question of how much of the subsidy is appropriated by the operator.

When the transport service is competitive, all of the subsidy will be passed on to users. However, in this area, virtually none of the transport services (except perhaps inter-island shipping)

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[4] Empirical work has suggested that the local tourist industry does gain some of the advantage from lower air fares. See World Bank (1980a:44-5).

can be considered perfectly competitive. Some markets are such that there may be few operators, but others can easily enter and supplant them. If so, the results will be similar to those of competition. With others, there may be a degree of monopoly - this is especially true of ports and airports, which are locational monopolies. There must be some question as to whether they always pass on subsidies to users.

The direction and incidence of subsidies. The effects of the subsidy can be partly determined by the way in which it is granted. An airline may be given a monopoly over a route. If a subsidy is given, it will invariably keep some of the subsidy. Even if airlines are not granted monopolies, subsidies can be specific to particular airlines or available to any. If a subsidy is available to any airline which operates a route, it will be passed on to travellers, as airlines can compete to offer the service and obtain the subsidy. Often, as with Air Pacific, the subsidy has been given to a specific airline (e.g. a chosen airline is permitted to operate at a loss). The danger is that if there are no clear incentives for productive efficiency, and if the operator has market power, the subsidies will simply finance inefficiency.

A subsidy can be directed towards the terminal or line haul aspect of the service. Port improvements can lessen cargo turnaround times, and produce cost savings unrelated to distance. Airport extensions enable a broader mix of aircraft to operate, and, probably, some of these will have lower costs for particular services. The cost savings may or may not be related to distance.

Depending on the objective of the subsidy, it can be directed towards line haul or infrastructure components. It is possible that aid given for terminal investments may be more easily appropriated by the recipient country. The line haul operator may or may not be nationally owned, and may gain a share of the subsidy. The infrastructure is more likely to be locally owned, and there is more flexibility in pricing of it. Airport extensions can generate cash flow if the new users are charged more to use it. Alternatively, a country can allow low airport charges in order to lower the cost of air travel. There is thus some flexibility in the way in which the benefits of the subsidy are enjoyed.[5]

The problem of competition in subsidies. One of the more serious problems which can arise as a result of subsidies to infrastructure and services is that the countries may compete against each other and eliminate the benefits. Two countries may

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[5]As against this, it should be noted that mistakes in equipment purchase can be more easily rectified than mistakes in infrastructure. On this, see World Bank (1980a:41).

invest in infrastructure which is worthwhile if one or the other invests, but not if both invest. When both countries subsidize a service it becomes more difficult for them to appropriate the benefits from the subsidy. They may make it cheaper for the users, but do not increase the use of the facility by much in either country.

The desirability of investments and of subsidies in general to transport services depends on whether the services provided are substitutes or complements. In some cases, services are clear substitutes. New cargo handling facilities in one port may be justified if cargo is concentrated through that port. If another port is improved the sum total of cargo will remain more or less unchanged. The two ports will be substitutes for one another, and both may be poor investments if the other port is improved.

The case of air transport improvements is not so straightforward. Improvements in air travel to one country may increase tourism demand to another. Tourists may wish to visit two or three countries, and not travel if it is feasible to visit only one. To this extent, transport services may be complementary. If so, the problem of competitive investment or subsidies being dissipated is much reduced.

When services are substitutes, it is adequate for each country to appraise potential projects separately, while making explicit recognition of the probabilities of other countries supporting substitute projects. No duplication need occur if assessors are sufficiently realistic about other countries' projects. When projects are related, and externalities are thought to exist, individual assessment of projects is still possible. However, there is a chance that both nations will reject projects which together would be worthwhile. In such cases, it is sensible for the countries to determine what policies would maximize net benefits to them taken as a whole, and also decide how the benefits are to be allocated.

The rationale for aid and subsidies. While there are many examples of aid given for transport projects and subsidies extended, on an explicit or ad hoc basis to transport operators, the rationale of such subsidies is very often lacking. They serve to improve transport services, but is such improvement worthwhile as compared to other uses of the funds? Sometimes they may be justified with reference to externalities, such as foreign exchange from tourism, though these externalities are more often claimed than proved. Granted that some of these externalities are genuine, are transport subsidies the best way to internalize them?

The question of who gains from the aid or subsidy is often not posed, and even less often answered. Often, especially with international transport, benefits are passed on to consumers, who may not be nationals of the countries concerned. Another question

concerns the structuring of subsidies, in such a way that benefits are maximized. It is difficult to be general here, and the question must be answered in the context of a specific problem. Two general propositions however are: (i) that the less tied or specific a subsidy is, the more efficient the outcome will be, unless the subsidy is directed to overcome a distinct externality, and (ii) in a world of uncertainty, flexibility is desirable, and there are dangers in committing too much in fixed investment, such as ports or airports, rather than in forms which can be stopped if they are unsuccessful. A third general question concerns the relationship of transport operators in different states. If they are substitutes or complements, this must be taken account of in evaluation.

Overall, what justification might be used for subsidies to transport? It may be that there are specific externalities associated with it; such externalities are best corrected by direct subsidies to transport operations as terminals. As noted in section 2, the 'economy of scale through density' argument was a valid one for general subsidy to transport. It is difficult to measure how empirically significant it might be. In most countries it is of little significance, though in the South Pacific it could be moderately important. Other externalities frequently quoted are foreign exchange and tourism. These may be valid, but if they are, the best way to correct them is directly. Thus, hotels, not airports, should be subsidized, or tourists, not air travellers in general, should be subsidized. Overall, even though transport services may be poor by comparison with those in, say, the United States, this is no reason for subsidies to the sector. If sectors are to be subsidized to capture externalities, the transport sector is often the wrong sector to subsidize.

4 Regulation and the structure of services

One of the major problems of air transport in the region is the restrictive trading in traffic rights. As is common in the rest of the world, air traffic rights are exchanged on a bilateral basis (Kissling and Taylor 1984). Two nations agree that air services can be operated between them subject to certain restrictions. Very often, most of the traffic between the nations is reserved for those nations' airlines. The problem is that this restriction of rights leads to inefficient patterns of services.

This type of problem does not often arise with shipping between the island nations.[6] Typically, the regulatory framework

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[6]There are some cases of restrictions on traffic rights. For example, Kiribati has restricted Fiji-Tarawa cargo carrying to the Pacific Forum line: Islands Business, September 1983, p.13.

under which shipping operates is much more flexible, and it is possible for an operator to plan and operate that route which makes most economic sense. Nor does it exist in deregulated domestic air transport markets, such as the United States. Even within a tightly regulated domestic market, such as that of Australia, it is normally possible for those airlines which are permitted to operate, to choose route structures as they wish.

The problems of air transport in the South Pacific have been well documented.[7] Route structures are inconvenient and costly, and frequencies are low. Airlines cannot fly many routes which would make economic sense.[8] The utilization of their fleet and crews suffers accordingly. These problems reflect the restrictions on operating rights which exist.

The South Pacific island nations are not unique in controlling air transport through a restrictive set of bilaterally negotiated rights. Most countries do the same. However, it can be argued that while such restrictions are on balance harmful to most countries, they are particularly so for the South Pacific nations, which can ill afford higher cost transportation.

Countries impose restrictive bilateral regulations for a number of reasons. Very often, they wish to protect their own airlines. However, if airlines need protection, that is evidence that they are operating at higher cost than others; thus protection has its cost. Countries often speak of 'their' traffic and getting a 'fair share' of the traffic. Countries sometimes believe that by restricting rights of other countries' airlines they can gain a greater share of the benefits from air transport. This is rarely the case. First, most other countries are doing the same thing. Second, the costs they impose through restrictions are primarily on their own nationals.

A recent example of shortsighted policy was where Vanuatu restricted the rights of Air Pacific to fly from Vanuatu to Australia.[9] Air Pacific and its passengers all lose by this. However, Vanuatu itself also loses. It conceivably faces a reduction in frequency of services to Australia. To the extent that Air Vanuatu is given increased market power, the Vanuatu Government may gain additional revenues. These are at the expense of higher fares to and from Vanuatu. Residents of Vanuatu will

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[7] On these issues, see Kissling (1980).

[8] An example of this inefficiency is where Air Nauru flies between Western Samoa and American Samoa, yet cannot pick up traffic between them, even when normal means of transport are unavailable: Islands Business, March 1985, p.53.

[9] In addition, Vanuatu and the Solomons have denied Air Pacific passenger rights between Honiara and Port Vila: Islands Business, July 1983, p.56.

lose, as will tourists to the country. Perhaps Vanuatu considers that the best policy is to restrict tourism and tax it. If so, a more efficient way would be to do so directly, and allow the air transport system to be free of restrictions which promote inefficiency. As it stands, Vanuatu is imposing a cost on itself to increase the profits of an overseas-owned company.

Liberalization of trade in airline services. Taking the present set of bilaterally agreed rights as a starting point, it would be possible for the South Pacific nations to liberalize conditions for aviation in a variety of ways. Various distinct choices need to be made. These include:

(i) If changes are to be made, are they to apply to aviation between the nations themselves (regional liberalization), and are they to be applied to aviation to and from the region?

(ii) If conditions are to be liberalized, is this to be the case only for airlines from the region, or for any airline? Could a New Zealand airline, for example, participate on intra-regional routes or equal terms with a Fijian airline?

(iii) Are countries going to make decisions to liberalize on a unilateral, bilateral or multilateral basis? A country could decide to allow a liberal operating environment to and from itself, subject to other countries' regulations. Alternatively, it can conclude bilateral agreements with other countries which are willing to liberalize, or, finally, it could wait until all other countries in the region were willing to liberalize jointly before it did anything.

(iv) Countries can decide to allow competition or restrict it.

In the international environment, it is important to distinguish between liberalizing traffic rights and deregulation. Deregulation, such as happened in the United States' domestic airline industry, allows much more competition. It is possible to liberalize traffic rights and yet preserve regulation of the industry. For this reason, questions of industry and firm structure are discussed later, in section 5. It would be possible to allow airlines of Western Samoa or New Zealand to fly between Tonga and Fiji (a liberal arrangement of traffic rights), but Tonga and Fiji might choose to regulate, for example by setting fares.

The argument for trade in airline or shipping services is much the same as for trade in anything else. Some countries, because of their experience, lower input prices, or because

specific routes fit neatly into their network, may be able to supply airline or shipping services on a route more cheaply than others, even though that route is between two other countries. It is in the interest of all that this country's airline or shipping fleet serve the route. The two countries being served gain through facing lower transport costs. This can involve a country's airline or ship losing market share - but is no problem if low transport cost, not market shares, are the objective. What is good for Air Pacific is not necessarily good for Fiji. Countries which insist on their airlines or shipping fleets obtaining a specified 'fair' share of the traffic are simply forcing up their own transport costs.

If the objective is an efficient structure of transport, a precondition is that operators be able to select the best routes within the area, and to and from the area. Within the group, this would require that any airline could operate any sector, and pick up or set down passengers anywhere it wished. The result would be similar to the domestic market of other countries. Some countries' airlines might not survive, but this would only happen if fares offered by other airlines fell. If lower transport costs and convenient schedules are the objective, this would be desirable.

General agreement on free exchange of air rights might not be forthcoming. If so, countries must decide on whether to allow free trade in airline services unilaterally. As with trade questions generally, it is usually in the interest of a country to move to free trade even if it cannot persuade its partners to do so. The main argument for not moving to free trade is that trade restrictions can sometimes be used as a bargaining weapon to induce other countries to reduce restrictions. It is in Vanuatu's interest to allow Air Pacific to pick up or set down passengers freely in Vanuatu even though Fiji may be denying Air Vanuatu rights which it desires in Fiji. Indeed it may be possible for a couple of the more central nations to gain considerably by unilateral liberalization as they may become the hub for the region.

An important issue which follows is that of exchange of rights with countries outside the region. It is in the interests of the South Pacific nations to have low transport costs between themselves and other countries. This can be achieved if operators flying to the countries have flexible traffic rights. These would include rights to fly passengers between countries in the region, and possibly to fly passengers within the countries. There may be worries about the greater size and economic strength of overseas airlines being used to force local airlines out of business. If they do operate at lower cost, it is desirable that they, not the local airlines, provide the service. The South Pacific countries have a strong weapon against predatory pricing (which involves

setting fares below cost to drive competitors out of business and their rising fees): they can withdraw their rights to fly.

The question of unilateral liberalization is likely to arise here also. What happens if Air New Zealand wishes to fly, say, from Christchurch to Fiji, but New Zealand is unwilling to grant Air Pacific rights into Christchurch? If Fiji is interested in improved transport links with New Zealand, it would agree to this, even though Air Pacific's share of the total business would most likely fall. The cost of restrictions is usually borne in part by the country imposing them.

The issue of policy by the developed countries towards the South Pacific states is likewise important. The developed countries impose restrictions on others' carriers to protect their own carriers - but this places a cost on both groups of countries. It is curious for Australia and New Zealand to be granting aid to lower transport costs by extending airports, yet, at the same time, to be raising those costs by restricting operations of South Pacific carriers or other countries' airlines flying between the South Pacific nations and Australia or New Zealand. Of course reasons for doing this exist, but it is costly to Australia and New Zealand, as well as to the South Pacific nations. It is unlikely that the Australian and New Zealand carriers need such protection. Both groups of countries can gain in a freer environment and in one in which transport is not subsidized.

Liberal trading environments for airline services do not necessarily result in improved efficiency. They are a necessary precondition, however. It is possible that, even if airlines are able to carry passengers on any sector they choose, the existing pattern of services would not change. This is unlikely, but if it was the case, it would be evidence that the problems in route structures and frequencies are improved by geographical constraints (which cannot be removed) or by poor scheduling and operation of airlines (which can be improved). Richer countries may be able to afford the luxury of protecting their own high-cost airlines; the South Pacific nations cannot. They have a strong interest in minimizing transport costs, because of the spending of their own nationals, and because of their effect on tourism, which they are keen to promote.[10] Thus it is desirable that any artificial restraints be removed.

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[10] On this issue, see the discussion in World Bank (1980a:44-5).

Regional liberalization is probably the first step, and liberalization with other countries, a more complex issue, can follow. It is not necessary that all countries in the region agree to liberalize: if some countries wish to isolate themselves by having higher transport costs between themselves and others this need not prevent the others from making agreements amongst themselves. The result would be to make the regional market similar to domestic markets elsewhere. It should be noted that either de jure or de facto regional liberalization is a precondition for the Pacific Air Leasing Regional Civil Aviation Study plan to work, as is recognized in the Report (UNDP 1985). For those countries which wish to encourage tourism, the question of liberalization with countries outside the region is of even greater importance, since they lose heavily if transport costs to them are higher than they need be.

Direct and indirect services. If airlines can choose the routes they wish to fly, route structures may change. If routes are constrained, and especially if rights are traded on a bilateral basis, there is an incentive given to direct services since traffic rights often cannot be secured for particular sectors. When these restrictions are removed, airlines may choose to operate indirect services. Ship operators have the same problem. When operating between countries A, B and C they must determine whether to operate direct services, or serve A to C via B.

There is a straightforward problem of economic calculation. The distance travelled and time taken with direct services is less. With indirect services, the traffic flows are more dense. Thus larger vehicles, with lower costs and greater frequencies, are possible. When allowance is made for the cost of time and inconvenience, it is possible for either direct or indirect services to be cheaper. There will also be costs at terminals. For passenger operations these need not be high, but the costs of trans-shipping cargoes are normally high in relation to the line haul cost.

A country as a whole will not normally lose if indirect services replace direct services. It is always possible to continue with direct services - they will be replaced only if the cost and frequency advantages of the indirect outweight those of the direct service. To keep the traffic, they will have to offer a more attractive package. There will, however, always be some people who lose from indirect services - for example those who put a high cost on in-vehicle time or shippers of perishable goods - but the gainers will outweigh the losers.

An issue which is related to this is that of hubbing, which can happen in shipping and airline services. It has been given a good deal of attention in the United States since airlines were deregulated.[11] Since then, airlines have chosen to operate hub-and-spoke operations, choosing some major cities as hubs. The number of direct services between medium and smaller cities has fallen. In shipping, there has not been very much development of hub-and-spoke operations, partly because the costs of transport are high relative to aggregation economies. The scope in the South Pacific appears to be low (Touche Ross and Co. 1984a:19).

The likelihood of hubbing depends on the relative sizes of centres and their separation, and distance from other major markets. Some hubbing may emerge in the South Pacific, and Fiji would be the probable hub. Travellers from Western Samoa to Vanuatu might hub through Fiji, though it would be unlikely that travellers to Tonga or New Zealand would. Likewise, it is likely that more traffic from distant large countries, such as Australia, Japan or the United States, would travel via Fiji on their way to some of the smaller island states. Such hubbing enables at least one state to have frequent and low-cost connections to the rest of the world. In terms of transport costs, the nations which are not hubs themselves will not lose.

The qualification which must be noted is that low transport costs may not be the only objective of these countries so far as the performance of the transport industry is concerned. Suppose each country enjoys externalities from tourism. If routes are rearranged so that transport costs fall, it is probable that some will fall more than others. The relative attractiveness of some destinations will change. This will be especially true if hubbing develops; the local hub will attract a disproportionate share of tourists. While the absolute attractiveness of all destinations for tourists will have increased, some may find that they attract fewer tourists because their relative attractiveness has fallen.

The same problem can emerge with employment. A change in route structure can result in employment in transport and related activities (e.g. ship repair) rising in some countries and falling in others. If market wages equal shadow wages, this should be of no concern, since former employees of the transport sector can obtain employment elsewhere. If market wages exceed shadow wages, the countries which lose employment can lose absolutely. There are advantages to becoming the hub.

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[11] On the development of hubs in the US, see Bailey, Graham and Kaplan (1983).

If countries believe that such externalities exist, and are important, then the lack of cooperation in transport issues, and especially air transport, has a rationale. When traffic shifts off one operator on to another, or tourists move from one country to another, one country gains and another loses. Countries are to a degree competing for a share in the welfare gains enabled by greater externalities (and perhaps profits from using market power). As recognized before, the countries are partly complements for each other in attracting tourists. However, it is still possible for some states, perhaps those on the periphery, to lose out to others if transport costs fall. The transport policy which maximizes gains for all need not be the same as that which maximizes benefits for a specific country. An efficient transport policy will maximize benefits overall, but some states prevent it from coming into being. It is in the interest of other states to devise some means of offsetting such states' losses, since they will be able to reap greater benefits.

It is worth noting here that conflicts of interest can also emerge when countries offer subsidies for particular operations. These, for example, can have the effect of inducing operators not to call at another country, and to offer only a direct service to the destination. The other country suffers a loss of frequency. In this case, there is both a reduction in overall efficiency, and a redistribution of the benefits from the transport system. Given the interdependent nature of transport systems, a subsidy given (or tax imposed) by one country can have adverse consequences for others.

5 Industry structure and efficiency

Transport operations often require a good deal of coordination. This is true for shipping services, where goods may be stored, though at a cost, but it is especially true of airline services. If, for example, an airport is being used as a hub, it is obviously important that passengers and freight be able to make connections. Operators like to develop networks which make sense given the nature of their business. Granted this, however, the range of efficient networks is large. Some operators have a wide network, while others prefer simple networks - perhaps only a shuttle service along a single sector. Passengers and shippers have a preference for operators with wide networks, but such networks involve coordination costs. Hence operators with simple and complex networks can survive, side by side.

Scale economies in transport usually only exist to any significant degree at the level of individual routes.[12] As discussed above, because of economies in vehicle size, costs fall as market density rises. The absolute size of the operator does not significantly affect costs. Small operators can survive in the same market as large operators. There are some provisos, however. The small operator will usually have fewer tasks, such as maintenance, performed in-house. If there are other firms willing to perform these tasks, there is no problem. Second, there may be problems if the number of vehicles operated is very small, say fewer than three or four. If, for example, one vehicle is out of service, it may be impossible to provide a service, and reliability falls.

In the South Pacific, there is scope for several airlines, but not a large number. There is no case, on size of market considerations, for a statutory monopoly. There are, however, problems of coordination, though these can be solved. It is in the interest of profit seeking firms to make sure that their services connect with other services in the region. There are legitimate doubts surrounding those airlines which are not expected to earn a profit, and which are expected to perform specific tasks at short notice for the government. Airlines around the world coordinate schedules and make arrangements for joint ticketing and carriage of baggage.

The coordination problem in shipping is present, though it is less critical. Small shipping fleets, with as few as one vessel, can operate effectively, though sometimes it is convenient to operate them within a fleet - such as the Forum line or a shipping conference. Such coordination limits the competition, however.

A situation of perfect competition is not likely to emerge in the transport industries of the South Pacific. It has not emerged in the densest of markets, the United States domestic market. The total number of operators in any one market - that is a specific route or group of routes - is not likely to be large. For air services, there may be at most three or four operators on a busy route, and perhaps a dozen operating in a region. There may be more independent operators on a shipping route, but these may be linked through some coordination agreement.

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[12] For a review of scale economies in airlines, see White (1979).

The key question is whether a market is 'contestable'.[13] This requires that there are no barriers of entry or exit into an industry. Existing firms (which could possess a monopoly) are unable to indulge in monopolistic practices, such as overpricing, because they would lose their market to new entrants. Thus, so far as market behaviour is concerned, the number of operators may not be very important. At the extreme, a perfectly contestable market will yield as efficient results as is possible, given that firms must cover costs. It will yield prices which are exactly equal to average costs.

It is generally thought that airlines and shipping are examples of markets that can be approximately contestable (Bailey and Panzar 1981). Entry is often restricted by regulation, but when it is not, it is relatively easy for new suppliers to enter and exit without substantial loss if they are unsuccessful. It is likely that the transport industries in the South Pacific can also be fairly contestable.[14] When there are only a few operators in markets, they will moderate their pricing behaviour in case new entrants take their markets away. With some small markets, one operator may possess, and use, its monopoly power, at least for a time. The costs of this will be small in relation to the costs of regulating the whole system.

For routes in the South Pacific, as elsewhere, governments must choose whether to permit and promote competition, or create monopoly power, by allowing only one or two operators on to a route. In shipping, it has been conventional to allow competition, whereas for air, there has been a preference for bilateral or unilateral monopoly. The problems with monopoly are the same in the South Pacific as everywhere else. A monopoly has an incentive to keep prices high. Perhaps more serious is the chance that if the owners of the monopoly have no clear incentives or necessity to earn maximum profits, they will allow production inefficiency to develop.

A case for monopoly, or restrictions on competition, which is sometimes advanced relies on cross-subsidization. If it is desired to subsidize a particular route, this can be achieved by restricting competition for an operator, and allowing profits to be earned on some routes which can be used to finance losses

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[13] For an introduction to the notion of contestability, see Baumol (1982).

[14] For an analysis of contestability in low-density markets, see Starkie and Starrs (1984).

elsewhere. Cross-subsidization may seem a practical, and not especially inefficient means of achieving the objective. If competition is allowed on the profit-making routes, cross-subsidization will break down, since the profits required for the subsidy are competed away. However, the restriction of competition does more than just allow cross-subsidization to take place - it removes the main pressure for efficiency, as well as the main test of how well a carrier is performing. Rather than risk the inefficiency which develops with monopoly, a preferable policy is to subsidize directly, out of government funds, those specific services which are regarded as being inadequately served under competition. The real cost of cross-subsidization lies in the inefficiency which restrictions on competition allow to develop.

The regional civil aviation study. The suggestions regarding competition on individual routes made by the Regional Civil Aviation Survey of the South Pacific (UNDP 1985:36) are such as to enable and encourage inefficiency. It suggests restrictions on services which compete with airlines participation in the 'Pacific Air Leasing' (PAL) scheme. The market served can only gain if competition is effective (though the initial airline may prefer to keep the market to itself). Transport is too important for the South Pacific nations for chosen airlines to be protected and given monopoly power, and for transport costs not to be subjected to the maximum possible downward pressure.

Apart from this aspect, the PAL concept has some attractive features.[15] Some airlines in the South Pacific are very small, and have difficulty in achieving even the minimum efficient scale of three or four aircraft. In addition, they often have poor current utilization of aircraft because of their route structure. If air rights are more freely exchanged amongst the nations, these problems may be sorted out, but, if they are not, problems will remain. This remains true under the PAL proposal. If utilization is to be reinforced, and effective route structures to be developed, either de facto or de jure liberalization of traffic rights will be required. If it does not eventuate, the PAL proposal may have some small financial advantages, but its operational impact will be minimal.

For the proposal to work effectively, lease contracts will need to be very detailed. It envisages more than a system whereby individual airlines lease aircraft for an extended period. Aircraft will be scheduled on a network, and they will be leased

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[15] Issues of cooperation and leasing companies are discussed briefly in the LDC framework in World Bank (1980a:47-9).

on specific routes at specific times of day. The value of the aircraft will vary according to time and place; and if an efficient schedule is to result, lease payments will have to reflect this. Such a lease structure will be complex to devise, and possibly difficult to operate. The problem is that the arrangement may result in efficient schedules, but the conflicts of interest between nations will still remain. For example, several nations will wish to lease an aircraft at the same time. To ensure efficient utilization, it will be necessary for some airlines to be paying much more per hour for the same aircraft than others (which wish to use it in the off-peak).

As it stands, the PAL proposal involves two stages: (i) free exchange of traffic rights and (ii) a company that provides aircraft and leases them out to individual airlines. Both require resolution of possible conflicts of interest. Completion of the first stage is necessary to enable efficient route structures to be developed. Once rights are exchanged, efficient structures can come about:

(a) with several individual airlines freely flying on any route, but possibly leasing to one another at particular times;

(b) a single dominant airline, which solves internal coordination problems (such an airline can be exposed to potential competition or given a monopoly); or

(c) a system such as the PAL (which also may or may not be exposed to competition).

The advantage of (b) is that internal coordination is simple and cheaper. A typical airline, in its scheduling program, solves a host of these allocation/coordination problems. Sometimes services are coordinated with those of other airlines, and financial transfers are made. Coordinating services and aircraft amongst five or so different airlines, in a way consistent with their separate objectives as well as with efficiency, would be a very complex task, yet to be achieved elsewhere in the world.

It remains to be seen which of these approaches is best for resolving the coordination problems and the conflicts of interests between states. While the establishment of the PAL is predicated on free exchange of rights, one of its advantages may be that this is not essential. Because it will be possible for flights and aircraft to be re-designated to change their 'nationality', it may be possible to achieve an efficient schedule without full exchange of traffic rights.

The role of overseas airlines. One of the clearest recent trends in industry structure in airlines has been the growing presence of airlines of the larger Pacific rim countries. This is

evident in Air Vanuatu, which is effectively an Ansett subsidiary, Polynesian Airlines, which is partly owned and operated by Ansett, and in the recent management contract between Qantas and Air Pacific. There are some obvious benefits from such arrangements - in particular, access is gained to management expertise, and better use can be made of aircraft. The countries have less control over the airlines' operations, but if the objective is to achieve efficient services, this is not important. In addition, there is scope for economies in marketing through the larger airlines' channels.

Overseas airlines will manage local airlines to serve the region well if induced to do so. They may not if the pressure of competition is lacking. If a country grants a monopoly to an airline it owns, at least it enjoys the monopoly profit itself. If it grants a monopoly to a foreign-owned airline, or to a local airline which is managed by a foreign one, it cannot be certain where the profits will end up. If a foreign airline can supply a management team which results in efficient operation, it should not need any protection (unless a government provides subsidies to a competitor to make losses). Thus, a contract which specifies that competitors should be restricted is a dubious one.

It should be noted that the objectives of the managing airlines and the nations are different. Conflicts of interest are inevitable. For example, the managing airline may also wish to develop a route which is competitive with the route to the Pacific nation. This does not necessarily eliminate the benefits from a management contract. After all, these conflicts always exist in a principal/agent situation. However, the conflicts of interest should be recognized when such contracts are drawn up; it should still be possible for both groups to gain, though this is not an inevitable consequence of the contract.

Comparative advantage in services. If goods or services are to be provided efficiently, countries which have a comparative advantage in producing them should be relied upon. Airline and shipping services, and many of the imports that are used to produce them, are tradeable. The nations could rely on overseas carriers for all of their services. The present arrangements are preferable, since they can provide some inputs, such as crews, more cheaply than the overseas countries. It makes sense to import those inputs which they cannot provide efficiently themselves, such as fuel, aircraft, ships and management expertise. This last import is provided efficiently when the country has a degree of experience in operations of the particular service, and a moderate general level of education and skills in the economy.

In the longer term, the Pacific nations may be in a position to become net exporters of transport services, like New Zealand and Singapore now. Since they have access to much cheaper labour

than most of the Pacific rim countries, if they can match other countries' efficiency (and good management is a precondition for this), they can achieve lower overall costs. Their central location will enable them to gain a share of internal Pacific and trans-Pacific traffic. This is likely to happen sooner for shipping than for aviation.[16]

In a number of industries, efficiency can be achieved only as a result of 'learning by doing'. This means that a period of inefficient operation must precede the achievement of efficient operation. For a while, subsidy to a shipping line or airline may be warranted, as skills are developed. Capital markets may be imperfect, and if this subsidy is not available, the skills may never develop. It should be recognized that this is a highly conditional argument for subsidy. The subsidy should be short term, and always understood to be so. It should be granted only to such operations as are likely to become efficient and be able to compete. After a period of functioning unprofitably, it may be apparent that the operation can never compete, in which case the subsidy should be withdrawn (something which is always difficult to do). Finally, the markets must be there. The Pacific nations may be able to develop an efficient shipping fleet, but if other countries around the Pacific rim reserve cargoes for their own fleets, there is no point in investing in, and developing it.

With airlines, the choice of the mix of overseas and local ownership and operation is a current problem. With shipping, the situation is one which has evolved over time. In the past, services were provided by fleets owned overseas, such as the Burns Philp fleet. Recently, the degree of local ownership and operation has been growing. This has culminated in the formation of the Pacific Forum line which appears to be gradually improving its performance (Touche Ross and Co. 1984b:30-1). There has been a gradual accretion of skills, accompanied by a lessening reliance on services provided by overseas countries.

6 The equipment problem

One important aspect of efficiency is that transport firms operate appropriate vehicles for the region. Questions arise such as whether specially designed or standard vehicles should be used and whether new or old vehicles are appropriate. There is also the question of financing. As with other issues, these questions are more difficult in the air than in the sea context.

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[16] The issue of trade is discussed in Findlay and Forsyth (1985).

There has been some discussion of whether specifically designed vessels should be used for South Pacific trade (Brookfield 1980). Standard vessels may do a job less effectively, and make more demands on facilities, but they are cheaper to buy or lease. It is thus a matter of simple cost benefit calculation to determine which is more efficient. Recently, the problem has been solved by the ready availability of standard vessels; thus has been the result of a worldwide glut in shipping tonnage. While this continues, it is unlikely that many specially designed vessels will be required. The shipping firms can make their own decisions on appropriate vessels.

With aircraft, the problem is slightly different. The choice is between standard and special performance aircraft, the latter being more costly to own and operate. The latter will be required, however, if airports cannot handle the former. The problem then is one of whether it is worth investing in airports in order to achieve reductions in airline operating costs. This too is an issue for cost-benefit analysis.

A danger emerges when different firms or authorities operate vehicles and terminals. It may be possible for the vehicle owners to force the hand of the terminal operators to upgrade their facilities. A firm may invest in a new ship or aircraft and threaten to bypass a port or airport while facilities there are inadequate. To avoid losing the service, the authority upgrades the terminal, even though a cost-benefit analysis indicates that the purchase of the new vehicle and terminal upgrading would not be worthwhile. The likelihood of this occurring is reduced, though not eliminated, if there is efficient pricing of the terminal.

The question of whether new or old equipment should be used is simple to answer. If it is possible to achieve high utilization, new equipment should be used; if it is not, old equipment should be. Vessels in the South Pacific trades are relatively new (Touche Ross and Co. 1984b:9), suggesting that owners have been able to operate them to achieve high utilization. Sea transport is not constrained by restrictive traffic rights, and high utilization is not possible.

The problem of poor aircraft utilization is frequently mentioned (Britton and Kissling 1984:81). It may come about because of the geography of the area, but the limited exchange of traffic rights certainly makes high utilization difficult to achieve. Poor scheduling may also be a contributing factor, though there are some aircraft on some routes which are able to achieve high utilization. In general, however, indications are that old aircraft would be most appropriate for the region, granted that adequate servicing can be achieved. They do have higher operating costs, but much lower capital costs. Unless the

capital costs can be spread over many hours' utilization, it is cheaper overall for the older aircraft to be used.

Thus, the recommendation of the Regional Civil Aviation Survey that new, latest technology aircraft should be obtained is an extraordinary one (UNDP 1985:47). The use of such aircraft can only be justified if much higher utilization than at present can be achieved. This could happen over time. If exchange of traffic rights were liberalized and airlines were able to develop efficient routes, or if this came about through flexible switching of aircraft from airline to airline, then utilization could improve. But these changes are by no means certain, and something like the present situation may be the case for some time to come. Airlines in the region would be paying for the most expensive aircraft of their size, and the interest and depreciation, or lease payment, burden would be severe.

Clearly the efficient policy is to operate older, cheaper aircraft for the time being.[17] It does not matter much if their utilization is poor. New aircraft should be used only where high utilization can be guaranteed. If the PAL scheme works, or liberal exchange of traffic rights enables efficient route structures, and utilization thus becomes high, it will be time to replace old with new aircraft. It would be foolhardy to obtain new aircraft on the presumption of a changed situation which may not come about.

Some comments about aircraft technology are appropriate here. During the 1970s, aircraft technology changes were such as to operate, at least in some important respects, against the interests of the South Pacific nations. Large, wide-bodied aircraft became relatively cheaper to operate, and this meant that costs on dense routes fell relative to those on thin routes. In addition, the range of such aircraft was extended, meaning that they had less need to make stops en route in places such as Fiji. Recent changes have been to the advantage of the South Pacific nations. Smaller aircraft have become relatively cheaper to operate (even though, in absolute terms, they are still more expensive for passengers than larger aircraft). The availability of long-range Boeing 767s means that thinner routes can be served more cheaply than before. In addition there have been several lower cost turboprop aircraft in the 30-50 passenger range coming on to the market.

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[17] The warnings of the World Bank on pressures to buy the latest equipment are worth heeding. See World Bank (1980a:42).

If these latter aircraft provide a substantial improvement in running costs to those of existing aircraft, the South Pacific nations will gain whether or not they purchase them. Airlines which operate the older types with high utilization will replace them, and their purchase price will fall. This is what happened to piston-engined aircraft prices when jets came in. The development of these new aircraft is good news for the South Pacific nations, even though they may not use them.

A final problem associated with equipment is the lease or buy decision. The attractiveness of these alternatives depends in part on what is available at particular time periods: it may not be possible to lease or buy the appropriate equipment in certain periods, since some of the equipment markets are thin. Two considerations would dominate. First, there may be differences in the aid available for each alternative. Thus, soft loans may be available for purchase, though not for lease. Second, leasing has the advantage of greater flexibility in a time of change. As indicated above, it may be appropriate to operate old aircraft for a period and update if utilization increases. If new aircraft are obtained under the assumption that high utilization is possible, it is desirable for disposal of them to be easy should the assumptions prove unfulfilled. Since operating conditions are difficult to forecast over the near future, the flexibility of leasing is a point in its favour.

7 Summary of key policy issues

In the South Pacific, transport costs are inherently high. Little is gained by making them artificially low, through subsidies. This will only encourage wrong industries to emerge and the development of traffic patterns which are expensive to cater for in the long run. The states have a strong interest in economic efficiency in transport, with transport costs being no higher than is necessary.

A precondition for efficient transport systems is that traffic rights to routes are freely available, if not to all countries, at least to all those in the region. This is approximately true for shipping. It is not so for aviation, and many of the observed inefficiencies and absurdities can be ascribed to restrictions on traffic rights. Most countries, even the United States, protect national carriers. This protection always has a cost, and, in the case of the South Pacific, it is a high cost.

Restrictions on transport operation invariably lead to less efficient operation. This is especially true when a degree of monopoly on individual routes is encouraged. Monopoly can protect national carriers, but it also usually leads to higher costs. Whatever the arrangements over exchange of traffic rights, states

can adopt various methods of regulation. It is argued here that the less artificial creation of monopoly and restriction on competition the better. In a free environment, shipping is likely to remain moderately competitive. In aviation, a dominant airline may develop, but it can be held in check by potential competition. The existence of a number of smaller airlines is a source of potential competition.

The Pacific Air leasing concept has merits. Even if traffic rights are not freely exchanged on a legal basis, it may enable some useful coordination of services. However, there is no case for restrictions on its competition, as suggested. If these are enforced, there is a likelihood of efficiency gains being dissipated. Given backhaul and positioning problems, there are likely to be considerable problems in designing lease contracts and creating schedules. The complexities of coordination between different airlines are likely to be very large.

An efficient transport system overall need not be in the interest of all states in the region. If externalities (e.g. through tourism) exist, benefits may depend on relative transport costs. Thus, tourists may go to the location which is cheapest or most convenient. Even though transport costs to a state fall, it may lose tourists, because transport costs to others have fallen by more. Some means of surmounting this (perceived or actual) conflict of interest may be a precondition of an efficient transport system.

Individual countries may choose to subsidize particular transport operations. By doing so they may raise transport costs for others. Such subsidies will only be worthwhile to the country providing them if externalities exist. If they do, this provides another example of conflict of interest between the states.

There is a role for imported managerial and technical expertise. This will diminish over time. It should be recognized that the interests of the overseas managements are not the same as those of the countries themselves. This is inevitable, and it calls for much care to be exercised in drawing up the management contract.

There are probably few important externalities in the operation of the transport system as such. This implies that it should cover cost if efficiency is the objective. Transport can be associated with indirect externalities, such as those which could come from tourism. If these externalities exist, they are best handled directly. Thus, if tourism creates externalities, it is better to subsidize tourism, not transport of tourists, if at all possible.

It is important for the states to determine the externalities that arise from tourism, and how tourism between different states

and transport are linked. The question of whether tourism should be taxed or subsidized, and how this affects transport, needs to be resolved. The current practice of both taxing and subsidizing transport is unlikely to prove effective.

In the longer term, the South Pacific nations may be able to develop an ability to export transport services, especially shipping, to the wide Pacific region. To this extent, there will be a case for allowing uneconomic operations for a few years, as the price of 'learning by doing'. This is however no argument for continued subsidization of inefficient services.

With regard to the equipment problem, there is a case for specially designed equipment in some situations. The more general problem concerns the age of equipment, especially with aircraft. At present, there should be a strong presumption in favour of older aircraft, which are more costly to operate, but which are cheaper to own or lease. Only when rearrangement of air services is successful in improving utilization of equipment should new equipment be purchased or leased.

Aid from developed countries which is directed to international transport, especially aviation, may prove ineffective in raising the welfare of the recipient countries. The main beneficiaries may be the donor countries. Other, non-transport projects are likely to prove more effective in generating benefits for the nationals of recipient countries. Aid to infrastructure or line haul aspects of transport, which has the effect of making transport artificially cheap, is of only limited value to the recipients.

If developed countries pursue a policy of granting aid to the South Pacific nations, yet simultaneously restrict operations of their transport carriers, they are being inconsistent and following a policy which is costly to themselves. Both groups of countries can gain if access to the developed countries' markets by South Pacific transport carriers is allowed. It is highly unlikely that developed countries' carriers are unable to withstand competition from the South Pacific carriers and that protection via traffic restrictions is needed or justified.

Appendix 6.1

Air freight

It is unlikely that developments in air freight will greatly expand the trading opportunities of the South Pacific nations. Air freight is either expensive and reliable, or relatively cheap and unreliable. There is little prospect of its becoming cheap and reliable relative to shipping rates, or air freight rates on dense major routes. This is true for virtually all countries, not only those in the South Pacific.

Air freight can be carried in designated freighter aircraft, or in the holds of passenger aircraft. Carrying goods in specialist freighter aircraft is inherently expensive. It is less so if large aircraft can be used, but this is only possible in dense markets, or in markets for which regularity is unimportant, and goods can be shipped on a space available basis. Most countries in the group do not have adequate facilities for large aircraft, but even so it is highly doubtful that they could use them effectively. If a regular freight service is required, it is probably necessary to have a small dedicated freighter, operating at high cost. Even a moderate sized freighter, for example of the Boeing 707 size, has a payload which is likely to be large relative to the markets being served.

The other option is to use holds of passenger aircraft. The demand for, and availability of, such space is variable, and hence it may be relatively cheap. However, availability and price are subject to variation for a number of reasons. Aircraft routings change, freight demand between other countries has an effect on space available to the South Pacific nations, and aircraft types alter. These problems face other countries, such as Australia, although, because of the low density of markets, the problems of the South Pacific are greater.[18]

Some industries, such as fresh fruit and flowers, could develop if regular, reliable and cheap air freight were available. This is unlikely to be true in the near future. On some routes, space may be available cheaply at the moment, but this cannot be guaranteed for long - however, the industry needs a considerable time horizon to develop. Only if the industry can pay the cost of designated freighters can it be sure of long-term stability of

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[18] For a discussion of the problems of air freight in the region, see Kissling (1980:52-9).

rates and availability. The non-storeability of the cargo means that regularity and frequency are essential, and this means that small, high-cost aircraft must be used unless the market for the output is very large.

No doubt some markets may be able to use air freight effectively. A few high volume markets may be able to use specialized aircraft. Producers of light, high value products which can be stored can make use of passenger aircraft. In the main, there is little likelihood of air freight being able to make a large impact on trade patterns.

Appendix 6.2

Cost-benefit analysis of transport projects

If transport services are to be provided efficiently, long-term investments must be evaluated appropriately. The normal approach favoured by economists is cost-benefit analysis. Thus additional port facilities or extensions to runways can be subjected to analysis. There is often pressure on analysis to produce justifications of projects, rather than to test them rigorously. This is probably so in some cases in the South Pacific nations. Two problem areas will be considered here.

Externalities are often valued and included as benefits of the projects. Thus, it is common to assume that additional tourism results from airport extensions, and that tourists provide positive net externalities. The value of these externalities can be debated: often they are grossly overestimated. However, the point here is that, regardless of how valuable these externalities are, it is not always necessary to build the project to gain them. There are cheaper ways of obtaining the same benefits.

Take, for example, the study of airport extensions at Faleolo in Western Samoa (Western Samoa 1985). Virtually all the benefits from the project were secondary benefits which derived from tourism. Yet it is not clear how the extensions actually encourage tourism growth. Airport extensions lower airline operating costs - this is a genuine benefit. They also enable services (e.g. direct services) which previously were not possible. Travellers, however, could have travelled on indirect services, though at higher costs. The benefits can thus be fully analysed in terms of transport cost savings.

If tourism benefits are expected, these can be obtained (a) through extension of the airport, or (b) through subsidies, equal to the transport cost savings from the project. Efficiency requires that the cheaper of these alternatives be adopted. Thus, the test for the project should be whether the cost savings alone are greater than its cost. If they are not, the tourism externalities can be obtained more efficiently through subsidies. Thus, the benefits from the extensions at Faleolo are greatly overestimated in the study.

The second problem arises in the analysis of who gains and loses from the project. From the nation's point of view, it is desirable that it is a net gainer. It is necessary to determine exactly which of the benefits are obtained overseas and which are not; this is a major problem with projects which involve international transport. With aid, some of the costs will be incurred overseas. Are projects to go ahead, even though benefits

are less than costs, because some of those costs are recovered from overseas? There is an incentive for countries, when proposing projects which will be partly funded from overseas, to make such projects seem as attractive as possible. Specific grants for projects encourage inefficient patterns of expenditure, and inefficiency within the transport sector. Greater gains can be achieved by general grants to the nations, which can then choose which projects are best to support on the basis of their total cost.

Chapter 7

Telecommunications in the South Pacific: the economic issues

Chee-Wah Cheah

Defining telecommunications issues in the Pacific

Until recently, a very small total population scattered over vast distances made the cost of communications high within Pacific island countries, among the island groups and with the rest of the world. However, with the introduction of satellite technology, the islands' situation has changed dramatically. With appropriate organization, the islands, including small remote communities, could have economic, financially affordable access not only to reliable point-to-point telecommunications (telephone, telegraph, telex etc.) but also to clear radio and television broadcasting. Two-way television communication, with its enormous educational and social potential, seems to be a mere decade or so away. Unfortunately, without appropriate organization and in the absence of an economic and social as well as financial and technical organizational approach, the Pacific islands could be left behind with high cost and limited telecommunications till the end of the century or longer.

Initially, telecommunications capability in the Pacific islands was dependent on the laying of submarine cables. Fiji, the only island to be tied into the global network, was not connected until 1921. With the development of radio communications, and particularly with microwave radio, the other South Pacific islands were brought into the worldwide communications network, and communications within island groups and for small and remote countries and territories improved. But the form of communication was limited and largely proportional to distance from 'hub' facilities because terrestrial communications are tied to wires, cables or microwave repeaters. The costs of establishing and maintaining microwave networks for remote communities with low traffic frequencies are high. They were nevertheless incurred because telecommunications are an essential component of development. Telecommunications are essential to the growth of productivity by greatly improving the availability of information, making the coordination of economic activities

possible and facilitating trade and investment. Telecommunications also extend access to health, education, public administration and other services. In the Pacific telecommunications are essential to minimizing the effects of such disasters as typhoons. Effective, rapid communications are essential to national political development.

Satellite technology, notably recent advances in the introduction of high powered satellites and small, relatively inexpensive earth stations have dramatically changed telecommunications options for the Pacific. For many users satellite communications are extremely flexible and have relatively lower cost in comparison to terrestrial communications.

The greatest advantage of satellite communications for the Pacific is the cost-insensitivity to distance. The cost of providing circuits to remote areas is virtually the same as that of providing circuits to nearby communities. Unlike terrestrial systems, the installation of satellite communications capability is independent of location in the sense that earth stations can be placed in any community that requires services; it is not dependent on extensive power and surface transportation facilities as terrestrial communications are. Accessibility and maintenance costs are minimized because, unlike microwave repeater stations, ground segment facilities are located right in or near communities that are being served. Satellite systems can, moreover, be constructed with a considerable degree of flexibility with respect to capacity. In contrast to terrestrial systems which must be planned and built for peak-load demand, the initial end-to-end capacity of satellite links can be as low as a single voice channel using single channel per carrier equipment. Additional capacity can then be installed in those locations where it is needed or when demand warrants service expansion.

Cost savings within a satellite network can be achieved when the space segment, that is, transponder capacity, is shared among earth stations on a demand assignment multiple access (DAMA) basis. The DAMA system operates on the engineering principle of assigning satellite capacity as it is required and requested by network users. In practice, a DAMA circuit between two earth stations is established from a pool of circuits only when needed for a call from one earth station to the other. The implementation of a satellite network with DAMA capacity can therefore economize on space segment charges by avoiding the leasing of transponder capacity on a dedicated or full-time basis. DAMA services are especially advantageous on thin-traffic routes, for example in rural telecommunications, where demand is too low to justify dedicated allotments of transponder capacity.

Telecommunications organization and facilities

The five principal island economies of Fiji, Solomon Islands, Tonga, Vanuatu and Western Samoa are organized on a similar basis. In each island there is a monopoly national carrier which provides public and leased communication services; a private or mixed private and public international carrier; and a government body or ministry in charge of overall regulatory functions. The various telecommunications organizations in the South Pacific are indicated in Table 7.1. All use the International Telecommunications Satellite Organization (INTELSAT) satellite system to operate international services with one major earth station anchoring the service in each country (see Table 7.2).

Table 7.1 Telecommunications organizations in the South Pacific

	Telecommunications administration	National carrier	International carrier
Fiji	Ministry of Works and Communications	Posts and Telecommunications	FINTEL
Solomon Islands	Ministry of Transport, Communications and Government Utilities	Posts and Telecommunications Dept	SOLTEL
Tonga	Telecommunication Board	Department of Posts and Telecommunications	VANITEL
Western Samoa	Postal and Radio Department	General Post Office	General Post Office

Source: Author's compilation.

The flexibility of communication satellites make them ideal telecommunication carriers in a wide variety of circumstances. They are particularly suited to the vast expanses of water that separate the small island economies of the Pacific Ocean. Satellite technology offers the Pacific the prospect of leapfrogging or accelerating phases of telecommunications development that industrial economies took almost a century to pass through.

The greatest potential of satellite technology is, of course, for multiple access and broadcasting purposes. A satellite can serve multiple users over a wide geographical area. This makes teleconferencing for distance education, other training or health care delivery, economic for small countries and units. Until recently, the University of the South Pacific was able, for its extension work, to make use of a satellite close to the end of its useful life. From an economic, social and political point of view, even more importantly, with somewhat more sophisticated ground stations than those required for telephony, television transmission and reception can be provided through the same satellite network that is used for point-to-point communications.

In view of the multi-faceted opportunities afforded by satellite communications, telecommunications development in general, and applications of satellite technology in particular, cannot be divorced from broad economic, social, cultural and other national planning. Policymakers must be aware of the costs that will result from the failure to fully exploit available technology, not only for the provision of high-quality and reliable telephone, telex and other services, but also for the delivery of augmented services that have widespread national implications.

Although economies of scale have become less important in the telecommunications end of broadcasting, these remain very important in the organization of telecommunication services, particularly in television. This is only partly because of the physical capital intensity of television broadcasting. Television broadcasting, to a much greater degree than other telecommunication services, is very intensive in its use of human capital. If the Pacific nations want to have economic and high quality television broadcasting, and if they at the same time want to have a reasonable content of local broadcasting material without extensive expatriate involvement, they will have to join together to create a regional television service.

Table 7.2 INTELSAT earth stations and international satellite traffic in the South Pacific

	Location	Type	Operator	Date installed	International traffic, 1979 (in ½ voice-circuits)
	Location	Type	Operator	Date installed	
Fiji	Wailoku	Standard A	FINTEL	1975	34
Solomon Islands	Honiara	Standard B	SOLTEL	..	7
Tonga	Nuku'alofa	Standard B	Cable and Wireless Limited	..	10
Vanuatu	Vila	Standard B	VANITEL	1979	19
Western Samoa	Afiamalu	Standard B	GPO	1980	..

Notes: Standard A has a large dish antenna, typically 30 metres in diameter.

Standard B has a small dish antenna, typically 10 to 11 metres in diameter.

1 voice-circuit = 20,000 paid minutes of telephone calles per annum.

Sources: PSSC (1981), Pelton (1981).

In Fiji, domestic telecommunications services are provided by the Posts and Telecommunications Department, a semi-independent unit within the Ministry of Works and Communications. Automatic telephone exchanges with direct dialling are available on the main island of Viti Levu and the outer islands can be reached either by telephone or by high-frequency radio. When the new Commonwealth Pacific (COMPAC) submarine cable landed at Fiji in 1963, Fiji began to enjoy relatively high quality outlets to other COMPAC countries (Australia, Canada and New Zealand) and, through them, to other international networks. The international carrier, Fiji International Telecommunications Limited (FINTEL) was formed in 1976. It is owned by Cable and Wireless Limited (49 per cent) and the Fijian Government (51 per cent). FINTEL operates a satellite earth station in Wailoku as well as cable and radio facilities. FINTEL provides a total of forty telephone circuits; of these fourteen are to Australia and twelve to New Zealand. A replacement earth station, with an operating life of 15 years, is to be constructed in 1987. Overall administrative responsibility for telecommunications in Fiji rests with the Ministry of Works and Communications.

Domestic telecommunications services in the Solomon Islands are provided by the Posts and Telecommunications Department. The domestic facilities include automatic telephone exchanges in Honiara, Gizo and Auki, and HF radio telephone links throughout the island group. An international carrier, Solomon Islands International Telecommunications Limited (SOLTEL), a joint-venture company owned by Cable and Wireless Limited (51 per cent) and the Solomon Islands Government (49 per cent) was established in 1978. SOLTEL has a ten-year franchise (commencing in 1978) to provide and operate all international circuits from its earth station at Honiara via INTELSAT. Solomon Islands' other international links include two HF radio telephone circuits via Sydney. There are at present fifteen voice circuits to Australia, three to Papua New Guinea and two to New Zealand. Full international dialling facilities are available at all urban centres except Gizo and Kira Kira. The administration of telecommunications in the Solomons is the responsibility of the Ministry of Transport, Communication and Government Utilities.

In Tonga, domestic services were provided by the Telecommunications Division of the Telegraph and Telephone Department until 1984. Since then, the responsibility for internal service provision and operation is vested in the Tongan Telecommunications Commission, an autonomous body administered by a newly created Telecommunication Board. All international services are provided by Cable and Wireless Limited under a ten-year franchise arrangement beginning in 1978. A ten-year extension has just been negotiated. Cable and Wireless owns and operates an INTELSAT earth station at Nuku'alofa. An automatic telephone system was to be started under Tonga's Third Five-Year Development Plan (1975-80). Inland communications are based on HF radio telephones.

In Vanuatu, the Department of Posts and Telecommunications serves as both the national administrator and carrier of domestic telecommunications. A recently completed consultant's report on telecommunications organization in Vanuatu has recommended the replacement of the present government department by an autonomous body operating on a commercial basis. The urban centres of Vila and Santo are served by automatic telephone exchanges, while HF radio transceivers are used for internal or inland communications purposes. A teleradio network of more than 100 stations connects users in outlying plantations and missions. Overseas radio telephone services are available to Australia, Fiji, New Caledonia and Hong Kong. Extended overseas services are available through an international carrier, Vanuatu International Telecommunications Limited (VANITEL) which was established in 1979. VANITEL is jointly owned by Cable and Wireless Pty Ltd and Cables et Radio (France). The government is currently renegotiating the franchise agreement with VANITEL to obtain a third equity partnership and a change in the revenue sharing formula. VANITEL operates an earth station in Vila.

In Western Samoa, the General Post Office provides domestic and international telecommunications as well as postal services. Automatic telephone links are available in Apia. HF radio telephones are used internally and externally with links to New Zealand and American Samoa. The Post Office operates an on-demand and no-delay international telephone service through an INTELSAT earth station facility located at Afiamalu. There are fourteen voice circuits to New Zealand, four to Australia and one to Fiji. The earth station is fully loaded and there are proposals for expansion at an estimated cost of WS$2.3 million. Administrative responsibility for all internal and external telecommunications lies with the Postal and Radio Department.

In addition to domestic arrangements, a country's telecommunications network is subject to international rules and regulations regarding interconnections among common carriers. The three international bodies which are of particular relevance to the South Pacific include the International Telecommunication Union (ITU), INTELSAT and the South Pacific Bureau for Economic Cooperation (SPEC). The ITU's primary role in telecommunications is to provide a forum through which multilateral agreements on accounting, operating procedures and technical standards are established. The ITU has contributed to various aspects of telecommunications development in the South Pacific by providing technical assistance in project planning and management, and by establishing training programs for the region. A regional training project initiated by the ITU and the United Nations Development Programme (UNDP) led to the establishment of a Telecommunication Training Centre in Fiji in 1975 (ITU 1980b).

INTELSAT is a satellite system consortium which owns and operates the INTELSAT IV-A satellite that serves the Pacific Basin. Although all five island economies make use of the INTELSAT system, Fiji is the only INTELSAT signatory country at present. Vanuatu is expected to join in the near future. The responsibility for coordinating regional telecommunications lies with SPEC, which acts on behalf of the Forum Prime Ministers. The importance of the regional approach to telecommunications cannot be over-emphasized since no single island economy possesses sufficient resources for establishing and maintaining an extended telecommunications network.

Current telecommunication services are generally considered inadequate even for the relatively low levels of economic activities which at present characterize the South Pacific (ITU 1980b). Internal telecommunications between islands or between coastal and inland areas are especially poor. The HF radio systems used are constrained by infrequent contact schedules and unfavourable atmospheric conditions. With the availability of alternative bearer choices, that is submarine cable in the case of Fiji and satellite communications, the unreliability of HF radios has become significantly less important for international

telecommunications. But national communications continue to be low standard because terrestrial communications are poor and costly. Several technological innovations now being developed will further improve telecommunications in closely settled areas but, for rural and remote communities, satellite technology is likely to be the best economic and technical option for the foreseeable future.

Telecommunications demand and supply

Basic telephony. Telecommunications in the Pacific have expanded quite rapidly during the last 30 years, with the emphasis on telephone and telex communications with principal trading partners, and hence with Australia and New Zealand. Commercial communications are profitable, and much of the planning of Pacific communications has been done by Cable and Wireless in the context of joint ventures with national telecommunications organizations which wanted to show that they were commercially viable. Emigration fostered this trend. For example, two-thirds of telephone calls from Tonga are collect. But this has meant that, despite considerable aid inputs, rural communications and intra-island telecommunications, particularly for small and isolated communities, and the social aspect of telecommunications, have been neglected.

Tables 7.3 and 7.4 indicate that traffic among Pacific islands is much lower than traffic to trading (including tourism) partners. Within each of the principal island economies, the volume of international traffic constitutes quite a sizeable portion of total telecommunications (Table 7.5). Moreover, the relative importance of international versus inter- and

Table 7.3 Telecommunication traffic flows in the Pacific Basin (% of total traffic)

	Destination		
Source	Metropolitan (Pacific rim) nations	Island nations	Sub-total (originating)
Pacific rim nations	30.7	54.1	84.8
Island nations	11.7	3.4	15.1
Sub-total (receiving)	42.4	57.5	100.0[a]

[a]Sub-totals do not add to 100 per cent because of rounding.

Source: Adapted from PSSC (1981).

Table 7.4 Destinations of international telephone calls from the South Pacific, 1979

Origin	Most frequent destination				
	First	Second	Third	Fourth	Fifth
Fiji	Australia	New Zealand	US	UK	Canada
Solomon Islands	Australia	PNG	Japan	New Zealand	UK
Tonga	New Zealand	Australia	US	Fiji	UK
Vanuatu[a]	New Caledonia	Australia	France	..	..
Western Samoa	American Samoa	New Zealand	US	Australia	Fiji

[a]Information given is for 1977.

Source: AT&T Long Lines (1981).

Table 7.5 Relative importance of international telecommunications

	International telephone traffic		International telex traffic	
	Per cent of total telephone calls up to 1982	Average annual growth rate (%) 1976-82	Per cent of total telex minutes charged up to 1982	Average annual growth rate (%) 1976-82
Fiji	24.3	59.3	79.0	19.5
Tonga[a]	30.6	71.0	100.0	..
Vanuatu	2.9	29.5	91.8	13.3

[a]1981 data and growth rate between 1976 and 1981.

Source: Author's calculations using data in ITU (1984).

intra-island telecommunications increased during 1976-82. As a result, the usage of extant facilities for international telephone calls and telexes has become more intensified (Table 7.6). It is very likely that the overloading and over-use of the available facilities have contributed to an overall poor quality of service in the region.

In general, it seems that there is considerable unsatisfied demand for telephones (Table 7.7) but this could be merely a reflection of unduly low connection and/or service charges. With the exception of Fiji, the levels of telephone penetration in the region are typical of those of other developing countries (Table 7.8). The level of telephone penetration in Fiji is well above the average level (3.5 telelphones per 100 persons) for all Pacific island countries. Social considerations have clearly not been taken into account as, except in Fiji, most telephones are in main urban centres.

Table 7.6 International telecommunications usage

	Average number of overseas calls per telephone		Average number of international telex minutes charged per subscriber line ('000 minutes)	
	1976	1982	1976	1982
Fiji	4.1	44.1	1.5	1.8
Tonga[a]	8.2	142.9	0.1	1.6
Vanuatu	6.1	22.0	2.8	1.3

[a]Data for 1979 and 1981 respectively.

Source: Author's calculations using data in ITU (1984).

Table 7.7 Supply of, and demand for, telephone lines

	End of year	Lines in service ('000)	Waiting list ('000)	Total registered demand ('000)	Per cent registered demand met
Fiji	1976	17.4	6.4	23.8	73.1
	1979	21.3	9.7	31.0	68.7
	1982	25.8	9.4	35.2	73.3
Tonga	1976	0.5	1.5	2.0	25.0
	1979	0.9	0.5	1.4	64.3
	1981	1.7	0.4	2.1	81.0
Vanuatu	1973	0.7	0.6	1.3	53.8
	1976	1.1	0.02	1.12	98.2

Source: Author's calculations using data in ITU (1984).

Table 7.8 Telephone availability and accessibility, 1979

	Telephones per 100 persons	Telephones in main cities as per cent of total telephones	Population in main cities as per cent of total population
Fiji	6.0	45.9	13.9
Solomon Islands	1.1	99.5	9.5
Tonga[a]	1.9	100.0	20.0
Vanuatu	2.4	95.0	14.0
Western Samoa	3.1	100.0	23.1
Australia	48.9	68.3	68.1

[a]1977 figures.

Source: AT&T Long Lines (1981).

Broadcasting services. The demand and supply for point-to-point services can no longer be considered in isolation from broadcasting, and particularly television broadcasting. Each Pacific country has a well-established radio broadcasting network. The quality of radio broadcasting can be greatly improved if it is distributed by satellite rather than by terrestrial means. This can be done economically in conjunction with telephone and other point-to-point services. The demand for television services is high in the Pacific as it is in the rest of the world. It is evident in the number of television aerials in Western Samoa that are tuned into American Samoan services and in the high penetration levels of video equipment in the urban centres throughout the Pacific.

However, television cannot be considered from the entertainment viewpoint alone. It has a tremendous potential for educational progress by being able to provide services for adult education and for upgrading the curriculum in schools. Television can contribute to rural development through agricultural and other extension programs, and to general community development through informational programs on health care and other subjects. It is an important determinant of cultural values, and can assist in developing other values in the community. It has a political impact. In many developing countries national television services are being used for all these purposes through one television supply service that allocates time slots for various purposes. Evening 'prime time' is retained for entertainment programming plus advertisements, the revenue from which is then used to cross-subsidize other services. Taking advantage of the television potential requires a high degree of government policy involvement together with some investment in transponder, broadcasting and hub earth station investment. It would also require a scheme to enable communities to buy small earth stations. If they do not partially or wholly finance the latter, maintenance will become a major problem. But these policy and investment issues are not being tackled because telecommunications planning has been largely left to point-to-point service considerations and thus to the traditional, engineering telephone, telex type communication organizations. The availability of an AUSSAT satellite specially configured to the Pacific, in addition to the INTELSAT services, has made the question of satellite television broadcasting an immediate issue.

A direct broadcasting satellite enables television signals to be uplinked to a satellite from a central source and then distributed to a multiplicity of locations by means of high power transponders and concentrated beam antennae. Television signals can be received through very small earth stations (1-2 metre dish antennae) located in a community centre or individual homes.

The current INTELSAT satellite VISTA service, specially designed for small, developing countries, does not have a strong

signal for the Pacific, but the extension of the existing international system is likely to be attractive despite the relatively high costs of earth stations. A 30-watt and two 12-watt transponders of the third AUSSAT satellite have been configured for the Pacific, and television services can be provided on the same system as other telecommunications.

For large urban concentration use the television signal can be uplinked to the satellite and downlinked to 4-5 metre earth stations equipped with down connectors so as to make the signal suitable for retransmission on conventional VHF or UHF frequencies. The TV signals can also be beamed to the satellite for relay to outlying areas with larger hub earth stations (6 metre dish antennae).

The INTELSAT and AUSSAT systems do not use the same language, and are therefore not compatible. While the AUSSAT signal is stronger, it is attenuated in bad weather, and thus requires more complex earth station equipment than INTELSAT. To receive equal performance from the weaker INTELSAT signal, however, requires somewhat larger earth stations.

Costs are not clearly defined. For both AUSSAT and INTELSAT the Pacific is a small customer, and both organizations are hence prepared to sell services at marginal cost, somewhat under $1 million for a 12 watt transponder. For a regional service this would be very economical. Earth station estimates vary from $12,000 to $50,000, depending on size and equipment. Costs are likely to come down (in real terms) as production increases and becomes competitive. Assuming a point-to-point together with television receiving earth station, $20,000 is probably not an unreasonable estimate. With appropriate financing arrangements this would be affordable throughout the Pacific.

A third satellite source may be provided by PACSTAR if Papua New Guinea decides to invest in this system. Initial estimates were that it could be operational by 1988-89 (Keith-Reid 1985) but launch delays would now make this impossible even if an agreement could be reached shortly between Papua New Guinea and the financiers for the system.

The demand for television is too strong to allow policy issues to be settled at leisure. In addition, commercial broadcasters want to position themselves to monopolize potential services. Although the Pacific market is small - 1 1/2 million people with relatively low incomes - for a broadcaster with existing equipment and access to programs it offers a potential steady, if small, source of income. Television broadcasting is thus moving quickly in the Pacific.

In Tonga, a television station licence has been awarded to a private entrepreneur on a yearly basis. The station, ASTL-TV3,

offers a subscription service (T$15 per month in addition to a one-time T$150 connection fee) with complete coverage of the main island of Tongatapu. Programming is by pre-taped programs from the United States (which include news, variety, movies and sports). Television signals (including commercials inserted between programs) are scrambled and transmitted via a microwave tower to subscribers equipped with descrambler devices. The station owner is currently in the process of installing a 4-metre receive-only wire-mesh dish antenna to pick up TV signals from the INSAT (India), PALAPA (Indonesia) and INTELSAT satellites. There are also plans for the introduction of very basic local programs based on local events (such as school sports, weddings, etc.) of community interest. At present, the station has about 1000 subscribers, but with the extended families in Tongan society, the potential audience size is thought to be as large as 10,000. A service is also proposed for Niue.

The Fiji Television Corporation Ltd, a joint venture of Publishing and Broadcasting Ltd (80 per cent) and the Fijian Government (20 per cent), was registered in December 1985 as a company in Suva. PBL has been granted a 12-year licence to provide TV services. The programming content of the proposed station includes fifty hours of United States' programs beamed by satellite from Australia's Channel Nine network studio in Los Angeles via INTELSAT. The speed at which Fiji's local company has been formed is explicable in terms of a ready market for home entertainment in Fiji, where it is estimated that VCR (video-cassette recorder) urban penetration is in the order of 77 sets per 100 population.

An American company is proposing a cable system for the islands. In all these cases revenue will be a mix of subscription and advertising, and costs are low because long depreciated programs are used. The respective governments in the South Pacific region have so far, seemingly, invested very little effort in the formulation of explicit policies for relating the introduction of television to development goals. It would be unfortunate if indiscriminate television services were brought in, not for reasons of promoting socioeconomic and cultural development, but as a result of a commercially attractive proposition by foreign broadcasting companies. Since the bulk of the viewing audience (and hence, source of advertising revenue) is in urban centres, skimming the cream off urban television demand is even more likely than in the case of point-to-point telecommunications. This has the consequence of placing target population for developmental efforts (namely rural and remote communities) last in line to receive the benefits of television broadcasting.

Sectoral investment cost recovery

Except in Fiji, levels of telecommunications investment in the region have been relatively low by international standards despite the availability of aid funds (Table 7.9). However, in the absence of detailed cost and price data in relation to clearly stated national objectives, it is difficult to gauge the 'optimality' of investment levels in the islands. Nevertheless, there is a noticeable decline in the investment priority accorded to the sector. Such a trend is inexplicable in terms of the high rates of return that are typical of telecommunications investment. It is more likely due to institutional inadequacies relating to planning, organizational and financial considerations.

As government enterprises, telecommunications administrations in the islands do not have the full autonomy to retain surplus revenues which can be used for continued investment in telecommunications development. In Vanuatu, for example, funds for recurrent and capital expenditures are allocated to the Posts and Telecommunications Department through a national budgetary process. Such a process is quite indifferent to the nature and distribution of benefits from telecommunications expansion projects. Central planners are also likely to underestimate, if not to be totally unaware of, the ability of telecommunications entities to meet most investment requirements from internally generated revenues when appropriate organizational measures and pricing policies for the sector are implemented.

Standard welfare economics prescribes that tariffs should be set equal to marginal or incremental cost of service provision. This makes users reveal their relative preferences. But though highly desirable in terms of efficient resource allocation, marginal pricing is of limited practical value in terms of promoting a widespread usage of telecommunications among low-income groups or in low-traffic density areas. In the South Pacific, the efficacy of marginal cost pricing is diminished further by: (i) supply constraints that inhibit the extent to which effective demand can be fully exercised in the short run (see Table 7.7); and (ii) imminent systems congestion in the terrestrial segments owing to low rates of telecommunications investment (see Tables 7.6 and 7.9).

Higher connection fees would need to be levied if the existing demand backlog is to be reduced. At the same time, a sufficiently high level of user charges would also be required to clear that portion of the market where system capacity is near exhaustion or fully utilized. Apart from their obvious role in rationing the available supply of service to those who value them the most and can earn incomes to be able to afford them, such pricing policies are important for the recovery of both current and capital costs as well as for the generation of financial resources to improve or expand facilities that will meet the needs

Table 7.9 Telecommunications investment as proportion of GDP

	End of year	Investment as per cent of GDP
Fiji[a]	1976	0.41
	1979	0.55
	1982	0.07
Tonga[b]	1980	0.08
Vanuatu[b]	1975	0.02
	1978	0.001
Average for 12 industrialized countries[c]	1979	0.90
Average for 12 developing countries (including Fiji)[c]	1979	0.35

Sources: [a]ITU (1984).
[b]Fargo (1981).
[c]Saunders and Dickenson (1979).

of targeted groups and areas. Such pricing policies are articulated in Fiji's Eighth Development Plan 1980-85, wherein one of the sectoral objectives for telecommunications development is 'the generation of 80 per cent of capital budget requirements from internal P&T [Posts and Telecommunications] revenue ... [by] regular reviews and adjustment of tariffs which will also reduce somewhat the effective waiting list for telephones' (Fiji 1980:218-19). In principle, the implementation of higher connection fees and user charges should not be too problematical given the monopoly positions of telecommunications entities and the short-run price inelasticities of demand for international and urban services (Saunders et al. 1983).

National and regional interests and organization

The present pattern of telecommunications development in the South Pacific is marked by unsatisfied demand and acute imablances in rural-urban facilities. National development efforts are seriously undermined because of the high economic opportunity costs of not meeting demand levels at urban centres and of the failure in providing adequate and reliable rural telecommunications. The goal of universal service provision

requires long-term political commitments from the respective national governments. Such commitments must be accompanied by policy decisions relating to the generation of revenues for overall system operations via appropriate user charges, design of subsidization schemes for less profitable rural services, and allocation of investment capital for rural facilities. In the interim, it may be possible to compensate for the existing deficiencies of rural telecommunications by expanding the coverage of public telephones or by upgrading existing HF radio systems.

The latter option presumes the retention of requisite linkages for bi-directional traffic between island economies. But the more economically advanced countries (e.g. Fiji), the opportunity costs of retaining and upgrading an international HF radio system may be considerable. This is because the de-escalation or cessation of HF radio services could free resources for expanding the telephone network or maintaining the operation of satellite links. In short, the more advanced island economies may have less of an incentive to continue HF radio operations than to pursue their own self-interest through satellite communications. If this turns out to be the case, then the lack of regional cooperation will lead to a widening of disparities between the level and quality of services provided in the various island economies. In view of diseconomies of scale in the provision of rural services, it behoves policymakers in the South Pacific to develop region-wide policies.

In the long run, the satellite remains the most practical, economic and socially effective bearer in relation to the spatial characteristics of the South Pacific. But because the existing satellite in the Pacific region has been designed primarily for thick international/urban routes, its use for rural telecommunications may require innovations in systems planning and design. In particular, policymakers and planners will need to be conscious of the characteristics and communications needs of rural users (e.g. receive-only versus receive-transmit capabilities), and the specific development objectives and programs that are to be served by rural satellite systems (e.g. agricultural extension, health care delivery and tele-education).

Whichever satellite system is used, an extensive installation of earth stations will be required. As those facilities constitute the bulk of capital expenditures in satellite communications, alternative systems will have to be explored. It is conceivable that rural services can be just as well provided by a hybrid satellite-terrestrial network with centrally located earth stations that make use of existing or upgraded radio systems in the 'last-mile' connections between users. The INSAT and PALAPA rural satellite projects have been able to integrate satellite technologies with existing terrestrial system cost effectively in densely populated conditions. A proper evaluation of the various satellite alternatives for rural telecommunications

in the South Pacific will require further work in terms of explicit systems design and an identification of cost variables associated with the relevant technical specifications. Some assessment of the economic impact and social benefits of rural satellite communications will also be required.

The task of assessing telecommunications benefits is not familiar to the authorities in the South Pacific which have fairly recently assumed control of their respective telecommunications administrative structure. While there are no reasons to question their competence in telecommunications project planning and appraisal, the welfare repercussions of telecommunications expansion may be glossed over by 'administrative processes ... inherited from the colonial governments [which] are directed more at the maintenance and extension of government control than at development administration' (Tsusaka 1984:71). Thus conscious efforts must be made to develop and maintain a comprehensive and systematic approach that takes into account the heterogeneity of telecommunications needs and differences between private and social costs and benefits.

The economies of scale in telecommunications investment, operation and training are such that cost effective Pacific systems would require a regional framework. This has been recognized in the establishment of the South Pacific Telecommunications Program at the South Pacific Bureau for Economic Cooperation. Unfortunately the program is largely focused on rural telecommunications, and thus ignores possibilities of cross-subsidy.

The program was estimated in 1985 to cost $US120 million over 10 years for the Pacific. It is not clear, however, what this program will encompass and there has not been an economic and financial evaluation of the program as a whole or of its component parts. Cooperative ownership or management is not envisaged. These issues, however, will have to be resolved if the Pacific is to have a cost-effective, affordable telecommunications system.

Chapter 8

Tourism in the South Pacific

Larry Dwyer

In each of the nations of Fiji, Vanuatu, Western Samoa, Tonga and Solomon Islands, tourism is a 'growing' sector. While tourism is expected to play a significant role in each nation's development, in general little is known about its economic impact and the extent to which it promotes and conflicts with particular development objectives.

This chapter provides an overview of the costs and benefits of tourism to these nations. The aim is to place tourism in its proper perspective as a basis for economic and social development in the South Pacific. As will become evident, the scarcity of reliable data very often limits the extent to which the economic impact of tourism can be quantified. Where possible, however, qualitative assessments of the likely impact have been provided, problem areas highlighted and topics for further research are identified.

Assessing the economic impact of tourism in small island nations

On the one hand, the five Pacific nations have limited land areas, small manufacturing sectors and limited energy resources to drive secondary industry. On the other hand, they are faced with increasing populations, increasing trade deficits and worsening unemployment. Given the rising expectations of citizens for an improved standard of living it is small wonder that tourism, an export industry unhampered by smallness, an elementary manufacturing base and surplus labour, appears to be an important means of promoting development.

The objectives of the tourist industry, as set down in each nation's development plan, include goals such as increasing foreign exchange earnings to reduce balance of payments deficits, the generation of employment, the establishment of positive and mutually supportive linkages with other sectors of the economy, and reducing the reliance on imports, while at the same time preserving traditional values and cultures. For ease of exposition the economic impact of tourism will be considered under three headings, namely, tourism as a source of foreign exchange

earnings, contribution to gross domestic product (GDP), and contribution to employment. Other significant effects of tourism are of an intangible sort, defying precise measurement. Especially important here are externalities such as the effects of increasing numbers of tourists on local culture, attitudes, traditions and so on, and the effects of increasing visitor numbers on the quality of the environment. While discussion of these effects has often taken the form of cataloguing the potential socio-cultural and environment costs of tourism it perhaps needs to be emphasized that such externalities can be favourable as well as unfavourable. Thus, tourism can help preserve traditional cultural practices such as dance, music, handicrafts, art and architectural styles as well as monuments, sites and other areas important to a nation's heritage. It can lead also to provision of facilities and attractions which residents can use and enjoy and the conservation of areas of natural beauty. While the socio-cultural and environmental impact are greatly dependent on the type and scale of tourism development it is very difficult to isolate the impact of tourism per se from the wider process of social change. While the socio-cultural and environmental effects of tourism will not be considered here it must not be assumed that they are unimportant.

As a preliminary to discussion of the economic effects of tourism on the five nations it seems appropriate to summarize, very briefly, the potential benefits and the constraints upon them (cf. International Union of Official Travel Organisations (IUOTO) 1976).

Tourism as a source of foreign exchange earnings. Each of the nations suffers from a shortage of foreign exchange which acts as a major constraint on economic development. With slowly growing and sometimes stagnating agricultural production, unstable and low export prices, a narrow export base and depleted foreign exchange reserves, tourism can make a significant contribution to each country's balance of payments.

Inflows of foreign currency in the form of tourist expenditure and inflows of foreign capital investment in tourism plant exaggerate the tourist sector's contribution to the balance of payments, however. Outflows of foreign exchange brought about by tourist sector activity must be subtracted from inflow to determine the net foreign exchange receipts of a country's tourist industry. Five sorts of leakage may be identified: imported goods and services consumed by visitors including not only direct but indirect imports, that is, the import content of the goods and services purchased by tourists from domestic suppliers; factor payments abroad, e.g. management fees to foreign concerns, interest payments on foreign loans, remittances overseas by expatriate employees, repatriated profits, etc.; expenditure on publicity and promotions of the country abroad, including any cost of overseas training of personnel; imports of capital goods for

tourist accommodation and facilities, e.g. hotel construction material, fittings, furnishing, transport vehicles, parts and equipment; and imports due to increased consumption by residents, including not only any increased direct and indirect import content but also the increase resulting from the so-called 'demonstration effect' of tourist expenditure.

Although tourism can play an important role in diversification of a country's export earnings, the sorts of leakages mentioned here are significant in each of the five nations and limit the potential economic benefits to each. The magnitude of the foreign exchange leakages which occur in a country will depend on such things as the structure of ownership and control in the tourist industry, the type of accommodation and tourist facilities offered and the extent of the linkages between the sectors meeting final tourist demand and the other producing sectors.

Tourism's contribution to domestic value added. National income is increased both by tourist expenditure and by investment in tourist-related plant and equipment. Tourist expenditure has direct, indirect and induced effects on national income. The direct effect is on suppliers who sell goods and services directly to tourists. Tourist expenditure is received as revenue by hotels, restaurants, tour and transport companies, shops, entertainment venues, etc. In the process of satisfying tourist demand value added accrues to the employees as wages, to the owners as profits or to the government as tax revenue (thus constituting an important source of development financing). Indirect effects result from 'flow ons' when direct suppliers purchase inputs from other firms which in turn purchase inputs from other firms and so on. The induced effects arise when the recipients of the direct and indirect expenditure - firms and their employees - spend their increased incomes which in turn sets off a process of successive rounds of purchases by supplying industries and further induced consumption. Tourism thus helps to overcome small market size by expanding the demand for goods and services providing the opportunity for existing and new industries to develop on an economic scale. Further, because the tourist sector itself is composed of several branches, the immediate impact of tourist expenditure is usually more widespread than that of the receipts of the export industries. With respect to investment in tourist-related plant and equipment, the expansion of accommodation and other facilities and infrastructure such as improved roads, communications, power generators etc. can serve the local population as well as tourists.

The overall multiplier effect and, hence, tourism's contribution to GDP is however reduced by the leakages overseas. The direct, indirect and induced effects of tourist expenditure on national output are each limited in this respect as is the economic impact of investment in tourism plant. Foreign

investment, necessary for construction of tourism-related facilities, can also result in increased ownership and control of the tourist industry by overseas interests, further weakening the beneficial economic impact locally. In general the less developed the linkages are between the tourism industry on the one hand and primary and secondary industry on the other, the less the contribution that tourism-related spending makes to domestic value added. The greater tourism's contribution to GDP, moreover, the greater the vulnerability of the economy to any instability in tourism numbers.

Tourism's contribution to employment. Tourism is essentially a labour-intensive service industry. Its effect on employment can be analysed in the same way as for its contributions to GDP. Employment is generated in the tourist sector itself (e.g. hotels, tours and transport, shops and government administration of tourism), in the tourism supplying sectors (e.g. agriculture, distribution, food processing, financial and other services), in the construction of tourist accommodation and tourism related infrastructure, with additional multiplier effects from all these sources. The type of labour most in demand by the tourist sector is unskilled and semi-skilled, typically in excess supply in the island economies. Employment opportunities may be expanded for self-employed small-scale entrepreneurs offering goods and services to tourists, for example guides, vendors and transport operators. While newly developing tourist industries tend to employ a disproportionate number of expatriates in executive positions, in the longer term, with suitable education and training, locals may be expected to acquire the skills necessary for management positions in various areas of the tourism sector. Further, employment can be generated in regions far removed from the main tourist areas, as, for example, in the production of handicrafts which are transported to centralized sales outlets. This fact, together with the creation of employment opportunities when a tourist resort is located at some distance from an urban area, helps redress regional imbalances. In general the magnitude of both the direct and indirect employment generated depends not only on the rate of growth of tourist expenditure and tourist-related investment but also on the linkages between industries. The greater the degree of integration and diversification in an economy the greater the amount of employment generated from a given amount of tourist spending.

These are the economic effects of tourism that will be considered in relation to the five island nations. It is important to realize however that the foreign exchange earned from and the income and employment generated by the expenditure of tourists, requires current and capital inputs for which there are alternative uses. The economic benefits of tourism must, therefore, be weighed against those obtainable from alternative uses of the same resources. In this connection it is necessary to consider several questions. How much employment, income and

foreign exchange receipts result from those resources allocated to the tourism sector as compared to their allocation elsewhere in the economy (e.g. in import substituting primary or secondary industry)? What is the foreign exchange cost of obtaining the gross tourist expenditure, and how does it compare with the cost in other export industries? What is the opportunity cost of government expenditure on the promotion and administration of tourism, the provision of investment incentives for tourism-related activities and the installation and maintenance of infrastructure necessitated by increasing visitor numbers? Until such questions are answered, policy makers cannot make a fully informed choice as to the appropriate pace and direction of tourism development for each country.

The economic impact of tourism

Before discussing the economic impact of tourism, it seems appropriate to note, very briefly, some salient facts concerning the tourist industry in each country.

Fiji. In 1984 visitor arrivals by air totalled 235,227, while another 60,000 were cruise ship passengers. From 1968 to 1973 visitor numbers grew at an annual average of 20 per cent, but growth has been much more modest since then. From 1974 to 1980 visitor numbers increased on average by 4 per cent and despite some downturns caused by the world recession and Cyclone Oscar in 1981 and 1983 respectively, they have grown at 6 per cent per annum on average this decade.

Between 1979 and 1984, 42 per cent on average of all visitors to Fiji were from Australia, 21 per cent from North America, 16 per cent from New Zealand, 7 per cent from Europe and 6 per cent from Japan. In 1979 New Zealand contributed 23.5 per cent of all visitor arrivals, a share which steadily declined to only 11.4 per cent in 1984. The reasons for this seem to lie in New Zealand's ailing economy with its devalued currency and relatively inexpensive trans-Tasman fares. Although Fiji's share of the Australian travel market is declining because of more competitive holiday packages to Europe, Southeast Asia and the United States, Australia is by far Fiji's most important visitor-generating country and may be expected to remain so for the indefinite future.

The number of tourist rooms available as at July 1984 was 4038. Of these, 1599 rooms are of deluxe/first-class quality, while a significant proportion of hotel plant in the smaller size and medium price range is owned by local interests. Ninety per cent of tourist accommodation is located in three main tourist zones. Between 1980 and 1984 the room occupancy rate of all hotels averaged 56 per cent. This low occupancy rate would seem to be a legacy from excessive hotel construction during the

Table 8.1 Visitor arrivals by air, 1974-84

Year	Fiji[a] (no.)	% change	Western Samoa[b]	% change	Vanuatu[c]	% change	Tonga[d]	% change	Solomon Islands[e]	% change
1974	181,077	-2.8	-	-	17,249	5.1	-	-	4,724	-
1975	161,077	-10.7	24,290	-	15,838	-8.2	6,770	-	6,876	45.5
1976	168,665	4.3	26,563	9.4	17,929	13.2	9,312	37.5	7,090	3.1
1977	173,019	2.6	28,012	5.2	24,845	36.9	11,023	18.3	7,360	3.8
1978	184,063	6.4	28,136	-0.4	27,705	12.9	12,090	9.6	9,027	2.3
1979	188,740	2.5	27,076	-3.8	30,458	9.9	12,189	0.8	9,722	7.7
1980	189,996	0.7	33,579	24.0	21,973	27.9	12,505	2.6	10,517	8.2
1981	189,935	-0.03	34,304	2.2	22,092	0.5	12,611	0.8	11,171	1.1
1982	203,636	7.2	28,503	-16.9	32,180	45.7	12,443	-1.3	11,179	0.1
1983	191,616	-5.9	36,717	28.8	32,374	0.6	14,482	16.4	11,113	-0.5
1984	235,227	22.8	40,430	10.1	31,615	-2.3	13,713	-5.3	10,700	-4.0

Sources:

[a] Fiji (1980, 1984).

[b] Western Samoa (1984a and b); UNDP (1984a). The 1983 and 1984 figures include arrivals by sea (4730 in 1984).

[c] Vanuatu (1981, 1984a).

[d] Tonga (1981).

[e] Solomon Islands (1984); UNDP (1984b).

Recent statistics were kindly supplied by Ian Kennedy of the Pacific Area Travel Association.

Table 8.2 Visitor arrivals by country of residence, 1979-84 (per cent)

	Fiji[a]	Western Samoa[b]	Vanuatu[c]	Tonga[d]	Solomon Islands[e]
Australia	42	8	56	20	38
New Zealand	16	22	9	24	9
North America	21	14	2	19	6
Japan	6	-	10	3	5
Europe (incl. UK)	7	7	3	9	4
Other Pacific islands	5	35	14	9	32
Other	2	14	16	16	5

[a]Average 1979-84.

[b]Average 1982 and 1983. Other Pacific islands refers to American Samoa.

[c]Average 1978-84. Other Pacific islands includes 14 per cent from New Caledonia.

[d]Average 1983 and 1984. Other Pacific islands refers to Fiji.

[e]Average 1979-83. Other Pacific islands includes 18 per cent from Papua New Guinea.

Sources: As for Table 8.1.

tourist boom of the early 1970s (which, however, provided the major force for growth in the economy during those years). While substantial unused capacity still exists in medium and budget grade hotels, occupancy rates at the five leading resorts averaged 80 per cent in 1984. In response to pressure for better quality bedroom space several new hotel and resort proposals have recently been approved which will double the number of rooms available. This will reduce the overcrowding of hotels now experienced during the peak periods of July/August and December. The overall decline in the average length of stay (8.4 days in 1984 compared to a 1981 peak of 9.5 days) reflects the increase in American tourists whose holidays often involve multiple destinations in the South Pacific.

The prediction for visitor numbers for the rest of the 1980s is steady growth resulting in a doubling of tourists by the end of the decade (ADAB 1985:7). Lying along the main intercontinental air route with direct access from its major markets, with additional first class accommodation under construction and high occupancy rates in the resorts, there would seem to be no barriers to meeting the projections. Qantas has recently affirmed a

commitment to Fiji by way of its responsibility for managing Air Pacific. New management has made explicit its intention to boost tourist traffic into Fiji from North America and Australia. With the advent of United Airlines as a competitor on the trans-Pacific route it is also likely that Fiji could access the North American market more effectively than in the past.

Western Samoa. In 1984, visitor arrivals by air totalled 35,700 while the number of cruise ship passengers was around 6000-8000. Although estimates of the number of visitors have been published for some years, tourism statistics before 1982 are of doubtful accuracy. Despite some decline in 1979 and 1982 the annual average growth rate of visitors from 1975 to 1983 is 6.4 per cent.

During 1982 and 1983 an average of 22 per cent of all visitors were from New Zealand, 14 per cent from North America, 8 per cent from Australia, and 7 per cent from Europe. Approximately 35 per cent of all visitors were from American Samoa, the majority of whom stay with friends and relatives rather than seeking hotel accommodation. Excluding these, approximately 33 per cent of the remaining visitors were from New Zealand, 22 per cent from North America, 12 per cent from Australia and 11 per cent from Europe. Given the high proportion of ethnic Samoans arriving from New Zealand and North America (especially the United States) the contribution of these nations to Western Samoa's tourism is less than these figures might suggest. Between 1983 and 1984 the number of Australians visiting Western Samoa increased from 2935 to 5589, a rise of 90 per cent. Australia's contribution to total arrivals (excluding American Samoans) was 22 per cent in 1984, ahead of North America and second only to New Zealand. This dramatic increase in numbers from Australia is thought to result from the availability of multi-destination South Pacific holiday packages marketed by Ansett through its involvement with Polynesian Airlines. Whether this trend will continue cannot be determined at this time.

Hotel accommodation in Western Samoa numbers 323 rooms, 221 of which are in two international class hotels. Most of the accommodation is located in Apia with some rooms on the little developed island of Savai'i. The overall occupancy rate is 60 per cent. There is a fairly high degree of local ownership and control of accommodation facilities with only one small hotel being wholly foreign owned. Construction by foreign interests of the 287-room Royal Samoan Hotel, possibly under Ansett and Polynesian Airlines management, is due to begin in early 1986. The average length of stay of between three and four days is very low compared to other South Pacific holiday destinations. Since the economic impact of tourism is related more to the number of room-nights than to total visitor numbers this low average length

of stay restricts the potential benefit of tourism to the Western Samoan economy.

Air access to Western Samoa is very poor with no direct flights from any of the major market areas.

In March 1984, United Nations Development Program (UNDP) published a Tourism Master Plan for Western Samoa 1984-1993, which recommended that the government give higher priority to the tourism industry and allocate development funds and incentives accordingly (UNDP 1984a). Assuming improved air access, upgrading of runway and terminal facilities at Faleolo Airport, increased promotional expenditure on tourism, and the construction of a total of 930 additional hotel rooms, it is estimated that visitor numbers could be increased to 52,000 in 1988 and 115,000 by 1993, representing an annual growth rate of 10-20 per cent during the 10-year period.

Vanuatu. In 1984, visitor arrivals by air totalled 31,615 while another 64,000 were cruise ship passengers. While visitor numbers increased by 85 per cent from 1974 to 1984 the growth rate per annum has been rather erratic. After steady growth from 1975 to 1979, numbers fell significantly in 1980 and 1981 owing to political disturbances. Following a substantial increase in 1982, numbers have levelled off, but the annual average growth rate since 1974 is still a healthy 7.9 per cent.

During the period 1978-84 an average 56 per cent of all visitors were from Australia, 14 per cent from New Caledonia, 10 per cent from Japan, 9 per cent from New Zealand, 3 per cent from Europe, and 2 per cent from North America. While the proportion of visitors from Australia has been increasing during this period (contributing 72.7 per cent of all visitors in 1984) the contribution from New Caledonia, New Zealand and Japan has been declining. It is likely that part of this reduction is caused by poor air connections through to Port Vila (PATA 1985a). The government is presently pursuing a policy of market diversification through promotion in North America, Japan and Europe. Given its proximity to Vanuatu and the regional pattern of air services and fare structures, the dominance of Australia in Vanuatu's tourist profile is unlikely to change in the foreseeable future.

At the end of March 1984 there were 438 rooms available, over half of which were in two international resorts in Port Vila. The room occupancy rate of these two resorts is 90 per cent, and average length of stay is 10 days.

There is general agreement that the further growth of tourism in Vanuatu is limited by the availability of accommodation and limited air access from market areas other than Australia. The government's view is that Port Vila can support two additional

international standard hotels with a combined room capacity of about 500 and another 150-250 rooms in small developments throughout Lefate. This would bring accommodation capacity on Lefate up to around 1100-1300 rooms, a figure which the government regards as the optimal level. As of September 1984, there were eleven projects under consideration, all at various stages of implementation. These range from international tourist resorts to be financed by overseas interests to small outer island bungalow projects financed locally. The total number of rooms proposed is 1046, to be completed by 1995. Assuming existing bed and room occupancy rates this capacity could accommodate between 50,000 and 60,000 visitors annually. To attain this level of tourism by 1995 would require an annual average increase approaching 6 per cent. While it is true that limited accommodation capacity can restrict visitor numbers, other issues need to be addressed. In their study of the tourism industry in Vanuatu, PATA emphasized both the need to increase direct air access from major market areas, especially New Zealand, as well as the inadequate funding of the National Tourism Office particularly for promotional activities and advertising (PATA 1985a). The fact that tourism to Vanuatu has traditionally been promoted together with tourism to New Caledonia needs to be reconsidered in the light of current political disturbances in the latter country and its adverse impact on visitor numbers. If these sorts of issues are addressed, achieving a 6 per cent rate of growth seems feasible.

Tonga. Visitor arrivals by air in 1984 totalled 13,713, while the number of cruise ship passengers was around 43,000. Visitor numbers have shown a modest rate of growth from a low base in the 1960s. The number of visitors doubled between 1975 and 1984. Falling visitor numbers in 1982 and 1984 probably reflect the declining value of the New Zealand dollar.

During 1983 and 1984 an average of 24 per cent of all tourists were from New Zealand, 20 per cent from Australia, 19 per cent from North America, 9 per cent from Europe and 3 per cent from Japan. With fairly even numbers of visitors from New Zealand, Australia and North America and a reasonably high 9 per cent from Europe, Tonga's tourist market seems well diversified.

In 1980 there were 254 rooms, 133 of which were regarded as of moderate standard and 121 of budget standard. The number of moderate standard rooms increased to 174 by 1983, including the upgrading of the International Dateline Hotel.

It should be noted that the actual number of visitors to Tonga is substantially less than the government's forecasts in Kingdom of Tonga Fourth Development Plan (1980-1985). The projected rates of increase in visitor numbers of 3 per cent, 8 per cent, 8 per cent, 10 per cent and 12 per cent for the period 1980-85 overestimated actual numbers by about 15 per cent overall. Policy initiatives premised on these exaggerated predictions such

as the proposed government funded hotel/convention centre may need to be reconsidered.

The main constraints on tourist development in Tonga are considered to be the lack of an internationally competitive tourism infrastructure, severely restricted Sunday operations and trading, and limited and expensive air services from the major markets. With regard to the latter it is unlikely that in the foreseeable future Tonga will differ from its present status as an 'add on' destination in holiday packages to the region. The number of tour packages from major market areas has grown, and with the Ansett-Polynesian Airways management agreement this trend may be expected to continue.

Solomon Islands. In 1984, visitor arrivals by air totalled 10,700 while around 8000 persons were passengers on cruise ships visiting Solomon Islands. A very high proportion of air arrivals (30-40 per cent) are non-tourists (e.g. businessmen and government officials). Solomon Islands are presently the least frequented of the five tourist destinations in this study. While the average growth rate between 1971 and 1983 was 10 per cent per annum, visitor numbers in the 1980s have been fairly constant, possibly reflecting lack of high standard accommodation and other tourism facilities, and little promotional activity since no international hotel chain has accommodation facilities in Solomon Islands.

From 1979 to 1983 37 per cent of visitors on average were from Australia, 18 per cent from Papua New Guinea, 9 per cent from New Zealand, 8 per cent from Europe, 6 per cent from North America, and 5 per cent from Japan. Air access, with direct flights from the two major markets, Australia and Papua New Guinea, is adequate given the current level of tourism development.

Total tourist accommodation numbered 292 rooms in hotels, resorts, guest houses and lodge accommodation in 1983. Room occupancy rates average 60 per cent. The large proportion of business travellers is reflected in the very high average length of stay (11-12 days).

Given certain assumptions regarding improvement of the international airport and of air access, improvement and expansion of accommodation and other tourist facilities and services, and increased promotional activity in the market countries, an annual growth rate of 15 per cent is projected until 1990, falling to about 10 per cent per annum thereafter (UNDP 1984b). This would yield about 30,000 air arrivals by 1990, approximately three times the present level. Accommodation would need to be expanded by about 400 rooms (a 137 per cent increase) to meet this number of tourists. Leaving aside the opportunity cost of diverting the necessary resources away from other sectors, the projected rates

of growth seem unduly optimistic however, ignoring such factors as the competitiveness of alternative holiday destinations and the reputation of Solomon Islands as a high risk malarial area.

Effects on foreign exchange earnings, GDP and employment. Table 8.3 sets out data on gross tourist receipts for each country for the period 1975-84, together with some estimates relating to the economic impact of tourist expenditure.

Table 8.3 Gross tourist receipts, 1975-84

	Fiji[a] (F$ m)	Western Samoa[b] (tala m)	Vanuatu[c] (US$m)	Tonga[d] (T$ m)	Solomon Islands[e] (SI$ m)
1975	66.7	1.7	..	1.7	..
1976	76.0	1.9	..	2.2	..
1977	80.0	2.5	..	3.3	..
1978	98.0	2.8	..	3.9	..
1979	105.0	2.9	..	4.0	2.05
1980	108.0	3.6	6.7	6.0	3.24
1981	122.0	3.2	..	..	..
1982	142.0	3.7	..	..	..
1983	135.0	4.8	..	..	..
1984	161.0	8.5	20.0	..	6.76
Gross tourist receipts as % of all exports	35%	16-25%	27.0%	68%	4-5%
Gross tourist receipts as % of GDP	16-22%	3-4%	10.5%	13.5%	3-4%

Sources: [a]Britton (1983: Table 6.1); Fiji (1980, 1983, 1984).
[b]UNDP (1984a: ch.13, Tables 8, 11); Western Samoa (1984c).
[c]Vanuatu (1981:195); PATA (1985a estimate: 19).
[d]Tonga (1981:55, 253).
[e]Abeysinghe (1983:11); PATA (1985b:45).

In the case of Fiji the expenditure of tourists is far greater than for all the other four countries combined. Except for 1983, the year of the cyclones, gross tourist expenditure has been steadily increasing. As a percentage of all exports, tourism accounts for approximately one-third of Fiji's export receipts.

In 1984 gross tourist expenditure of $161 million was significantly higher than the $110 million from sugar exports, traditionally Fiji's major source of foreign currency earnings. A large part of Fiji's trade deficit is met from tourism earnings which have in turn reduced the instability in export income. In Western Samoa tourist earnings also contribute significantly to export receipts. Depending on the prices of the principal export commodities (copra and cocoa), tourist receipts between 1978 and 1982 ranged from 16.2 per cent to 25.5 per cent of all export earnings. For Vanuatu tourism is now the second most important source of foreign exchange earnings (after copra). In 1980 estimated tourism earnings of US$6.7 million was approximately 27 per cent of total export receipts of VT2449 million. In the case of Tonga, tourism receipts as a percentage of export receipts amounted, on average, to 58.9 per cent between 1970/71 and 1974/75 and 68.4 per cent between 1975/76 and 1979/80. Tourism is easily Tonga's most important export commodity. Foreign currency earnings from tourism assume an added importance given Tonga's increasing reliance on sources of foreign exchange (e.g. foreign aid, unrequited remittances and capital inflow) not under its direct control. Gross foreign exchange receipts from tourism in Solomon Islands represent approximately 4-5 per cent of total export earnings. As an earner of foreign exchange the tourist industry is relatively insignificant in Solomon Islands at present.

The net effect of tourism earnings on the balance of payments requires information regarding both the direct and indirect foreign exchange costs of the goods and services purchased by tourists. The proportion of tourist expenditure which flows out overseas may be expected to be high given the elementary nature of secondary industry and the difficulties which the agricultural sector has in supplying products of the requisite quality. Typically, those major local suppliers who are able to provide products of the required quality are foreign owned and/or use a large proportion of imported materials. Some recent estimates of the import content of tourist services in Western Samoa are: hotel/other - food consumption 65-75 per cent, beverages 50 per cent; hotel costs - construction materials 75-85 per cent, equipment in excess of 90 per cent, operational requirements 50-60 per cent, electric power costs 50 per cent; transportation - ground equipment, fuel, parts, and aircraft equipment parts all 100 per cent (UNDP 1984a). The import content of tourist related goods and services in Vanuatu, Tonga, and Solomon Islands is unlikely to be any less than these figures. Even in the case of Fiji, with its much more diverse manufacturing base, the most recent estimate is that leakages constitute 75 per cent of gross tourist expenditure (Fiji 1983:25).

With respect to the contribution which tourism makes to GDP again we face problems of limited data. Earlier studies for Fiji

estimated tourism's contribution to domestic value added as 8.25 per cent of GDP factor cost (f.c.) (Dommen 1973:28) and 11.6 per cent of GDP f.c. (Varley 1978-34). Using Varley's multiplier estimates, Britton (1983:163) computed tourism's contributions in 1978 as 13.5 per cent of GDP market prices (m.p.) (including the impact of tourism related investment expenditure). According to a recent Central Planning Office estimate, tourist spending of $122 million in 1981 generated $150.1 million of value added or 15.1 per cent of GDP f.c. (Fiji 1983:20). However, this figure should be treated with some scepticism. The estimated tourist multiplier of 1.23 is much higher than other published estimates (cf. Varley 1978) and more information is needed on the method of calculating the results, especially the assumed leakages of income from the Fijian economy. But whatever the precise figure the contribution of tourism to the Fijian economy is a significant one.

In the case of the other four countries, data limitations permit only a comparison of estimated gross tourism earnings as a percentage of GDP (as opposed to tourism's contribution to value added). In the case of Western Samoa gross tourism earnings are a fairly small percentage of GDP - from an estimated 3.7 per cent of GDP in 1975, to 4.4 per cent in 1978, falling to 3.5 per cent in 1983 (UNDP 1984a:123). For Vanuatu, although there are currently no official figures for GDP, estimated GDP for 1980 was VT6400 (Vanuatu 1981:6). Accepting the estimate of tourist expenditure of VT670 million, gross tourist expenditure as a percentage of GDP comes to 10.5 per cent. For Tonga, in 1981 gross tourist expenditure was 13.5 per cent of GDP m.p. while for Solomon Islands the percentage is in the neighbourhood of 3-4 per cent (author's estimate on available data). Although one would need to know the precise volume of leakages overseas to assess tourism's contributions to value added, these figures provide some idea of the economic significance of the tourist industry in each country. When compared with Fiji's figure of gross tourism earnings as a percentage of GDP (approximately 20 per cent) we gain some impression of the relative importance of tourism to the economies of Vanuatu and Tonga and its relatively minor importance in Western Samoa and Solomon Islands.

The contribution which tourism makes to employment in each country is set out in Table 8.4. For Fiji in 1971 an estimated 7000 direct and indirect jobs were created by tourism, 9.4 per cent of those in paid employment (Dommen 1973:28). In 1975 direct and indirect employment generated by tourism was estimated at 10,500 jobs or 14.3 per cent of total paid employment (Varley 1978:37). Estimates for 1977 put the employment generated at 10,033 or 13.9 per cent of total paid employment. Of this total, 66 per cent were in tourist industry occupations (accommodation, travel and tours, tourist shopping, handicrafts and entertainment), while 34 per cent were indirectly employed in tourism (e.g. agriculture and food processing, private services, manufacturing, utilities, construction, banking, transport, communication, and government and airport employees (Britton

1983:173)). The most recent estimate of tourism-generated employment is that in 1981 the tourist industry provided 22,042 jobs or 27 per cent of total paid employment. Again scepticism is called for. Curiously, estimated tourism-generated employment in agriculture, forestry and fishing is almost double that generated in the hotel industry (Central Planning Office estimates published in Fiji 1983:21). Unfortunately these figures are already being quoted as evidence of the benefits of tourism to the Fijian economy.

Table 8.4 Employment created by tourism, 1971-81

Country	Year	Tourism's estimated contribution to employment (direct and indirect)	Tourism generated employment as a % of total paid employment
Fiji	1971	7,000	9.4
	1975	10,500	14.3
	1977	10,033	..
	1981	22,042	27.0
Western Samoa	1979	807	2.7
	1983	644	..
	1984	800	..
Vanuatu	1984	1,000	20.0
Tonga	1980	400	2.0
Solomon Islands	1981	300	1.0

Sources: As for Table 8.3.

In the case of Western Samoa, the estimated contribution of the tourist industry to employment was less in 1983 than in 1979 due to a combination of the worldwide recession and some internal economic disruptions which caused the hotels and airlines to reduce staff levels. Report to Cabinet, 1984 Tourism Review (Western Samoa 1984c) states that direct employment in the tourist industry was 700 in 1984 and indirect employment numbered 100. No details were provided as to how these figures were derived.

Comprising only 2.7 per cent of total paid labour (UNDP 1984a:134), and only slightly greater if the estimates for 1984 are accurate, the tourist industry cannot be regarded as a significant employer of labour at the present time.

Tourism's contribution to employment in Vanuatu is estimated at 20 per cent of the formal wage employment sector (Vanuatu 1985:157), a greater proportion than in any of the other countries surveyed. The tourist industry is Vanuatu's largest employer of paid labour.

Direct employment in hotels in Solomon Islands is estimated to be no more than 200 with indirect employment another 100. These 300 tourist-related jobs represent only 1 per cent of total paid employment in Solomon Islands (Abeysinghe 1983:11), proportionately far less than in any of the other countries surveyed.

At this time only Fiji and Vanuatu appear to have a significant amount of tourist-generated employment, but with the rate of unemployment in all five countries running at high levels, tourism is considered to have a great potential to increase the number of workplaces in each economy. While tourism development can help to reduce unemployment rates in the future, some doubts can be raised about its employment creating potential. On Varley's estimates for Fiji, with a multiplier of 0.34 (0.34 percentage increase in labour demand for every 1.0 percentage increase in expenditure), the employment generating potential of tourism is less than that of all primary and secondary industry and less than the average of other tertiary sectors (Varley 1978: Tables 2.6, 2.7). While the Fiji Government, like the other governments, is committed to expanding off-farm employment opportunities it seems that, compared to other sectors, tourism does not create a significant demand for labour. The extent to which Varley's results are able to be generalized to the other countries is not known. Nor is it known for any of the countries just what are the opportunity costs of expanding tourist industry employment, especially when manpower is diverted from agriculture. Questions have also been raised regarding the opportunities in the tourist industry for acquiring productivity enhancing skills. Clearly more research is needed in all these areas.

Estimates of tourism-generated employment in each country cannot be adequately considered in isolation from the question of the opportunity costs of expanding employment in the tertiary sector, especially when manpower is diverted from the primary and secondary sectors of the economy. In Fiji, for example, concern has been expressed with respect to the cost of diverting manpower to the tourist industry from the agricultural sector (Ganilau 1974:67-8). This may well conflict with rural development objectives, especially if the individuals who divert are the more enterprising and able members of the rural population. While

there is some evidence that the cost of providing each tourism job tends to be very high, especially compared to agriculture (UNDP 1984a), there does not seem to have been any significant diversion of manpower where studies have been carried out in the South Pacific (cf. Varley 1978:38-40; Britton 1983:172). Nevertheless, policy makers should be ever mindful of the potential costs of diverting labour from agriculture to the formal paid sector.

A further concern arising from the tourist industry's impact of employment is that its relatively heavy demand for semi- and unskilled labour, which may see as a plus for tourism in the South Pacific given the relative abundance of such types of labour, may, in the longer term, be a disadvantage since tourist employment seldom imparts technical skills that can be transferred to other productive sectors of the economy. The skills training function of tourism has been labelled as 'dehumanizing' with the greater number of workers employed in menial tasks (Samy 1975). Offsetting factors include the preservation of traditional handicraft making and entertainment skills, together with a fostering of commercial and entrepreneurial skills (Britton 1983:174). More research is needed on the actual and potential skill training function of tourism and its longer term implications for the productivity of those in formal sector employment.

Enhancing the economic impact

While tourism does contribute to foreign exchange earnings, diversification of the export base, national income and employment in each country, there are constraints which limit its potential economic significance. Enhancing the economic impact of tourism requires a three-stage process. First, the countries must keep better tourism statistics. Second, there must be a detailed assessment of the economic impact of tourism based on more reliable information. Third, the results of the economic impact studies must then provide a basis for more informed policy-making aimed at maximizing the net benefits from tourism development.

The need for better statistics. For each of the nations, but especially for Western Samoa, Vanuatu, Tonga and Solomon Islands, there is insufficient information on the leakage and linkage effects of tourism development. Reliable information about the volume and composition of tourist expenditure flows, the import content of the direct, indirect and induced income effects of tourist spending, the strength and direction of linkages between the tourism sector and other sectors in the economy, the distribution of benefits from tourist expenditure, direct and indirect employment generated, etc., is essential for sound policy-making and planning by both governments and private enterprise.

For some time now there has been a concern at the lack of standardization of the approaches to the collection of statistical data by the countries in the South Pacific. It is acknowledged that significant benefits would be derived from a number of common key questions on entry/departure cards and from the systematic and rapid processing of information on the cards (ADAB 1985:31). In the absence of a comprehensive system of national accounts including input-output tables, the sort of information needed to accurately assess the economic impact of tourism on these countries is not simply to be obtained from improved statistics on visitor arrival by source and type. The information must also be obtained from: tourist expenditure surveys; surveys of tourist enterprises and tourist industry suppliers to assess inter-industry linkages and demand for imports; expenditure surveys of local households, partly to help determine multiplier effects and identify the proportion of income spent on imported products; reliable hotel statistics conveying information on room/bed capacity, occupancy rates, tariff rates, monthly gross turnover from accommodation, food and beverage sales; number of full-time and part-time employees, etc. The acquisition of such knowledge may also require modification of the accounting system used by local banks in order that tourist-related transactions be more easily identified, together with government accounting of all expenditures and revenues which are tourism related. Such information can be expanded into a comprehensive travel account where all tourism-related inflows and outflows are monitored (UNDP 1984a:146). Until these sorts of statistics exist, no reliable estimates can be made as to tourism's net contribution to GDP, let alone the optimal allocation of resources between tourism and other sectors.

One crucially important area in which information is lacking concerns the differential impact of the expenditure by different types of tourists. For planning purposes it is necessary for governments to decide whether to cater primarily for 'mass market' tourism in budget standard accommodation or for 'up market' tourism in first class hotels and resorts. While the socio-cultural effects of each type of tourism may be expected to be different, so too will the economic effects. Although 'up market' tourists spend more per day, the import content of their expenditure will be higher. Despite the higher direct and indirect leakages from their expenditure, the absolute amount of income remaining in the country may well be greater. Furthermore, there is likely to be more employment created per visitor since high spending visitors stay in accommodation with a higher staff/bed or staff/room ratio. It has been suggested that the secret to success in Pacific islands tourism lies in small exclusive resorts of the Toberua, Fiji or Vavau, Tonga style (Kennedy 1984). This may well be correct but more research is needed to determine which form of tourism makes the most significant contribution to foreign exchange, income and employment.

The significance of better statistics also goes beyond the realm of economics. All the countries in this survey are concerned about the possible impact of tourism on the cultural and social aspects of life. To some extent information concerning the economic impact of tourist spending can help to inform in this area. For example, the import content of expenditure by locals working in and outside the tourist industry can help determine the extent of the 'demonstration effect' of tourist spending. Also, knowledge of the differential impact of spending by different types of tourists can help determine the extent to which tourism promotes or reduces inequalities between those living in different regions and also between members of different ethnic groups. While no substitute for intensive sociological research, certain sorts of information pertinent to economic impact will be of use in assessing the overall impact of tourism development on a country.

While some countries are presently taking steps to acquire more data on the economic impact of tourism (e.g. Vanuatu 1984a:164), of more general interest is the fact that the European Community (EC) in its forthcoming 3.2 million ECU (European Currency Unit) Pacific Regional Tourism Development Programme will establish a modern research information and data base system. Such a data base, operated through the Tourism Council of the South Pacific (TCSP) and covering all aspects of the tourist industry in each country, is essential for any government serious in its desire to monitor major aspects of development in the tourist industry, let alone formulate sound policy.

Some common problems. Better tourism statistics will enable more precise estimates of the economic impact of tourism on each country and more informed policy-making. Although detailed assessment of the economic impact of tourism may be expected to highlight problems specific to particular countries, the following three issues need to be addressed by each government in the region: strengthening the linkages between tourism and other sectors in the economy; determining the opportunity costs of a developing tourism sector; and exploring the possibilities for regional cooperation.

(i) Improving inter-industry linkages: If a country's tourist industry is to act as a catalyst to overall growth in other sectors, careful attention needs to be paid to how a greater proportion of tourist expenditure and tourist-related investment can be retained domestically. Two issues of particular concern to the governments of the five nations are: the problems of strengthening the links between tourism and agriculture; and the problem of increasing local participation in the management and control of tourism facilities.

While the style of international tourism that is developing in the South Pacific requires inputs which conform to foreign

tastes and meet quality standards, many of which are incapable of supply by local producers, it would seem that in the area of hotel operations at least more effort could be made to strengthen links with small-scale farmers. The problem here generally involves the provision of more organized marketing arrangements and solving the technical problems of supplying commodities at the right price, quantity and quality. One suggestion made for Fiji, but which can be generalized for the other economies, is that imports of certain foodstuffs be regulated and only permitted when contracts with local producers are unable to be fulfilled. Thus, in Varley's view, the National Marketing Authority or some such organization would assume responsibility for supplying quality locally produced foodstuffs (fruit, vegetables, meat, poultry and fish) to hotels on a regular basis at agreed prices with products imported to make up any shortfall (Varley 1978:80). Given the importance which each government attaches to developing the rural sector, this proposal, which could also help to arrest the drift of labour from the land to the towns, should be studied to assess its practicability and possible consequences.

Local entrepreneurs often have poor access to markets, capital and management expertise generally. This situation encourages the need for foreign capital and with it foreign control of tourism facilities. The best opportunities for local participation and control in the tourist industry lie in the provision of medium-standard accommodation and certain tourist-related facilities. Thus, for example, the Government of Vanuatu, recognizing that the requirements of significant and expensive infrastructure investment and the use of skilled manpower will encourage foreign investment towards Efate, Tanna and Santo only, has reserved the remaining islands for ni-Vanuatu projects of a small bungalow scale and then only if requested by the local community. In Fiji's Eighth Development Plan (Fiji 1980) the proposal has been made to develop an integrated network of small, medium and budget standard accommodation facilities located in various parts of the country and outside the major tourist zones. The government can encourage and facilitate the construction of these small lodging facilities through Development Bank assistance to local communities and by providing technical management skills. Villages themselves can manage the installation as a cooperative.

The expected advantages of this sort of scheme are increased control over inputs by ensuring maximum use of local inputs such as building materials and food, thus increasing the domestic value added from tourist expenditure, spreading the income and employment benefits of tourist expenditure outside the tourist zones and, given the type of tourist likely to avail himself of this scheme, minimize any adverse socio-cultural impact of expanding the tourist industry to new areas. While the average spending per day of this sort of tourist is likely to be less than that of holidaymakers in international resorts, the effect of such

expenditure could be significant for local residents. This sort of scheme, encouraging local communities to participate in the decision making, equity investment and management of tourist facilities and services, together with its promise of producing a more equitable distribution of the benefits from tourism, deserves serious consideration from each government. Once again, authorities in each country must determine which proportion of total visitor numbers should be catered for by this sort of accommodation rather than by resort or villa style accommodation. The relative economic impact of spending by different types of tourists will affect this decision.

As long as existing linkages between the tourist industry and other industries remain weak, and possible linkages are unexplored, the economic impact will continue to be limited. In my view the task of assessing extant and possible linkages should be given urgent priority by each of the five nations. Research should be undertaken immediately in this area to ascertain how, in the context of the governments' overall development objectives, various inter-industry linkages can be strengthened and what are the appropriate policies to create and maintain them. It is hoped that the forthcoming EC project, which will include a linkages survey and pilot projects on linkages between tourism inputs and indigenous development schemes, will provide information on these matters adequate for formulating sound policy initiatives.

(ii) Determining the opportunity costs of a developing tourism sector: It has been mentioned that a developing tourist industry may divert resources away from primary and secondary industry and that any costs of doing so would need to be taken into account in any comprehensive assessment of the tourist industries' economic impact on a country. Often neglected by policy makers, however, is the question of the opportunity costs of the government allocating scarce public funds to the tourism sector.

Government revenue from tourism, raised by way of hotel and departure taxes, import duties, company tax, income tax, utility charges, airport landing fees, property taxes, land rentals, wharf berthage fees, etc., can be an important source of development finance. Each of the five countries' governments are incurring considerable expense for the administration of tourism, the provision of tourism incentives, the installation and maintenance of infrastructure, together with the expansion of public services such as police, medical services, fire protection, etc., in line with tourism development. While local residents can certainly benefit from such expenditure the question arises as to whether there exists a bias toward tourist-related facilities to the neglect of the more pressing needs of residents. On one estimate relating to Fiji for 1981, 85.8 per cent of government revenue from tourist-related sources was required to service the tourist industry (Britton 1983:179). Since this figure excludes capital

expenditure by government in providing infrastructure necessitated by an expanding tourist industry, the outcome is apparently a public subsidy of the tourist sector. The other nations in this survey are presently allocating scarce public funds in areas such as airport and road upgrading, expansion of tourist accommodation, providing hotel investment incentives, tourism promotion, etc. It is not unlikely that subsidization of the tourist sector exists here also.

While a government deficit with respect to tourism-related revenues and expenditures can be justified in terms of tourism's overall economic impact, equally, such a situation can constitute a distortion in the distribution of public funds. Criticisms have been raised at times over the level of hotel incentives. In Western Samoa, Parliament's authorization of a package of concessions to the owners of the Royal Samoan Hotel has been labelled as a 30-year tax holiday which could cost the government as much as $100m in lost revenue (Islands Business, January 1985). Criticisms have often been made concerning the provisions in Fiji's Hotel Aids Ordinance Act and expenditure on infrastructure (as in the case of the Nadi-Suva Highway which is considered by some to provide the bulk of its benefits to private tourism companies (Britton 1983:179)). By and large, however, very little attention has been directed to the question of whether or not, with respect to tourist-related areas, individual governments are spending public funds efficiently. It seems that tourism's supposed contribution to national development has been regarded as justification enough. In Western Samoa, Vanuatu, Tonga and Solomon Islands especially, where each government is prepareed to play an important role in developing the tourist industry, much more research needs to be done regarding the optimal balance between tourism-related government revenue and government expenditure, the appropriate mix and levels of revenue raising taxes, and the sorts of tourist-related projects and activities which should receive public funds and the extent of such funding. Ideas for more involvement from the private sector also need to be explored (see PATA 1985a:3-6).

(iii) Exploring the possibilities for regional cooperation: There is a growing recognition on the part of South Pacific economies for the need to identify and promote areas for cooperation in various parts of the tourism industry. To this end the five nations in this survey, together with Papua New Guinea, Kiribati, and Tuvalu, have recently set up the TCSP to provide a more coordinated approach to tourism development in this region.

One area where regional cooperation could be extremely beneficial might broadly be called 'education and development of human resources and tourism institutions'. Issues of common concern that could be addressed include programs to raise the level of public awareness as to the nature of tourism and its significance in the economic development of the country, programs

to preserve various aspects of each nation's cultural, historical and environmental heritage and training programs to prepare local residents for future managerial positions in the tourist industry. With respect to the latter, there has been increasing concern by each of the five nations over the lack of facilities for training employees who seek an ongoing involvement in the tourist industry. The present situation has been described as ad hoc , uncoordinated and unrelated to any systematic training plan for the industry (ADAB 1985:35). Since attention to this broad area can result in a stronger tourism industry both for individual countries and for the region, a cooperative effort is called for. It is anticipated that some useful recommendations as to how the TCSP can implement these sorts of programs will emerge from the forthcoming EC project where such issues will be specifically addressed.

A second area where regional cooperation is called for is that of market promotion with particular attention to improving air access to each country.

It is likely that each country can attract more tourists if it attempts to do so in concert with the others. As noted above, visitor projections for individual countries have tended to be optimistic, to say the least (for Western Samoa see UNDP 1984a; for Tonga see Tonga 1981; for Solomon Islands see UNDP 1984b). Possibly this is due to the neglect of the potential reactions of other countries in response to a particular country's increased promotional efforts. Inflated visitor projections can lead to investments which result in excess capacity in the tourism industry with a consequent waste of scarce resources. Regional cooperation can lead to more realistic visitor projections for each country, thus enabling better planning and more efficient development of tourist facilities.

There would seem to be a number of advantages flowing from the adoption of a cooperative marketing strategy aimed at promoting the region as a whole by means of multi-destination packages. Most obviously, scarce resources can be used much more efficiently to promote a regional product, rather than the current situation where individual countries attempt to differentiate their product from that of the others. This should be of particular help to those countries, e.g. Solomon Islands, not well known as tourist destinations. While competitive advertising often results in a zero-sum game, it is likely that the promotion of a regional product could generate increased visitor numbers to the region as a whole and the individual countries within. A regional product can be especially attractive to the long distance markets, for example North America, Europe and possibly Japan where holidays in more than one country might well be regarded as justifying the high costs of travelling to the South Pacific. It should also reduce the dependence of Pacific island tourism on Australia and New Zealand. The more diverse are the tourist

markets the less will be the impact of adverse economic or other circumstances in any particular visitor-generating country.

Some steps toward multi-destination holiday packages are currently being taken by Ansett through its involvement with Air Vanuatu and Polynesian Airlines. While tourists can, to some extent, plan their own itineraries, there are still problems with restricted access to some countries, infrequent flight schedules and expensive fare structures (King 1984). Perhaps over time this sort of multi-destination holiday packaging will result in a better coordination of airline routes and schedules. With Qantas offering a greater commitment to tourism in Fiji and Ansett's vested interest in increasing the number of tourists to Vanuatu, Western Samoa and Tonga as well as Fiji, some rationalization of airline use and schedules in the area might result. This in itself will generate more visitors to the region. The TCSP should play a role in promoting this much-needed rationalization of airline policy.

It has been recognized that marketing and promotional activity aimed at raising the general awareness of potential visitors is vital to the future development of tourism in the South Pacific. The need for regional cooperation is evident. Under the EC-sponsored project TCSP will set up a joint marketing strategy for the area and recommendations will be made towards improved air access to the countries in the region. Greater cooperation and coordination between the South Pacific nations on these matters can be expected to promote overall regional development.

Conclusion

While tourism is apparently a major contributor to the economies of Fiji and Vanuatu its importance for Western Samoa, Tonga and the Solomon Islands lies more in the future. However, in the absence of more comprehensive data, the impact of tourism on individual economies must remain uncertain. In all these countries tourism has the potential to contribute more to foreign exchange earnings and GNP if the volume of leakages overseas can be reduced. In the interim, benefits include a more diversified export base, increased employment, greater government revenues and a high potential tax base, improved infrastructure and other public facilities and improvement in the quantity and quality of tertiary services.

Certain problems, such as the need for better tourism statistics, are common to the five countries. When more reliable data are available regarding the economic impact of tourism, some important decisions can be made.

One decision involves the type of tourist to be encouraged. While the provisions of budget accommodation can lead to increased local equity in the tourist industry, it is likely that less gross tourist revenue will result, thereby diminishing the overall economic impact of tourist expenditure. What is needed in each country is the formulation of a tourism development policy, that is a statement of the general type and extent of tourism which is considered appropriate. This should provide the basis for a development strategy and for evaluating specific development proposals. Of course, until we know more about the economic impact of tourism on each nation, we cannot determine a country's optimal tourism development strategy.

Another decision involves strengthening the linkages between tourism and primary and secondary industry. While resort style tourism, which many recommend as the most appropriate for the Pacific islands, may be expected to have a high import content, there should be a continual exploration of ways and means to increase the use of locally produced goods and services as inputs into the final tourism products. Especially important here are the links between tourism and locally produced foodstuffs and the problem of increasing local participation in the management and control of tourist facilities.

Furthermore, attempts can be made to increase the gross expenditure by tourists, either by presenting more opportunities for them to spend their money or by increasing visitor numbers. However large the import leakages are at any given time, increased gross revenue from tourism will benefit foreign exchange earnings, income and employment. In this connection greater effort should be made to foster regional cooperation between the Pacific islands in such matters as marketing strategy and improving air access. If regional cooperation were to eventuate, it is likely to provide a more solid foundation for the preparation of tourism development plans by the individual nations.

While some suggestions have been made as to how, in general, the economic benefits of tourism to the Pacific islands can be enhanced, it is at present impossible to address adequately the problems specific to individual countries, and, until this has been done, no optimal tourism development strategy for the region can be formulated. We are led, once again, to plead for more reliable information on the economic impact of tourism in each country as a necessary basis for initiating appropriate policy.

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