Pacific Policy Paper

Remittances and their Impact

A study of Tonga and Western Samoa

National Centre for Development Studies
The Australian National University

Dennis A. Ahlburg

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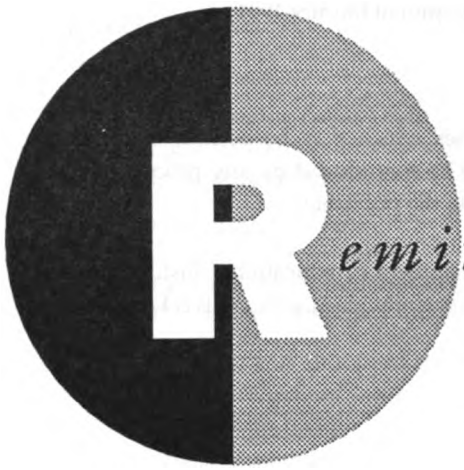

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.. not available
- zero
. insignificant

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CHAPTER 1

Overview

Over the last 15–20 years Tonga and Western Samoa have come to rely on migration and remittances (labour export) to maintain external economic balance and low population growth. Recently Australia, New Zealand and the United States, the most important countries for migration from Tonga and Western Samoa, have initiated points based immigration schemes which may limit access of Pacific islanders. The possibility that migration levels may decline raises serious issues for labour export dependent countries like Tonga and Western Samoa. It is the aim of this study to assist policy makers and planners to assess the impact and maximize the benefits of migration and remittances.

The changing pattern of migration

Since 1970 there has been significant out-migration from Tonga and Western Samoa. Until recently it was believed that migration benefited the home country and promoted development by improving the quality of the labour force. This assessment was based on the view that migration was largely circular. That is, young, primarily male workers went overseas, possibly acquired skills or education, and then returned home. During their absence these young migrants sent money (remittances) home. Migration was seen as having positive effects on development, at least in the long run.

This view of migration is now being challenged. For migration to have beneficial effects on the quality of the home country's labour force, certain assumptions must hold: migrants must return; they must acquire skills overseas; the skills acquired must be relevant to the home economy; and the skills must be used upon return. There is evidence to suggest that the first, and key assumption, may not hold. Migration now seems to be permanent, and return unlikely.

Circular short-term migration usually involved the migration of young single men for work. Connell (1980:44–5), and Connell and McCall (1990:12) report that family migration from the Pacific to Australia is now more common than individual migration. Ahlburg and Levin (1990:30) provide evidence that the same is true of migration to the United States. Of Tongan and Western Samoan

migrants in 1980, with the exception of young Western Samoan men, a majority had married and the sexes were reasonably evenly balanced. Ahlburg and Levin (1990:44) also show that within 10 years of migration 60 per cent of Tongans and 75 per cent of Western Samoans had taken out US citizenship, which indicates a substantial degree of permanence to the migration.

Recent research on Asian contract labour in the Middle East has challenged the assumptions of acquisition and application of relevant skills, even when migrants return. Arnold and Shah (1986) and Smart *et al.* (1986) found that 60–80 per cent of Filipinos, Thais, Pakistanis, Sri Lankans, and Bangladeshis used existing skills and very few acquired supervisory, managerial, or technical training. Upon return many chose self-employment in the service sector, primarily in small shops or transportation. The same pattern has been found in Barbados (Thomas-Hope 1985) and Turkey (Straubhaar 1986). Anecdotal evidence suggests a similar pattern is likely in the Pacific.

Labour export: boon or boom?

Permanent migration can benefit the home country as long as the migrants transmit a sufficiently large flow of remittances. It will be shown in this study that the large migration of Tongans and Western Samoans since 1970 has been accompanied by a correspondingly large inflow of remittances. By 1989 remittances were at least three times as large as total export earnings, making labour the most important export. Tonga and Western Samoa are not alone in being exporters of labour, but they are practically without peer in the relative size and importance of migration and remittance flows to their economies. Remittances have allowed the residents of these two countries to enjoy a higher standard of living than would have been possible in the absence of remittances.

Prospects for self-sustaining economic growth hinge on the economy's ability to transform remittance flows into a stream of productive investments. Otherwise, remittances serve only to maintain the recipients at a standard of living determined by the remitter. Evidence on the use of remittances both in Tonga and Western Samoa and in other labour exporting countries suggests that most remittance money is spent on current consumption rather than channelled into saving and investment. The reasons for the lack of investment are complex but certainly include regulatory rather than supportive government policy and 'booming sector' effects. Large remittance flows, like large financial flows from resource discoveries, can lead to an appreciation of the real exchange rate and an increase in real wages, both of which decrease the competitiveness of exports and import-replacement industries. These adverse effects have occurred in Tonga and Western Samoa and the governments have not chosen to offset them by subsidizing exporters or by devaluation. Also, investment in the private sector has been adversely affected in Tonga and Western Samoa, as in many other countries, by the size

and growth of the public sector, tax and tariff policy, negative real interest rates, and instability in the policy environment. Some analysts argue that dependence on labour export is a viable development strategy for resource poor nations like the Pacific island countries. Others believe that short-term gains will be dwarfed in the long term by the costs of dependency, instability of remittances and the distortionary effects remittances have on development.

Future scenarios and policy options

Many of the adverse effects of migration and remittances would be less important if it were clear that migration and remittances were going to continue into the future at current rates. However, there are several reasons for questioning whether the current rates are sustainable. Migration may decline because of an unwillingness by New Zealand, Australia, and the United States to accept large numbers of Pacific islanders, given the uncertain future economic performance of the host countries and the increasing competition for immigrant places as the world population grows. There is also some uncertainty as to whether current aid donors will continue to finance the health and education expenditures needed to prepare individuals for migration. Past pauses in the flow of new migrants have caused remittance flows to falter, as will the ageing of the current migrants overseas and the increasing prevalence of the migration of entire families.

It is shown below that the continued flow of new migrants is critical to the continued growth of remittances. An original set of projections of future remittance flows indicates little potential for income growth and implies the maintenance of a constant or slowly declining standard of living. The projections also indicate that total remittances should be sufficient to allow Tonga but not Western Samoa to maintain external balance.

Given the high degree of uncertainty over continuation of migration and remittances at adequate levels, what should be done? Neither Tonga nor Western Samoa can ensure the continuation of migration, although they can continue to negotiate with the host countries over access to their labour markets. To date Australia has refused to grant special status to Pacific island immigrants. No country has been very successful in designing specific policies to increase the flow of remittances. It seems that a stable policy environment with monetary and fiscal policies conducive to private sector initiatives may encourage remittances and investment. These policies are discussed below. It would seem that the least costly policy would be one of structural adjustment. Such a policy is likely to attract more remittances and channel a greater proportion into the financial system and investment. In addition, it should improve the way the economies function overall. If remittances were to decrease significantly, such a policy, once successfully implemented, would help avert a financial or balance of payments crisis. The alternative policy, that of continuing to rely heavily on

migration and remittances, and focusing policy on stabilization rather than on attempting structural adjustment, is potentially one of much higher cost.

This study begins in Chapter 2 with a brief discussion of the social context of remittances, and an investigation of the factors responsible for fluctuations and declines in remittance flows.

There is relatively little information on the size and direction of migration and remittance flows in Tonga and Western Samoa. Estimates of these flows are critical to this study and so Chapter 3 deals with the construction and presentation of estimates of migration and remittances. The importance of unrecorded remittances is also discussed and an estimate of their size is presented. Chapter 4 investigates the impact of remittances on the economies of Tonga and Western Samoa. The theory of migration and remittances predicts that the net effect on welfare will be positive. However, there are adverse effects of migration and remittances that can reduce the size of the welfare gain. Some of these—'booming sector' effects, selective loss of the most educated and skilled labour, and rising labour costs—are discussed in Chapter 4. Also discussed are whether remittances are spent on current consumption or invested and the effects of remittances on the distribution of income.

In Chapter 5 a set of original forecasts and future scenarios of migration and remittances is presented. In Chapter 6, a set of policy options facing policy makers in these countries is discussed. Neither Tonga nor Western Samoa has tried to affect the flow of migrants and remittances, however, other labour exporting countries have tried to design policies to influence these flows. These efforts and their failure are also covered in Chapter 6.

CHAPTER 2

Theory of remittances

Why do remittances exist? How are remittance payments enforced? What sort of relationship between family members is expressed? The answers to these questions will help us answer another question that is central to the concerns of policy makers in remittance dependent countries: will remittance flows continue?

Altruism or investment?

Remittances may be pure altruism on the part of the migrant or part of a contractual arrangement between the migrant and his or her family. It is important to determine whether remittances are repayment for past investment or are based on altruism because the motivation will influence their expected longevity. If remittances are motivated purely by altruism then we would expect them to persist over the lifetime of the individual or family towards whom the altruistic feelings are directed and to have a great deal of permanence. If, however, they are predominantly a repayment of past investment in the individual we would expect them to decline and eventually cease once the investment is paid off. Evidence suggests that the investment motive dominates the altruism motive.

Curzon (1979) described remittances as part of a wide 'system of interaction involving obligation and reciprocity'. Stark and Katz (1985) have sketched an outline of a risk/insurance contractual model that accords well with anthropological, demographic and economic

The question of whether remittances are motivated by investment or altruism also affects their tax treatment. If remittances are motivated by altruism then they should be taxed in the same way as other forms of personal income. However if the family really is behaving like a corporation and remittances are a return on investments in (human) capital, an argument can be made that they should be treated in the same way as corporate profits and taxed accordingly. That is, only the profit component of remittances should be taxed, not the total amount, and the appropriate tax rate is the rate of corporate tax. In Tonga, individual tax rates were lowered to 10 per cent and the corporate rates to 20-25 per cent (Browne 1989:141). In Western Samoa the personal rate was 45 per cent and the corporate rate 39-48 per cent (World Bank 1990:224). Taxing remittances as corporate income in Western Samoa would probably reduce tax revenue whereas the effect is unclear in Tonga.

writing on the Pacific. According to Stark and Katz the contract exists because both parties benefit from its existence. The family invests resources in the health and education of the prospective migrant. When the person migrates the family reduces his/her risk level by guaranteeing a minimum level of income until he/she gets established. Later on the migrant pays a premium to the family for this insurance. This explains why remittance flows are bi-directional (see Appendix 2 for evidence of this in American Samoa).

Observations made on the reasons for remittances in the Pacific support a contractual model: 'they are repaying...the money spent and alternative benefits forgone when they went to school. Thus remittances are part of a lifetime exchange relationship between parents and children' (Morauta 1979:6); 'parents and older siblings stake their claim on the responsibility they shouldered in rearing a future migrant to adulthood' (Boyd 1990:102); remittances are 'repayment of social debt and are insurance premiums' (Rempel and Lobdell 1978).

The 'transnational corporation of kin' theory discussed by Bertram (1986) and Bedford (1988) includes investment in children, migration, and remittances as features of a conscious 'family firm' strategy. This theory adds the flow of traded goods within the family to the flow of family members and cash. The theory does not deny that some altruism or cultural factors may also play a part in the flow of people, cash and goods.

Families also use migration to protect the family against unanticipated declines in income. Rosenzweig and Stark (1989) have shown that farm families in rural India who use migration and marriage to diversify income risk are more efficient producers because they do not have to sell off productive assets in downturns. It appears that Pacific island families follow the same diversification strategy. Since international business cycles are not always strongly synchronized across countries or across sectors, families can further diversify risk with international migration. This may partly explain the increasing migration to the United States and Australia relative to New Zealand.

There is further empirical support for the contract theory of remittances as opposed to altruism as a primary motivation. Lucas and Stark (1985) investigated the determinants of remitting among migrants from Botswana. A theory of pure altruism would predict that the lower the income of the family of origin the more remittances they would receive, holding constant other determinants. Lucas and Stark found that the opposite was true. Remittances are particularly marked from those whose families financed their education, supporting the argument for remittances as repayment for investment in offspring's human capital. An analysis of household surveys carried out in American Samoa in 1985 and 1988 also does not support a theory of remittances based purely on altruism. In neither survey are poorer families or individuals more likely to receive remittances. In both surveys older householders were more likely to receive remittances but female headed households and those with more dependents were no more likely to receive remittances than others (see Appendix 2). Preliminary analysis of data from a 1984 survey in Tonga showed that higher household income was associated with a lower probability of receiving remittances but with a larger amount of remittances received (see Appendix 1).

The view that remittances are motivated by contractual obligation rather than altruism raises the question of enforcement. Remittance contracts face problems such as moral hazard and the threat of reneging. However, factors such as: the possibility that the migrant may require future insurance against income loss from unemployment; maintenance of the right to inheritance; identification, allegiance and social connectedness with family and culture of origin; and altruism tend to promote compliance.

The importance in the Pacific of sanctions that prevent reneging on the contract has been stressed by Zimmer (1985) and Turner (1984) for Papua New Guinea; Curson (1979) and Loomis (1990) for the Cook Islands; Haberkorn (1989) for Vanuatu; Tongamoa (1987) for Tonga; and Macpherson (1985) and Fairbairn-Dunlop (1990) for Western Samoa. Families may impose social isolation on those reneging on obligations to remit, and deny access to marriage markets and traditional goods and trade opportunities. However, several of these writers have speculated that integration into the host society may lead to default on exchange relationships and the decline in potency of enforcement mechanisms.

Do remittances decline over time and generations?

If remittances among first generation migrants decline over time as contracts are paid out and integration into the host society increases, then a flow of new migrants is needed just to keep remittances constant, unless the children and grandchildren of the first generation also remit. There is general agreement that remittances do decline the longer the migrant is away (Connell 1981:234). Connell (1980:22) reported that cash remittances from Samoans in Wellington declined after 10 years and remittances of goods much faster. Loomis (1990:67) reported no decline in the percentage of Cook Island remitters in his 1981 survey but there was a decline in the percentage of remitters in his 1985 survey, from 82 per cent for 0–5 years in New Zealand to 56 per cent for 20–25 years. But then he found an increase among those in New Zealand 26–40 years, to 75 per cent. Fuka (1985:52–3) also found non-linearities in remittance behaviour over time among Tongans in New Zealand. Remittances declined after 4 years in New Zealand but rose again after a decade. Those who were remitting after 15 years remitted the most. Tongamoa (1987:101–5) recorded a similar pattern among Tongans in Sydney. Macpherson (1978) found that 80 per cent of newly arrived Samoans in New Zealand reported remittances compared with only 3 per cent of those in New Zealand for 18–19 years.

Remittances among higher-order generations are lower than among first-generation migrants. Loomis (1990:80) found that in 1981 about 60 per cent of Cook Islands-born remit while only 35 per cent of Cook Islanders born in New Zealand remit. In a 1985 survey the corresponding figures were 55-82 per cent and 20 per cent.

An analysis of the 1985 American Samoa labour force survey revealed much lower propensities to remit among Tongans and Western Samoans than in the above studies. Among the first generation, 13 per cent remitted while among second-generation Western Samoans 9 per cent remitted. First-generation Western Samoan migrants also remitted about 50 per cent more money than higher-order generations. Length of time away had little influence on the propensity to remit but did affect the amount remitted. Those who were away less than 2 years or more than 10 years remitted less than other migrants. Remittances are also lower if the migrant is accompanied by a spouse or family, and if the migrant has no assets (land, title) left at home to 'insure' with remittance payments. These effects have also been found in studies of migration in Africa and Asia (Rempel and Lobdell 1978; Knowles and Anker 1981; Banergee 1984; Lucas and Stark 1985).

These time away and generation studies indicate that social and economic ties to home decrease and those to the place of migration increase as time away and generational distance increase.

A multivariate analysis of the 1985 American Samoa labour force survey data found that the propensity to remit was significantly higher the higher a person's income and age, and for married individuals. First-generation Tongan and Western Samoan migrants also had a significantly higher propensity to remit than higher-order generations. Length of time away, whether entered linearly or non-linearly, was not related to the propensity to remit. In regressions for the amount remitted those with more income and higher education remitted more. First-generation Western Samoan migrants remitted about 50 per cent more than higher-order generations and those who had been away for less than 2 years remitted about 50 per cent less than those who had been away longer. There was some evidence of an inverted U shape to the time profile. Such a shape is consistent with the notion of remittances as repayment for investments in one's human capital. The repayment schedule would be expected to follow the time profile of earnings. The results on amount remitted are preliminary, since they have not yet been corrected for sample selection bias.

Conclusion and policy suggestions

It has been shown that remittances decline as economic and social ties to home decrease and as investments are paid back. New trends in migration, that is, the large percentage of Pacific island migrants to the United States taking out citizenship (Ahlburg and Levin 1990) and the migration of complete families from Tonga (see Table 3.2), indicate a decline in migrants' economic and social ties to home. In the absence of new migrants, decline of social and economic ties, time away and generational effects, and the contractual nature of remittances imply a decline in remittance flows to Tonga and Western Samoa. To ensure the continuation of these flows the governments should negotiate with host countries for continued access to their labour markets and should facilitate contact between home and Tongans and Samoans overseas.

CHAPTER 3

Magnitude and source of migration and remittances in Tonga and Western Samoa

In this chapter the available data are examined and original estimates of migration and remittance flows are made. In the first section, official departure and migration data from Tonga and Western Samoa and census data from receiving countries are presented. The problem with this data is that it is dated and incomplete. To provide more reliable information, an original estimate of the number of Tongans and Western Samoans overseas in 1989, including illegals, is constructed. This section concludes with a brief discussion of the factors which influence propensity to remit. It is estimated that the number of migrants roughly approximates the number of actual remitters.

The second section presents data on remittance flows. Official aggregate data and survey data show that Tonga and Western Samoa rely on remittances and that reliance has been increasing steadily over the past 15–20 years. Unrecorded remittances, estimated at approximately 30 per cent of recorded remittances, are also discussed. Unrecorded remittances include hand carried cash, remittances in-kind, money held overseas, and under-reported imports and exports.

The data presented in this chapter show that the number of migrants is the main determinant of the flow of remittance payments. Relying on this conclusion, Chapter 5 will present projections of future migration and remittance flows, which will help policy makers and planners to predict and evaluate the future of reliance on these flows.

Size and destination of migration flows

Western Samoa has a system of departure and arrival cards and Va'a (1990) derived an estimate of net migration from the difference between the two. This

is shown in Table 3.1. Net migration was relatively low until the late 1970s when it jumped to around 5000 a year. In 1981 and 1982 migration was almost zero. This decline has been attributed to adverse economic conditions in New Zealand (Loomis 1990). The outflow of migrants recovered in the mid-1980s and by 1988 returned to approximately 5000 per year. This table assumes offsetting flows of short-term and foreign migrants.

Table 3.1 **Net out-migration from Western Samoa, 1972–88**

	Net out-migration		Net out-migration
1972	1444	1981	-142
1973	3778	1982	-964
1974	4244	1983	2429
1975	3973	1984	4814
1976	1086	1985	3112
1977	1287	1986	3863
1978	3628	1987	3030
1979	5087	1988	5278
1980	5229		

Source: L.F. Va'a, 1990, 'Effects of migration on Western Samoa: an island viewpoint', paper presented at the Conference on International Migration in the Pacific, Sydney, September (unpublished paper).

The majority of all departures were for American Samoa but the majority of permanent departures were for New Zealand. Of all departees who gave a destination other than American Samoa 85 per cent were headed to New Zealand in 1975. This percentage declined to 75 per cent in 1984. Over the same period the percentage going to Australia rose from 2 per cent to 4 per cent and that to the United States rose from 5 per cent to 7 per cent. In 1975, 9 per cent of those departing reported new employment as the reason for their departure. In 1984, 15 per cent reported this as the reason for their departure. These estimates are likely to be seriously biased downwards.

Tonga does not have departure cards so no estimate of migration is available from this source. In its *Fifth Five Year Development Plan* estimates of the net international migration rates by age and sex are reported (Tonga 1987). These rates were applied to the population estimates by age and sex to derive estimates of net migration by age and sex for 1976 and 1986. The estimates are shown in Table 3.2. Approximately 1.3 per cent of the population of Tonga was emigrating each year.

An alternative source of migration data is the receiving countries. The most important countries for migration from Tonga and Western Samoa are New Zealand, the United States, and Australia. Also important for Western Samoa is American Samoa. Table 3.3 shows the number of individuals born in Tonga and Western Samoa who were resident in the major host countries at recent censuses.

Table 3.2 Migration from Tonga by age and sex, 1976 and 1986

Age	Net migration rate per 1000 (1976-86)		Number of migrants			
			1976		1986	
	Male	Female	Male	Female	Male	Female
0-4	-4	-4	26	24	29	27
5-9	-4	-2	30	15	26	12
10-14	-7	-3	48	19	43	17
15-19	-7	-9	38	46	45	53
20-24	-7	-41	27	152	31	178
25-29	-71	-50	190	142	205	155
30-34	-46	-25	105	63	107	67
35-39	-15	-11	34	25	28	25
40-44	-20	-17	40	34	36	34
45-49	-18	-25	31	43	30	47
50-54	-7	-7	10	10	9	12
55-59	-23	-20	27	21	31	28
60+	-	-	-	-	-	-
Total			606	594	620	655

Note: The estimate of 1200 for 1976 seems appropriate and is close to the number of emigrants from Western Samoa for that year. The estimate for 1986 may be low by several hundred since the estimates derived for the 1990s (Table 5.3) are 2000-3000 per year.

Source: Migration rates—Kingdom of Tonga, *Fifth Five-year Development Plan 1986–90*, Central Planning Department, Nuku 'alofa, 1987; migration numbers—author's calculations based on migration rates and population counts.

Table 3.3 Census data on number of Tongans and Western Samoans in the United States, Australia and New Zealand by place of birth

	Year	Tonga	Western Samoa
United States	1980	5,619	12,582
Australia	1986	4,476	2,982
	1981	2,616	<1,000
	1976	893	-
	1971	448	-
New Zealand	1986	7,155	32,523
	1981	5,379	24,525
American Samoa	1980	796	9,686

Sources: D.A. Ahlburg and M.J. Levin, 1990. *The Northeast Passage: A Study of Pacific Islander Migration to American Samoa and the United States*, Pacific Research Monograph No.23, National Centre for Development Studies, Australian National University, Canberra; R. Bedford, 1984. 'The Polynesian connection: migration and social change in New Zealand and the South Pacific', in R. Bedford (ed.), *Essays on Urbanization in Southeast Asia and the Pacific*, University of Canterbury, Christchurch.

This data is not current but new census data will not be available for several years. Another problem with the data is that it does not fully capture the number of individuals illegally resident overseas. Estimates from the US Bureau of the Census suggest that only half to two-thirds of illegals are enumerated in the census (Warren and Passell 1987).

The number of Tongans and Western Samoans overseas in 1989

To derive a more accurate estimate of the number of Tongans and Western Samoans resident overseas in 1989, the flow of legal and illegal migrants was added to the stock of migrants recorded in the most recent census (Table 3.3).

Legal migration to Australia from 1981–82 until 1987–88 is shown in Table 3.4 and to the United States for 1940 to 1989 in Table 3.5. The number of legal entrants to Australia is added to the number of residents shown in Table 3.3 (migration in 1988–89 is assumed equal to that of 1987–88) as is legal migration to the United States.

Table 3.4 **Settler arrivals in Australia from Tonga and Western Samoa, by country of birth, country of last residence and citizenship**

	Country of birth		Country of last residence		Citizenship	
	Tonga	Western Samoa	Tonga	Western Samoa	Tonga	Western Samoa
1981-82	209	89	200	50	190	34
1982-83	139	99	130	44	117	21
1983-84	133	82	111	40	122	17
1984-85	127	217	103	52	109	36
1985-86	160	339	139	91	139	74
1986-87	126	431	121	91	115	74
1987-88	295	465	265	154	264	123
Total	1189	1722	1069	522	1056	379

Source: J. Connell, 1990, *Remittances and rural development: migration, dependency, and inequality in the South Pacific*, Occasional Paper No.22, National Centre for Development Studies, Australian National University, Canberra.

Table 3.5 **Immigrants from Tonga and Western Samoa admitted by the United States and granted permanent resident status, 1940–89**

	Tonga	Western Samoa
1940-49	-	15
1950-59	35	311
1960-69	521	944
1970-79	4647	3436
1980-89	5442	2743

Source: US Immigration and Naturalization Service, 1990 (unpublished).

A few trends in the migrant flows warrant comment. First, Tongan migration increased rapidly in 1987–88. Second, the migration of these groups to the United States is largely a post-1970 phenomenon which has grown, particularly for Tongans. In fact, in the decade to 1989 the number of legal Tongan entrants was almost the same as the number of Tonga-born in the 1980 census.

Third, most Tongans entered Australia directly from Tonga (place of birth figures are close to those by place of residence) and almost all were Tongan citizens. In contrast, Western Samoans increasingly entered Australia from other countries, most likely New Zealand. The data suggest that a majority of Western Samoan migrants to Australia go to New Zealand, get New Zealand citizenship and then migrate to Australia. This accords with Burns and Morton (1988:8) who found that 81 per cent of a sample of Samoan households in Newcastle migrated to Australia from New Zealand.

Obtaining an adjustment for the number of illegal migrants is more difficult. Table 3.6 reports the number of overstayers in Australia and New Zealand.

Table 3.6 **Tongan and Western Samoan overstayers: Australia and New Zealand**

	Tonga	Western Samoa	All countries
Australia			
July 1988	2252	464	70,000
January 1989	2667	684	80,000
July 1989	1977	557	60,000
(Rate)	26.8	14.7	
April 1990	2589	797	90,000
(Rate)	34.8	18.6	
New Zealand			
November 1989	4950	6742	18,767

Source: Australian Bureau of Immigration Research and New Zealand Department of Statistics.

These numbers cannot simply be added to the total of legal migrants. First, some of the illegals will have been counted in the census figures in Table 3.3. Based on estimates derived from the 1980 US census, Warren and Passell (1987) concluded that the census counts between a half and two-thirds of illegals. This judgment accords with Connell (1990:9) who found evidence to suggest a census undercount of Pacific island migrants, especially Tongans. Second, as can be seen from Table 3.7, there are migrants in the United States who have entered without documents as well as overstayers. If the US figures for Tongans and Western Samoans are a guide, then the number of illegals in Australia and New Zealand without documents could be 10 per cent of the number of overstayers. Third, not all overstayers intend to remain permanently; a certain amount of persistence is required to become an official overstayer. It seems that a reasonable approximation to the number of 'permanent' illegals in Australia and New Zealand would be 50 per cent of the overstayers in Table 3.6.

Tongan and Western Samoan illegal immigrants to the United States who have attempted to legalize their residence under the provisions of the Immigration Reform and Control Act of 1986 are shown in Table 3.7. Prior to 1 January 1982, 2006 Tongans and 1094 Western Samoans entered the United States illegally or overstayed their visas. A further 2591 Tongans and 280 Western Samoans applied for residence under the Special Agricultural Worker provisions of the Act. Some of the illegals and overstayers would have been counted in the 1980 census. The rate at which applications for residence are being approved is 95 per cent for the illegals and overstayers and 77 per cent for agricultural workers. Based on these approval rates 3901 Tongans (2045 from 1 December 1989 and the remainder from 1 December 1990) and 1245 Western Samoans (1050 from 1 December 1989 and the remainder from 1 December 1990) will become permanent residents of the United States. Almost all immigrants from Tonga and Western Samoa in 1989 entered under relative preferences—only 6 per cent of Tongans and 2 per cent of Western Samoans entered under the skill category. Bedford (1988:24) and Connell and McCall (1990:9) report a similar pattern for Australia. The relatively large numbers of islanders who showed up in the amnesty and the predominance of young unmarried males (particularly among the agricultural worker group) coupled with the importance of family reunification in the immigration policy, points to the potential for a large increase in the number of Pacific islanders eligible to immigrate as a result. This explains the reluctance of Australian officials to announce an amnesty.

Table 3.7 **Tongans and Western Samoans who have applied for permanent resident status in the US under the Immigration Reform and Control Act of 1986**

	Total	Entered illegally	Overstayed visa	Agricultural workers
Tonga	4597	159	1847	2591
Western Samoa	1374	99	995	280

Source: US Immigration and Naturalization Service, Statistics Division, 27 August 1990.

In the absence of data on legal migrants to New Zealand and American Samoa, it has been assumed that the growth rate of the intercensal period 1981–86 continued for New Zealand and that the annual growth rate for migration to American Samoa was 2 per cent. In 1986 New Zealand's modification of its visa requirements led to an inflow of 4000–5000 Tongans (World Bank 1990, Connell and McCall 1990). A 4000 increase in Tongans in New Zealand has been assumed. Table 3.8 shows all the details of the estimates of the total numbers of island-born migrants living in Australia, New Zealand, the United States and American Samoa in 1989. A summary of the data in Table 3.8 is presented in Table 3.9.

Table 3.8 **Detailed estimates: Tongans and Western Samoans in American Samoa, Australia, New Zealand and the United States, 1989**

	Tonga	Western Samoa
American Samoa		
1980 Census	796	9,686
Plus 2% p.a.	204	1,814
Total	1,000	11,500
Australia		
1986 Census	4,476	2,983
Legal inflow	950	1,766
Illegals	1,250	400
Total	6,676	5,149
New Zealand		
1986 Census	7,155	32,523
Legal inflow	1,417	6,364
1986 visa change	4,000	-
Illegals	2,500	3,400
Total	15,072	42,287
United States		
1980 Census	5,619	12,582
Legal inflow	5,442	2,743
IRCA adjustment	3,522	827
Illegals	2,000	1,200
Total	16,583	17,352

Source: Calculated by the author.

Table 3.9 **Summary: Tongans and Western Samoans in American Samoa, Australia, New Zealand and the United States, 1989 ('000)**

	Tonga	Western Samoa
American Samoa	1.0	11.5
Australia	6.7	5.1
New Zealand	15.1	42.3
United States	16.6	17.3
Total	39.4	76.2

Source: Calculated by author.

Based on these estimates there are currently 39,400 Tonga-born and 76,200 Western Samoa-born individuals resident overseas, this is 40 per cent and 48 per cent of the 1989 home populations respectively. The Tongan estimate is similar to a World Bank estimate of 35,000–45,000 but the estimate for Western Samoans is below the Bank's estimate of 100,000 (World Bank 1990). It is not clear whether the Bank's estimate is just for island-born or for those of island ancestry.

The data show that migration from the islands continued to grow strongly throughout the 1980s. In particular, Tongan migration, both legal and illegal, grew very strongly. Migration has been viewed as a demographic and social safety valve in the Pacific. It seems that this role has been especially marked in the 1980s, with migration being so great that the populations of Tonga and Western Samoa have been constant (World Bank 1990). With such high rates of migration neither country has been forced to pursue a national family planning program nor have geriocratic traditions been forced to change as much as would have been likely in the absence of large-scale migration of the educated and skilled young.

There is an often expressed concern that migration in the Pacific results in a movement away of the young working-age population leaving behind children and the old to be cared for. This complaint ignores the compensating flow of remittances and is not consistent with the demographic data. In Tonga and Western Samoa the dependency rate has been falling since 1966, the beginning of significant out-migration. In 1966, the dependency rate in Tonga was 0.98 and in 1986, 0.81. In Western Samoa the corresponding rates were 1.18 and 0.81.

Propensity to remit

In the context of this study, the reason for estimating the total number of Tongans and Western Samoans living overseas is that it provides the number of total *potential* remitters. However, it is important to note that the estimate of island-born residents abroad is not necessarily equal to the number of *actual* remitters because not all island-born migrants remit and some individuals who are Tongan or Western Samoan by ancestry, but not birth place, remit. The propensity to remit and the amount remitted are associated with age and with the number of years spent away from home.

In the United States and American Samoa in 1980, 75 per cent of Tongan migrants were 15–64 years of age while the corresponding figures for Western Samoans were 80 per cent and 45 per cent (Ahlburg and Levin 1990:12, 49). Assuming these age structures hold for Australia and New Zealand and that only those 15–64 years of age remit, the numbers of potential first generation Tongan and Western Samoan remitters in 1989 were 29,300 and 57,200 respectively. However, these are only potential remitters in the first generation. They ignore remitters among the higher-order generations of migrants.

To derive a more accurate estimate of the number of remitters, an estimate of the probability of remitting for each generation of migrant is needed. Based on the studies of Loomis and those cited by Bedford, and the analysis of the 1985 American

Samoa survey discussed in Chapter 2, a propensity to remit of 0.7 for the first generation and of 0.3 for higher-order generations would seem appropriate.

The next issue is the size of the higher-order generations. This is the very difficult question of defining a Pacific islander. It is assumed that first-generation is defined by island birth, but what of the rest? Is the defining characteristic language, race, or ancestry? Based on the 1980 US census the ratio of all Tongans to Tonga-born was between 0.86 (based on language spoken) and 1.72 (based on race or ancestry). For Western Samoans, whose history of migration to the United States is longer, the ratios were 1.25 and 2.66 respectively (Ahlburg and Levin 1990:2).

If it is assumed that the first generation is 75 per cent adult and has a propensity to remit of 0.7 and that the higher-order generations are 70 per cent adult, are about 2.2 times the size of the first generation, and have a propensity to remit of 0.3, then the number of first generation migrants in Table 3.3 is approximately equal to the number of migrants remitting ($0.75 \times 0.7 + 0.7 \times 0.3 \times 2.2 = 0.99 \approx 1.0$).

Size and sources of remittance flows

Size of the flows

Remittances recorded flowing through official banking channels are shown in Table 3.10. The commercial banks use a ticket or voucher system whereby all transactions in foreign exchange are recorded. Nominal remittances in both countries have grown strongly since 1970, with faster rates of growth earlier in the period. Recent growth rates for Western Samoa are a third of those of the early 1970s and rates of growth in Tonga in the late 1980s were a third of those in the early 1980s. Overall the growth rates of remittances exceed the growth rates of migration in both countries. This implies that factors other than the number of migrants affect the flow of remittances.

In Western Samoa the post office savings bank was historically the conduit for official transfers. It has lost this pre-eminent position. In 1984, 37 per cent of remittances came through the post office. In 1989, only 10 per cent did.

Since it is believed that remittances are sent to improve the lot of those who remain behind in the home country, it is real or constant dollar remittances rather than nominal remittances that are of most interest. These are also shown in Table 3.10. In the early 1980s real remittances in both countries increased by approximately 10 per cent per year. In the late 1980s the growth rate in Western Samoa dropped to about 6 per cent while real remittances to Tonga declined by 4 per cent per year. In Tonga the rate of inflation in the late 1980s was double that of the early 1980s whereas in Western Samoa the experience was the opposite of that in Tonga. The rapid inflation in Tonga was caused by unusual climatic conditions, changes in tax structure, and imported inflation. In more usual times real remittances probably would not have fallen. Still, the slowdown in the rate of growth of remittances in the face of strong growth in new migration gives

some cause for concern. It is not clear whether the slowdown in the late 1980s reflects weakening economic performance in host countries or changes in the remittance behaviour of migrants.

Table 3.10 **Remittances and their size relative to other economic aggregates, Western Samoa and Tonga, 1970–90**

	Remittances		Remittances as a percentage of		
	Nominal	Real	Exports	Imports	Trade deficit
Western Samoa	(million tala)				
1970	1.5	-	42.6	14.8	22.6
1975	5.2	-	115.2	25.2	32.2
1980	17.2	17.2	112.6	30.3	41.4
1985	53.1	26.2	146.6	46.1	67.2
1989	86.6	33.5	296.6	49.6	59.6
Tonga	(million pa'anga)				
1979-80	11.09	17.7	174.1	46.6	63.7
1984-85	29.1	28.5	271.5	61.9	78.8
1989-90	43.7	22.8	361.0	64.9	79.1

Source: Calculated from data from Central Bank of Samoa and National Reserve Bank of Tonga.

Dependence on labour export

The data reported in Table 3.10 show that labour is the major export of both Tonga and Western Samoa and that its importance has grown dramatically over time. In the league of labour exporters shown in Table 3.11 none exceeds Tonga and Western Samoa in the ratio of remittances to exports. The closest in 1989 was Egypt with a ratio of 1.1 compared to 3.6 for Tonga and 3.0 for Western Samoa. Remittances in 1989 covered 50 per cent of imports in Western Samoa and 65 per cent in Tonga, with the proportion of imports covered increasing over time in both countries. These coverage rates equal or exceed the 30–50 per cent for Egypt, Pakistan and Yugoslavia, among the major labour exporters. The highest coverage rate among other labour exporters is North Yemen which usually covers 60 per cent of imports with remittances (Choucri 1986). Remittances covered 60 per cent of the trade deficit in Western Samoa and 80 per cent in Tonga. In both countries reliance on remittances to cover the trade deficit has increased over time.

Remittances were 45 per cent of GDP in Tonga and 40 per cent in Western Samoa. For other labour exporting countries remittances are less than 10 per cent of GDP. In North Yemen, remittances are 30 to 40 per cent of GDP (Choucri 1986). Thus Tongan and Western Samoan dependence on remittances is among the highest in the world.

Table 3.11 **Remittances and their size relative to other economic aggregates: selected labour exporting countries, 1970–89**

	1970	1975	1980	1985	1989
Remittances as a percentage of exports					
Egypt	4.0	29.0	72.4	83.8	113.3
Jordan	..	112.5	115.9	107.3	12.3
Republic of Korea	10.8	3.2	2.3	2.1	0.3
Pakistan	2.7	7.3	5.3	3.7	6.0
Philippines	2.7	7.3	5.2	3.7	6.0
Turkey	53.9	99.8	74.0	21.3	26.6
Yugoslavia	32.3	44.3	47.9	30.9	49.0
Remittances as a percentage of imports					
Egypt	3.0	11.5	41.0	35.5	37.2
Jordan	..	26.5	31.2	34.9	7.3
Republic of Korea	5.3	2.4	1.8	2.1	0.4
Pakistan	6.7	12.5	40.7	46.1	30.2
Philippines	2.7	7.3	3.9	3.4	4.5
Turkey	38.2	31.1	28.7	15.7	19.6
Yugoslavia	20.6	25.6	31.1	29.3	49.2
Remittances as a percentage of gross domestic product					
Egypt	2.5	22.2	25.7	13.4	9.4
Jordan	..	167.0	219.4	143.3	8.2
Republic of Korea	0.9	0.7	0.6	0.7	0.1
Pakistan	0.8	2.4	9.4	9.0	6.2
Philippines	0.4	1.1	1.4	0.5	1.1
Turkey	3.3	4.1	4.5	3.7	7.2
Yugoslavia	4.3	6.5	8.2	8.6	..
Remittances (US$m)					
Egypt	33	455	2791	3216	4253
Jordan	..	172	667	846	137
Republic of Korea	95	158	399	555	200
Pakistan	81	275	2218	2710	2221
Philippines	29	165	299	172	473
Turkey	317	1398	2153	1762	3135
Yugoslavia	542	1804	4346	3281	6645

Source: Calculated from International Monetary Fund, *Yearbook*, IMF, Washington, DC., various years.

Remittances per migrant

To put remittance flows further in perspective, 1986 and 1989 remittances have been expressed in terms of remittances per migrant. These figures are shown in Tables 3.12 and 3.13. Tongan migrants sent home US$850 per migrant in 1989 compared to US$500 for Western Samoan migrants. The respective estimates for 1986 were US$1000 and US$450.

Table 3.12 **Remittances to Tonga and Western Samoa, 1989**

	Tonga	Western Samoa
Pa'anga (million)	42.2	Tala (million) 86.6
US$ (million)	33.4	38.2
Migrants (thousands)	39.4	76.2
Remittances per migrant (US$)	850	500
From		
American Samoa (US$ million)	1.7	4.6
Per migrant (US$)	..	400
Australia (US$ million)	7.3	3.8
Per migrant (US$)	1100	740
New Zealand (US$ million)	8.4	18.3
Per migrant (US$)	555	435
United States(US$ million)	16.0	11.5
Per migrant (US$)	970	660

Note: The 1989 estimates for remittances from the United States and New Zealand to Tonga and from Australia to Western Samoa are lower than the 1986 estimates (Table 3.13). It may be that the estimates for illegals in 1989 are a little too high, or that many of the migrants to New Zealand in 1986 returned home, or that remittances to Tonga in the 1980s declined. Still, the estimates are roughly in agreement and correspond reasonably with estimates derived from sample surveys.
Source: Calculated by the author.

The estimates of remittances per migrant in 1989 presented in Table 3.12 were calculated by dividing the total remittances in Table 3.12 by the estimates of migrants in Table 3.8. Similarly the remittances per migrant in 1986 were obtained by dividing the remittances in Table 3.13 by the migrant estimates in Table 3.8.

The estimate for remittances per migrant in 1986 is reasonably close to an estimate of US$1293 in remittances received per household which the author calculated from the 1984 Tonga Household Income and Expenditure Survey. This figure is per household and some households may have received remittances from more than one migrant.

The Tonga Household Income and Expenditure Survey was a 1 in 16 stratified random sample of households. Five hundred and eight households, all on Tongatapu, are included in this study. This is the first analysis of the income component of the survey. Saia Kami is analysing the expenditure component and the author is grateful to him for running the analyses from this survey.

Table 3.13 **Estimates of remittances to Tonga and Western Samoa, 1986**

	Tonga	Western Samoa
Pa'anga (million)	37.5	Tala (million) 63.5
US$ (million)	25.1	28.4
Migrants (thousands)	25.5	63.2
Remittances/migrant	1000	450
From		
American Samoa (US$ million)	1.3	3.4
Per migrant (US$)	-	320
Australia (US$ million)	5.5	2.8
Per migrant (US$)	1025	890
New Zealand (US$ million)	6.3	13.6
Per migrant (US$)	690	390
United States (US$ million)	12.0	8.5
Per migrant (US$)	1180	600

Source: Calculated by the author.

The higher remittances from Tongan migrants may be explained by a number of factors. Assuming the socioeconomic characteristics of Tongan and Western Samoan migrants to the United States are similar to those to other destinations, the larger Tongan remittances reflect: (i) higher Tongan household income, which may be the result of higher labour force participation and a larger percentage with tertiary education; and (ii) the relative recency of Tongan migration. Tongans had lower naturalization rates than Samoans and thus may have been 'less permanent' migrants than Samoans. That is, given the relative recency of their migration, they may have had stronger ties to home and a higher perceived probability of return (Ahlburg and Levin 1990).

Russell (1986) estimated average remittances for all foreign workers worldwide in 1982 as US$1000 per migrant. Funkhouser (1990) estimated that remittances from the United States to El Salvador were between US$900 and US$1200 in 1987. From other destinations remittances averaged US$400 per migrant. Assuming a 5 per cent annual growth in the worldwide average (which yields an estimate close to Funkhouser's high estimate), in 1989 Tongan migrants remitted about 60 per cent of the world average and Western Samoans 40 per cent. Permanent migrants, such as those from Tonga and Western Samoa, typically remit less than contract labour migrants, such as those from Asia (Stahl 1990:371). The former are more likely to migrate with their family and as a consequence have greater demands on their earnings. Thus the estimates for remittances per migrant for Tonga and Western Samoa are quite plausible.

Sources of remittances

New Zealand is the dominant source of remittances to Western Samoa, although the proportions of remittances from the United States and Australia considerably exceed their estimated shares of migrants (Table 3.14). The United States is the dominant source of remittances to Tonga and its share of remittances is more than twice that of New Zealand even though they have approximately equal shares of migrants. The Australian share of remittances is equal to that of New Zealand even though its share of migrants is roughly half the size of New Zealand's. The data support the belief that the United States is emerging as the most important destination for migrants from the South Pacific island nations and that Australia is playing an increasingly important role.

Table 3.14 **Sources of remittances by country, 1988, 1989 and 1990** (per cent)

	American Samoa	United States	Australia	New Zealand
Western Samoa				
1988	7.3	27.9	9.4	51.7
1989	11.0	32.0	9.0	43.0
1990 (first 6 months)	8.4	29.7	10.2	47.1
Tonga				
1988	-	45.4	20.9	27.6
1989	-	48.5	24.0	21.8

Sources: Reserve Bank of Tonga and Central Bank of Western Samoa, unpublished data.

Based on these estimates of cash remittances per migrant, (Table 3.12 for 1989 and in Table 3.13 for 1986), Tongan migrants in the United States and Australia remit about twice as much per migrant as those in New Zealand. Western Samoans in these countries remit about 50 per cent more than those in New Zealand and American Samoa. This could reflect higher household income in the United States and Australia or that the migrants differ in other characteristics that affect remittances, such as education and skill, length of time in the host country, marital status, or household structure. Connell (1991:6) has noted that legal access to Australia is the most difficult and most selective of all destinations. In New Zealand reverse selection was carried out in the 'guest-worker' programs which gave preference to poor rural migrants (Macpherson 1981).

The estimate of 1986 Tongan remittances from New Zealand is reasonably close to a 1984 estimate of NZ$1404 (Fuka 1985:38). The estimate for 1989 in Table 3.12 is about US$135 below the estimate for 1986 in Table 3.13 because of the inflow of 4000–5000 Tongans to New Zealand in 1986. Connell and McCall (1990) indicate that many of these migrants later left, but the question of how many remained permanently is still open. If all stayed, remittances per migrant

in 1989 were US$555. If none stayed, estimated remittances per migrant rise to US$950, estimated remittances from New Zealand rise to US$760 and the estimate of Tongans in New Zealand should be revised down to 11,100.

In terms of economic gain from remittances, Australia and the United States are more lucrative than New Zealand. These are also the host countries that are more difficult for Pacific islanders to enter, Australia more so than the United States. Government initiatives to gain easier access for their citizens to host country labour markets should focus more attention on Australia and the United States. To date Australia has shown an unwillingness to grant special status to Pacific islanders (Connell 1988) but pressure for better access will continue.

These are gross returns. What is more relevant are rates of return to investments in the human capital of the migrants. The human capital of migrants to Australia and the United States appears to be greater than those to New Zealand and so the rates of return on human capital are closer than the gross returns indicated in Tables 3.12 and 3.13.

Why have remittances risen?

There are a number of factors that could explain the growth in remittances shown in Table 3.10. The most obvious is the growth in the number of migrants. When migration from the islands to New Zealand halved between 1974 and 1976 (Bedford 1984:124) remittances were steady or declining. Remittances to Western Samoa were T$3.9 million in 1974 and T$4.1 million in 1976. When migration stalled in 1981–82, reportedly because of policy changes and economic problems in New Zealand, growth in remittances also stalled. Still, fluctuations in the rate of migration do not explain all of the variation in remittances. Growth in remittances to Western Samoa in the 1980s appears to have outstripped the growth in the number of migrants, while growth in remittances to Tonga seems to have fallen behind growth in migration.

It is widely believed that remittances in the Pacific are sensitive to economic conditions in the host countries (Connell 1983:35–6). Evidence of such sensitivity has also been found in remittance flows to Greece, Yugoslavia, and Turkey. The sensitivity of remittances to Tonga and Western Samoa to variations in economic conditions in the major host countries was tested by regressing annual and monthly remittance flows on the unemployment rates of the major host countries. There was some evidence to suggest that remittances

Swamy (1981) found that the level of, and variations in, economic activity explained between 70 and 90 per cent of the variation in remittances to Greece, Yugoslavia, and Turkey, presumably because of their effect on the demand for labour and wages. Straubhaar (1986) linked changes in the flow of remittances from Germany to Turkey to changes in the flow of migrants, changes in their wages, and perceived changes in the political situation in Turkey. Remittances were particularly sensitive to political change. There is debate over the impact of economic activity on remittances from the Middle East. A number of studies cited in Russell (1986) point to a decline in remittances tied to adverse economic conditions. However, Keely and Tran (1989) investigated the impact on remittances of oil price related shocks in Europe in 1973, and the Middle East in the 1980s, and found no support for the hypothesis of sudden and rapid decline in remittances associated with economic change. Apparently the migrants were able to adjust to the shocks and thus insulate their families of origin.

decline when the host countries experience economic downturns but the effects were not strong. These results are discussed in Appendix 3.

Exchange rate changes may play some role in explaining variations in the flow of remittances. Devaluation of the home country currency obviously increases the nominal value of remittance flows, assuming the devaluation has no impact on the behaviour of the remitter. But exchange rate changes may have a behavioural impact that may be positive or negative depending upon the assumptions made about the remitter's utility function. In a recent study, Fox and Stark (1987) found evidence that Mexican migrants remit more dollars to Mexico when the peso devalues. It seems that the Western Samoan devaluation in 1983–84 may also have led to a rise in remittances.

In summary, the overall trend in remittances is determined by the number of migrants leaving Tonga and Western Samoa. Fluctuations in remittances around the trend are related to fluctuations in the economic conditions in the host country and variations in the exchange rate. Remittances also seem to be sensitive to changes in the economic and political environment of the home country.

Household survey estimates of remittances

There are a small number of surveys of remittances to Pacific islands with which we can compare the estimates of remittances derived from the official financial flows data. Connell (1980:12) reported remittances from Tongans living in Wellington in the late 1970s of cash NZ$406 and goods valued at NZ$275. The corresponding remittances from Western Samoans were NZ$362 and NZ$106.

Bertram and Watters (1985:506) estimated that cash remittances from islanders living in New Zealand ranged from US$36 (Niue) to US$525 (Kiribati). Loomis (1990:63) estimated remittances from Cook Islanders in New Zealand in 1985 at NZ$337 per migrant. Fuka (1985:38) reported that the average Tongan remitter in New Zealand in 1984 remitted NZ$1404. Tongamao (1987:100) reported estimates for Tongan remittances from Australia of A$10,000 per year. Fuka's estimate for Tongans is similar to the estimate the author's estimate of US$1293 based on the 1984 Tonga survey. Tongamao's estimate exceeds this author's by a factor of six and is clearly too high since it implies remittances from Australia more than 50 per cent greater than total remittances to Tonga. It also implies that Tongans remitted 53 per cent of median Australian household earnings.

There is a suspicion that responses to questions on remittances are biased. Loomis (1990) suggests lowering estimates by 25 per cent for reporting bias. But the direction of bias is not clear. Most surveys are of recipients of remittances. If recipients are avoiding taxes they may not report remittances or under-report them. However, it is also possible that families with migrants who are not remitting report remittances to avoid embarrassment. If the survey is of remitters similar biases may be present. It is clear that household surveys based on random sampling, where interviews are carried out at both ends of the transaction, are needed to clarify the bias question.

Two large random sample household surveys were carried out in American Samoa in 1985 and 1988 that included questions on the size, source and destination of remittances (Filiga and Levin n.d. and 1989). The mean value of cash and goods remittances sent to, and received from, Western Samoa in 1985 by those born in Western Samoa were US$684 and US$839. The estimate of cash remittances sent of US$516 exceeds this author's estimate of US$320 from the aggregate data. If we accept Loomis's downward adjustment factor for survey data of 0.25, then the estimates are reasonably close. (Detailed estimates are discussed in Appendix 2.)

In 1985, the number of individuals sending remittances to Western Samoa was three times the number receiving them. The data show the flow of remittances between Western and American Samoa. Although the flows to Western Samoa exceed those from Western Samoa, the latter flows are significant and imply a stock of migrants at various stages of the migration process, some being supported from home while they become established and others remitting to home.

The household surveys also show the economic importance of remittances to the sending and receiving households. It is clear that total remittances are often a very large part of the income of recipient families and allow them to achieve a standard of living that would not be possible in the absence of remittances. Remittances also represent a sizeable part of the household income of the remitting migrant and worsen the economic position of the remitter while improving that of the family of origin. Sewell (1983:120) estimated that remittances were 33 per cent of village income in Kiribati. Estimates for the Cook Islands are 35–40 per cent (Connell 1980:11), 14–48 per cent for five islands in Kiribati and Tuvalu (Geddes *et al.* 1983:140), and 58 per cent for the village of Sa'asi in Western Samoa (Shankman 1976). Remittances were 28 per cent of household income in Tonga, according to the 1984 Household Survey, and 90 per cent of the households in the survey received remittances. These estimates are higher than those for households receiving remittances from internal migration. Connell (1980:14) estimated average remittances from internal migration at less than 5 per cent of village income, although in some areas it was 20–40 per cent of income.

Depending upon the relative size of remittances and where the remitting families are located in the host country income distribution, remittances could result in the effective rates of poverty among Tongan and Western Samoan families exceeding the official rates. In the United States in 1980 the poverty rate among Tongan families was twice the national rate and that among Western Samoan families almost three times the national rate (Ahlburg and Levin 1990:18).

A few surveys report remittances as a percentage of income of the remitter. Macpherson (1978:11) reported that Samoans in New Zealand remitted 12 per cent of their income. Fuka (1985:38) estimated that Tongans in New Zealand remitted 13 per cent of their net income. In 1985 males in American Samoa remitted 11 per cent of their income in cash and 4 per cent in goods. They received cash remittances equal to 14 per cent of their income and 4 per cent in goods. In the 1988 survey households receiving remittances received 11 per cent

of household income and those sending sent 5 per cent of household income. Using estimates of remittances in 1980 and data from the 1980 US census the author estimated that a household with a Western Samoa-born head remitted 9 per cent of household income. An estimate of cash and commodity remittances of about 15 per cent of the income of remitting households seems reasonable. This estimate is equal to the percentage of income that Turkish immigrants in Europe remit (Griffin 1976:355).

Information on the percentage of income remitted could be combined with estimates of the number of remitters and forecasts of income to provide an alternative forecast for remittances.

The estimates of cash remittances obtained from surveys are in rough accordance with those derived from the aggregate remittance flow data and the author's estimates of the population of migrants. This should increase our faith in the latter. The survey data also show that, in accordance with the theory of remittances outlined in Chapter 2, flows are bi-directional, although the inward flows are by far the larger. The size of the goods remittance streams reported in the survey data supports the often heard contention that trade statistics underestimate the exports of agricultural goods and handicrafts and probably underestimate the value of imports. The surveys show that focusing on cash flows alone leads to a significant underestimate of the value of remittances.

Unrecorded remittances

The discussion so far has been based on officially recorded remittance data. Because of unrecorded remittances, total remittances are underestimated. Unrecorded remittances can include remittances in-kind (including hospitality shown to visitors from home), hand-carried cash remittances that remain outside the banking system (non-financialized), under valued imports sent by family members and funds held overseas. It is believed that the value of these unrecorded remittances is large but they are difficult to quantify.

In-kind remittances

Using existing survey information it is possible to estimate the approximate size of in-kind remittances. An official survey in New Zealand in the 1970s estimated remittances in-kind to be 68 per cent of cash remittances for Tongans and 29 per cent for Western Samoans. For Cook Islanders the figure was 62 per cent and for Tokelauans 35 per cent (Connell 1980:12). Loomis (1990:63) judges these estimates to be too high and thinks 30 per cent to be a more appropriate figure. This accords with Fuka's (1985) estimate of 32 per cent for Tongans in New Zealand. Based on the 1985 American Samoa survey, the author estimated remittances in-kind to be about 30 per cent. The estimate for Tongans was 24 per cent and Western Samoans 33 per cent. For remittances from American Samoa to Western Samoa and from the United States to American Samoa, the estimates were 40 per cent and 24 per cent respectively, presumably reflecting the effect of distance and transport

costs. These estimates are much higher than the 10 per cent estimated for other international migrants and may reflect shorter distance or lower transport costs between home and host country. Assuming that in-kind commodity remittances are 30 per cent of cash remittances, the cash value of in-kind remittances in 1989 was US$11 million to Tonga and US$13 million to Western Samoa. These estimates are lower bound estimates since they include only in-kind commodity remittances and ignore other kinds of unrecorded remittances, the most important of which may be funds held overseas.

Estimates for in-kind transfers are 9 per cent for Pakistan (Giliani *et al.* 1981) and 8-10 per cent for Yemen (Russell 1986:683).

Policymakers in Tonga and Western Samoa believe that there has been a significant increase in the last three or four years in the proportion of total remittances that are in-kind commodity remittances. These are most often taxis and clothing, although there is some evidence that, at least in Tonga, some vehicles may be used in agriculture. There is substantial evidence in support of this assertion. In Western Samoa there has been a dramatic increase in the number of merchants in the market and in the number of street sellers. After a natural disaster remittances usually jump sharply. After the cyclone in early 1990 recorded remittances did not increase; in the first six months of 1989 remittances were T$42 million while in the first six months of 1990 they were only T$38 million. It is thought that remittances in-kind replaced cash remittances. In Tonga, retail sales have been steady for several years whilst a flea-market with over 100 stalls has developed. Car registrations also jumped from approximately 200 per year in 1984–86 to 500–600 after 1987. It is unclear whether this is a new trend or a reaction to special conditions. If it is the former then the estimate of in-kind remittances is too low.

The financialization of cash remittances

Typically governments have been concerned with whether or not cash remittances make their way into the financial system, that is, become financialized and available to increase the loan base of the system. It is of secondary importance whether remittances are sent through banks, hand-carried, mailed, or transferred by agents, although remittances sent through the banking system are easier to monitor and tax.

There is a general belief in the Pacific that most remittances flow through the banking system or end up in the banks. Shankman (1976) claimed that a significant proportion of remittance money to Western Samoa is hand-carried. Yusuf and Peter (1985:13) report that an amount equal to officially recorded remittances enters Western Samoa each year and 'goes unrecorded until it formally enters the financial system'. Connell's estimate is considerably lower—around 20 per cent (Connell 1991:27). It appears that a significant proportion of cash remittances may enter Tonga and Western Samoa through channels other than the banking system and, at least for a time, may remain outside the financial system.

Research on remittances from Asian workers in the Middle East has shown that the factors which influence the percentage of total remittance money that flows through, or eventually enters, official channels include the existence of a well developed financial system, the difference between official and unofficial exchange rates, and bank charges for handling remittances.

Estimates for different countries vary widely. Giliani *et al.* (1981) reported that while 86 per cent of all Pakistani migrants used formal channels, only 52 per cent of those from the North West Province did so. This province has a very active unofficial market in currency. In a sample of Sudanese workers 24 per cent used official channels (Serageldin *et al.* 1983). Estimates suggest that relatively few Omani and Yemeni workers use official channels. The degree of development of the financial sector and differences in exchange rates appeared to be the main factors in these countries.

In Tonga and Western Samoa the explanation for the use of channels other than the banking system seems to lie in the underdeveloped nature of the financial system and in the cost of using the existing system. Charges on remittances create disincentives to using the banking system to buy and sell foreign currency. In Western Samoa there is (at minimum) a conversion fee of 0.25 per cent and strict control of the purchase of foreign currency. In Tonga the spread between the buy and sell rates on notes is 8.8 per cent. The spread on telex transfers is 2 per cent, but telex transfers have a fixed $12.50 fee imposed by each bank through which the transfer moves. These charges encourage hand-carrying remittances, using foreign exchange agents and the existence of an 'unofficial' market for foreign currency. In both Tonga and Western Samoa there are foreign exchange agents who operate openly and merchants accept payment in foreign currency. The lack of financial institutions in out-lying regions also lowers financialization. The further development of branch banks should enable more of the remittances to be captured by the system.

It is difficult to estimate the size of the 'unofficial' market and the value of transactions carried out in foreign exchange. However if Yusuf and Peter's (1985) estimate of unrecorded remittances is accurate it is potentially quite large. This implies that the effective money supply considerably exceeds the official money supply and that official estimates underestimate the value of cash remittances.

It is possible that remittances may be further underestimated because they are held abroad either temporarily or permanently. Chandavarkar (1980) and others have claimed that an overvalued exchange rate slows the flow of remittances and diverts it to unofficial channels. Russell (1986) reports some anecdotal evidence that an increase in remittances followed the delinking of the rupee from the US dollar and British pound. Western Samoa devalued 31 per cent in 1982–83 and remittances rose 39 per cent. In 1983–84 a 26 per cent devaluation was followed by a rise in remittances of 42 per cent. It is possible that remittances slowed in expectation of the 1983–84 devaluation.

Some of the slowdown in the flow of real remittances may reflect the negative real interest rates that have characterized the two countries, particularly Tonga. Migrant remitter behaviour makes it difficult for the government to predict the

flow of remittances and puts additional pressure on the exchange rate. Yusuf and Peter (1985:11) claim that Western Samoans 'probably hold their savings in foreign currency, whose volume cannot be measured with any accuracy'. Because of the negative real interest rates and the potential for devaluation it is more likely that these savings are held overseas.

Transfer pricing

An added dimension to the unofficial market is the reportedly widespread practice of double invoicing (transfer pricing) in trade. Imports are under-reported to avoid import taxes and the difference may be reflected in undervalued reciprocal exports. Such trade is said to take place between family members at home and abroad. Undervaluation of imports is a way to send remittances to relatives and family; undervaluing exports is a way to shift money overseas.

Conclusion

Remittances as recorded in official accounts underestimate the total value of remittances. In the Pacific remittances in-kind are at least 30 per cent of official cash remittances, and this percentage may have risen in the last few years. It also seems probable that a sizeable quantity of trade occurs between among family members and that these transactions are undervalued. They may be part of remittance flows and distort remittance and trade statistics, and reduce government revenues.

The majority of remittances eventually reach the banking system where they can be used to expand the amount of loanable funds. But it seems that some funds may remain outside the banking system and some may be held overseas, where they are unavailable to the home country to promote development. Factors responsible for the incomplete financialization of remittances include bank charges, overvalued exchange rates, low or negative interest rates, and the underdeveloped nature of the financial system.

Should policy makers rely on remittances?

This chapter has shown the importance of remittance flows to Tonga and Western Samoa. Will the flows continue? Should planners and policy makers rely on remittances to maintain external balance?

The data presented above indicate that the flow of remittances over time is strongly influenced by the flow of new migrants. The virtual cessation of migration from Western Samoa in the mid-1970s and again in the early 1980s was associated with a stalling of remittances. The halt in migration was linked to adverse economic performance in New Zealand and showed the dependency of Tonga and Western Samoa on the economic health of the host countries. The importance of migration flows to the flow of remittances will be shown further in Chapter 5.

Remittances grew strongly throughout the 1970s but rates of growth in the late 1980s were only a third of those of the early 1980s. Slowing in the rate of growth of remittances leads to fears that they will soon begin to decline. Declines are linked to a lower propensity to remit the longer the migrant is away and a much lower probability of remitting for second and higher-order generations.

Remittances are stable as long as there is a continued export of labour, although there may be short-run fluctuations around this trend associated with short-run economic fluctuations in the host countries. To the extent that Tonga and Western Samoa are successful in ensuring continued access for their citizens to host country labour markets, in securing foreign aid to finance the appropriate human capital accumulation of these migrants, and in fostering a strong sense of identification with the islands, remittance flows should remain strong. There are, however, sufficient doubts about their ability to do all of these things to make it rational to explore policy options to reduce the extent of reliance on migration and remittances.

CHAPTER 4

The impact of remittances on the economies of Tonga and Western Samoa

It has been asserted in the previous chapter that remittances have enabled Tonga and Western Samoa to attain a standard of living in excess of that which would have been possible in the absence of migration. There are those who argue that this is purely a short-term gain which will be dwarfed by the costs of long-term dependency on the flow of remittances, the instability of remittances, and the distortionary effect they have on development. Others argue that conventional sustainable development is not possible in the resource poor nations of the Pacific and that dependence on migration and remittances is a viable development strategy, not just a means to such a strategy (Bertram 1986; Bertram and Watters 1985, 1986). They argue that labour export is no more productive of dependency than export of commodities.

This chapter investigates the economic impact of migration and remittances on Tonga and Western Samoa. First, the effect of migration on productive capacity will be analysed, in particular the loss of educated and skilled labour. Evidence will be presented that migrants are highly educated and skilled rather than low skilled as is commonly thought. The loss of this labour inhibits the short and long-run productive capacity of the home economies. Second, the distortionary effects of remittances on production will be studied. These distortionary effects arise because remittances cause an appreciation in the real exchange rate and the real wage, both of which render the export sector less competitive. If remittances are not permanent a strong argument may be made for government policy

It is exceedingly difficult to empirically calculate whether the effects of migration and remittances increase or decrease welfare for Tonga and Western Samoa. Hayes (1985) argued that if the benefits and costs of migration were calculated for all individuals (migrants and non-migrants), then benefits outweigh costs. However, if the calculation is based only on those who remain in the home country, benefits are less than costs. Blazic-Metzner and Hughes (1982) judged benefits to exceed costs, although the evidence was not wholly conclusive. Lucas (1981) has a good discussion of the complexity of empirically evaluating the welfare effects of migration.

intervention to counter these distortionary effects. A number of such interventions are discussed but subsidies to the export sector, increasing labour market flexibility, and devaluation are most likely to be successful. Third, the use of remittances will be examined to determine if they have an overall positive developmental impact, including multiplier effects. The evidence suggests that, as in most other countries, remittances in Tonga and Western Samoa are principally used to finance consumption and that multiplier effects are relatively small. It will be argued that these findings are not surprising given the current economic and social situation in Tonga and Western Samoa. If economic incentives were differently structured then it is possible that the use of remittances would be different. The chapter will conclude with a discussion of the impact of remittances on the distribution of income. The scanty evidence suggests that this impact increases income inequality. However, at least for Tonga, evidence presented here shows that remittances decrease inequality.

The effect of migration on productive capacity

Migration shifts the home country's production possibility frontier inward, that is decreases the productive capacity of the nation. How much the frontier shifts is determined by the volume of migration, the education and skill level of the migrants (the more educated and skilled the migrants the greater the inward shift), the effects of remittances on the labour force participation of non-migrants and the amount of non-labour wealth the migrants take with them. Counteracting the shift in the frontier is the inward flow of remittances, which shifts out the budget constraint. The net result is the difference in these opposing forces. If there is no inward remittance then migration generally results in a welfare loss to the home country. The theoretical literature concludes that under reasonable assumptions the net effect of migration is positive.

The early models of international factor flows showed that the welfare of non-migrants after factor movements may be lower than it was prior to emigration. More recent advances have introduced nontradable goods and remittances into these models. Rivera-Batiz (1982) showed that with nontradables and no remittances migration unambiguously decreases welfare in the home country. However, when the analysis allows for different capital intensities in tradable and nontradable goods and for consumption and production of these to occur in the home and host countries, and distinguishes between temporary and permanent migration, the results can be ambiguous (see Djajic 1986; Kirwan and Holden 1986; Lundahl 1985; Rivera-Batiz 1986). However, under reasonable assumptions the impact of remittances on non-migrants' welfare is positive.

Migration and labour shortages

There is considerable disagreement within the Pacific as to whether migration has led to labour shortages, that is, whether migration has decreased the size of the effective labour force. Va'a (1990:13) reported comments by Western Samoan officials that migrants are easily replaced. This implies that there

is a pool of surplus labour from which migrants are drawn or from which replacement workers are drawn. If this were true migration would have little effect on output.

The evidence suggests that *ceteris paribus* migration does reduce the productive capacity of the home economy. Labour shortages, which are more severe for skilled and professional workers, have been reported in the Pacific by de Bres and Campbell (1975), Jones and Ward (1981), Hughes, Ahlburg and Lee (1986) and Browne (1989). These shortages are believed to have led to declines in agricultural production and a shift to less labour-intensive crops and rising wages. Connell (1980:35) reported that, as a consequence rising wages, the processes of agricultural decline observed earlier elsewhere, such as in the smaller Caribbean islands, are being replicated on the small islands of the Pacific, especially where international migration has been common (Trace 1954, cited in Bertram and Watters 1986:50).

Until recently it was thought that the effect of migration on real wages was ambiguous. However, the ambiguity has recently been resolved. Quibria and Rivera-Batiz (1989) point out that in the case of pure labour emigration real wages of non-migrant workers rise (see Quibria 1989). However, in the case of bundled emigration, where the migrants are highly endowed with physical or human capital, emigration can result in a greater proportional withdrawal of capital than of labour, lowering the capital-labour ratio and, thus, the real wage (see Rivera-Batiz 1989). This probably describes the case of recent Indian emigration from Fiji. It will be argued that migrants from Tonga and Western Samoa are relatively more skilled than non-migrants, however, it is not clear whether the conditions for bundled emigration are met.

Labour shortages may arise not only because of the loss of labour through migration but also because the receipt of remittances discourages labour force participation (Fairbairn 1985:204). To the author's knowledge, no studies of the disincentive effects of remittances in the Pacific exist. This study estimates labour force participation from the 1985 and 1988 American Samoa surveys and finds that, all else constant, individuals who received remittances were less likely to be in the labour force than those who received no remittances. Individuals who were sending remittances were more likely to be in the labour force than those who were not sending remittances. Both of these effects were statistically significant (see Appendix 2). The fact that the receipt of remittances decreases labour force participation is not surprising. In 1989 the average wage on a small agricultural holding in Western Samoa was estimated as WS$15 per day. Remittances of US$500 per year equal 30 per cent of wage earnings or 76 days of labour. As Bertram and Watters (1985:511) commented 'it would be expected that as the alternatives to...agriculture improve, so a reallocation of household effort away from agriculture would take place'.

The receipt of remittances may decrease labour force participation through an income and a substitution effect (remittances increase the reservation wage of labour). Remittances then cause market wages to rise. Funkhouser (1990) found that in El Salvador a 1 per cent increase in the number of households with remitting migrants was associated with a 0.5–1.0 per cent increase in wages. Areas with the highest rate of outmigration also had the highest rate of wage increase.

Migration reduces the labour force and the productive capacity of the economy and the receipt of remittances leads to the withdrawal of further labour from the labour force. These effects are offset by the fact that the receipt of remittances increases income. The assertion that Tonga and Western Samoa have a higher standard of living than would be possible in the absence of migration and remittances assumes that remittances more than compensate for the inward movement of the production frontier.

The quality of migrants: are migrants educated and skilled?

If migrants are of above average ability, education and skill, the production frontier contracts more than if migrants are of average ability. There is considerable disagreement within the Pacific as to whether migrants' skills are above or below average.

Va'a (1990:13) reported comments by Western Samoan officials that migrants are unskilled. This view is inconsistent with other evidence. Ahlburg and Levin (1990:22) compared the education and skill of individuals born in Tonga and Western Samoa, but resident in the United States in 1980, with individuals in the home censuses of 1976 and 1981. The levels of education and skill (based on occupational classification) of migrants to the United States were considerably higher than those of non-migrants in the home populations. The same conclusion is reached if we only consider the most recent migrants to the United States. Even though migrants accumulate education and skills as their length of residence in the United States increases, they arrive with higher levels than possessed by the average individual at home.

A number of other studies in the Pacific have also found that migrants are skilled. Hayes (1982) found that a high proportion of Cook Island permanent migrants to New Zealand were skilled or semi-skilled. Bedford (1988:23), Tongamoa (1987:72), Connell and McCall (1990:10), Hezel and Levin (1990) all cite evidence of a brain drain from the Pacific to Australia, New Zealand, and the United States. The one exception to positive selectivity is the guest worker schemes to New Zealand. These are negatively selective, and target the rural uneducated and unskilled (Macpherson 1980). Migration of the most highly educated and skilled should not be surprising. The relative gains to migration are greater for the uneducated, but the absolute gains are higher for the educated and it is absolute income differences that drive migration (Funkhouser 1990). It is clear that migration from Tonga and Western Samoa is selective on education and skills. Selective migration is so extensive that 'among those who leave, the better educated are very heavily represented and with their departure the export of labour services shades into the export of human capital' (Yusuf and Peter 1985:18). The export of highly educated and skilled labour reduces the productive and developmental capacity of the economy.

In recent research in the United States (Borjas 1985) it has been argued that migration is becoming less selective. Connell (1991) suggests that the same may be true for Pacific islander migration, largely because of the importance of sponsored family migration. This does not necessarily follow but the selectivity of migration from the Pacific is a topic that warrants further study.

The impact of remittances on development

Investment or consumption?

Growth prospects hinge on the economy's ability to transform remittance flows into a stream of productive investments, otherwise remittances serve only to maintain the recipients at a standard of living determined by the remitter. There is little evidence that remittances sent to Tonga and Western Samoa have been saved and invested. As in most other countries remittances are used principally for immediate consumption; the remainder goes to house construction, debt repayment, and the financing of further migration. Connell (1991:12) cites studies of Tongans in Auckland and Sydney that show that regular remittances are sent for 'subsistence' (consumption), church donations, family occasions, and school fees.

It is not surprising that remittances are used for consumption in the Pacific. Connell (1981) and Macpherson (1985) have described the barriers to investment in the Pacific—primarily the social obligations that act as a progressive tax on initiative, communal ownership of agricultural land and geriocratic decision making. In addition, in both Tonga and Western Samoa real interest rates which were negative in the 1970s and much of the 1980s discouraged savings. Government incentive schemes in Western Samoa have fallen victim to austerity measures (Yusuf and Peter 1985). The fact that remittances are consumed rather than saved and invested seems to be a rational response to the scarcity of profitable investment opportunities and the social environment. The lack of profitable investment opportunities is also related to the economic environment created by government policy.

Two studies of internal migration in the Pacific did, however, find evidence of saving and investment. Turner (1984) found that 4.5 per cent of domestic remittances were invested, 5.5 per cent saved and 23 per cent used for school fees in a village study in Papua New Guinea. Loomis (1990) found that 25 per cent of remittances were invested and 6 per cent saved in two surveys in the Cook Islands. Payment of school fees can be regarded as an investment as can expenditures on housing if these are used to generate rental income or if they improve the health of the inhabitants. The importance of the church in the migration-remittance cycle cannot be ignored. Using data from the 1988 Survey of Income and Expenditure in American Samoa, this study found that 2 per cent of each additional dollar of household income and 26 per cent of each additional dollar of remittances was given to the church. If remittances are fully under the control of the recipient this is a surprising finding. A more likely explanation is that a significant portion of the remittance may be earmarked for donation to the church and thus not be available to the recipient. While the church is active in education and is involved to a limited extent in small development projects, most of its remittance receipts are believed to be spent on building projects. The economic role of the church warrants further study.

For other studies of the use of remittances also see Rubenstein (1983) and Griffith (1986) for the West Indies; Kasai (1988) for Indonesia; Knowles and Anker (1981) for Kenya; Stahl and Arnold (1986) for six Asian countries; Montes (1987) and Funkhouser (1990) for El Salvador; Chambers (1975) and Connell (1980) for Tuvalu; Curzon (1979) for Cook Islands; Shankman (1976) for Western Samoa; de Bres and Campbell (1975) and Hau'ofa (1979) for Tonga.

Multiplier effects

Since remittances go primarily to consumption rather than to investment, it has been claimed that 'such transfers generally have failed to contribute to development in the receiving countries and have actually had a number of negative side effects' (United Nations 1983:83). Stahl and Arnold (1986:915) challenge this prevailing negative view of the developmental impact of remittances and assert that focusing attention on the immediate use of remittance income 'is to ignore the considerable stimulus it provides to indigenous industries, as well as its contribution to the supply of loanable funds, i.e. investment capital'. They argue that spending remittances generates a multiplier effect which results in a larger increase in demand than the original value of remittances. This argument has merit but does not mean that remittances necessarily have a positive developmental impact. The size of the multiplier is affected by the leakage of demand into imports and the ability of local industry to meet increased demand. If local elasticity of supply is low, increased demand generates inflation.

The Stahl and Arnold argument also relies on the world being Keynesian. If, however, the world behaves according to a strict general equilibrium model (complete and instantaneous clearance of all markets at all times), the injection of remittances into one economy from another results merely in the redistribution of consumption from the sending to the receiving economy. However, if nontraded goods are introduced into the model multiplier-like effects can occur. Thus, the existence or not of multiplier effects is an empirical question.

Stahl and Arnold (1986) infer from the Asian evidence that remittances have stimulated output in indigenous industries. This does not appear to have been the case in Tonga or Western Samoa because of a large leakage to imports and low elasticities of supply. In Western Samoa 50–60 per cent of consumption is of imports, and in Tonga it is believed to be even higher (Browne 1989:136). In Western Samoa remittances are believed to have played a role in the current 16 per cent rate of inflation but this is not believed to be the case in Tonga. In Tonga the high rate of inflation is blamed on recent government sector pay rises and increased demand in the construction sector has led to higher wages that may have affected the inflation rate directly or had an effect through matching demands from the public sector. Thus, the multiplier effects are likely to be low in these two countries because of large leakages to imports and a lack of capacity in local industry, particularly in the construction sector, to meet increased demand stemming from remittances.

Kandil and Metwally (1990) estimated a Keynesian macro model of the Egyptian economy and derived a multiplier of 2.2. An earlier general equilibrium model by Choucri and Lahiri (1983) also found that remittances stimulate real output with minimal inflationary pressure. In contrast, in a set of regressions for the Arab world in the 1980s, Looney (1990) found remittances did not contribute to growth but generated inflation and possibly compounded the balance of payments problems of these countries.

The central or reserve banks can influence the multiplier effect through regulations on reserve ratios and setting interest rates to financialize remittances.

It is highly likely that negative real interest rates, particularly in Tonga, have discouraged deposits and make credit creation difficult. The relatively underdeveloped nature of the financial sector and narrow range of financial instruments has further narrowed the developmental potential of remittances.

The developmental impacts of remittances have been quite modest in the Pacific, as they have been in most other countries. The explanations for the failure of Tonga and Western Samoa to transform remittance flows into a stream of productive investments include policy and cultural environments that limit the number of productive investment opportunities. Government policy has been regulatory rather than supportive, features of the financial system may have limited financialization of remittances, social custom operates as a tax on entrepreneurship and a significant fraction of remittances may be earmarked for donation to the church and not available for investment.

Distortionary effects of remittances on the economy

The main distortionary effects of remittances are equivalent to what are more commonly known as booming sector, Dutch disease, or Gregory effects (Corden 1984). These effects result in the reallocation of productive factors away from the traded goods sector to the nontraded goods sector in response to a favourable shock from a resource discovery or a rapid increase in the price of a commodity, typically an exported one. Examples of booming sectors are the discovery or increase in price of oil, natural gas, gold, and diamonds. The mechanism through which the effects occur are as follows: part of the income from the booming sector is spent on nontraded goods which leads to a real appreciation of the exchange rate (an increase in the relative price of nontraded goods to traded goods); this in turn draws resources out of the non-booming traded sector into the nontraded goods producing sector; real wages rise and export industries become less competitive (Corden and Neary 1982).

Actually there are two effects: (i) a resource movement effect. In the booming sector the marginal product of mobile factors employed there increases and so draws resources out of the other sectors, leading to economy-wide adjustments, one mechanism of adjustment is the real exchange rate; and (ii) a spending effect. Higher real income leads to extra spending on nontraded goods which increases their price leading to further economy-wide adjustments.

Foreign aid can be seen as a booming sector (van Wijnbergen 1985) and migration, or the export of labour, similarly can be viewed as a booming sector (Bertram 1986; McKee and Tisdell 1990:112). Aid and remittances are partially spent on nontraded goods and this increase in demand puts upward pressure on the real exchange rate drawing resources out of other sectors, for example, agriculture and manufacturing, and into services, including government employment. Real wages rise and external competitiveness declines. Most countries that exhibit booming sector effects do so for relatively brief periods of time and have a single booming sector. Some have used policy successfully to guard against the distortionary effects of rapid inflows of income (Corden and Neary 1982; Corden

1984; van Wijnbergen 1984, 1985; Gelb *et al.* 1988). The labour exporters of the Pacific are unique in that they have two booming sectors—migration and aid—and the booms have been long-lived. In general, their governments have not tried to counteract the distortionary effects of aid and remittances.

No problem arises if the income flows from the booming sector, or if the aid or remittances are permanent. Under these conditions factors should be allowed to move into the production of labour for export and into nontraded goods. No special effort should be made to assist those industries harmed by the appreciation of the exchange rate. However, if the flows are not expected to be permanent the appreciation in the real exchange rate can cause significant long-term damage, principally to agricultural exporters and manufacturers with a low imported component in production. The damage occurs because temporary appreciation of the real exchange rate causes suboptimal investment in the export sector and loss of productivity gains which are cumulative. Productivity losses from an overvalued exchange rate mean lower gains in the future. Booming sector effects will also magnify the effects of any anti-export biases in trade policies.

If income flows are not permanent but capital markets are perfect, booming sector effects do not present a problem either (van Wijnbergen 1985).

Corden (1982:22) showed that manufacturers with a high imported component to raw materials may even benefit from booming sector effects.

Widespread evidence suggests that productivity growth is faster in trade-oriented economies than in more inward-looking economies (van Wijnbergen 1985:6).

The distortionary effects of aid and remittances in Tonga and Western Samoa appear to be sizeable. Gelb *et al.* (1988) developed an index of the Dutch disease effect. The index compares the size of the actual share of tradables (agriculture and manufacturing) in the economy relative to their normal levels, that is, the level expected in the absence of Dutch disease effects. Norms for Tonga and Western Samoa were established based on the shares for countries with the same GDP per capita. For Tonga these were Morocco and Honduras and for Western Samoa they were Philippines, Senegal and Zimbabwe. Focusing only on manufacturing, the share of manufacturing in Tonga is 8 per cent compared to a norm of 17 per cent while in Western Samoa the share is 12 per cent compared to a norm of 25 per cent. In Tonga and Western Samoa the share of manufacturing in GDP is less than half of what is expected for countries at similar levels of GDP per capita. At least part of this shortfall can be explained by the distortionary impact of aid and remittance flows decreasing the competitiveness of the export sector. Further evidence of the weakness of the traded sector in

The focus of this study is only on manufacturing because the share of agriculture does not reflect a tradable sector. In Tonga and Western Samoa the share of agriculture is inflated by the large subsistence sector and the inclusion of those who have dropped out of the labour market after the receipt of remittances as being in subsistence. The share of agriculture in GDP in Tonga is 40 per cent compared to a norm of 25 per cent and the share in Western Samoa is 65 per cent compared to a norm of 20 per cent. These sectors are larger than the norms but not because they have benefited from resource inflows from the distortionary effects of aid and remittances.

Tonga is the weak performance of agricultural exports in the 1980s and the slow growth of manufacturing. In Western Samoa exports were steady over the 1980s. In Tonga the increase in the demand for construction linked to remittances is blamed for recent wage increases which have, in turn, been blamed for the failure of attempts to rehabilitate banana and coconut plantations.

The success stories of development are those countries which have aggressively promoted the traded goods sector (van Wijnbergen 1984:41). Examples of island economies which have done so and grown rapidly are the Maldives, Mauritius and parts of the Caribbean. The relatively low growth performance of Tonga and Western Samoa may in part be explained by the damage done to their export sectors by the distortionary effects of aid and remittance flows and the lack of government policy to offset these effects.

Estimates of the impact of increases in real aid flows on the real exchange rate and the real traded-product wage in six African countries indicated elasticities of 0.2 to 0.87 for the effect on the real exchange rate and 0.6 to 2.5 for the effect on the wage (van Wijnbergen 1985). If similar elasticities hold for remittances to Tonga and Western Samoa, the 10 per cent per annum growth in real remittances in the early 1980s would have led the real exchange rate to be 2 per cent to 9 per cent above where it would otherwise have been and the real wage 6 per cent to 25 per cent higher than in the absence of growing real remittances.

Policy options to counteract booming sector affects

A number of policy options are open to governments. A government may pay a subsidy to the export sector as an optimal intervention (van Wijnbergen 1985). Indonesia and Ecuador used subsidies, tax rebates and other incentives to assist the export sector in the face of oil booms (Gelb *et al.* 1988:92). The government could attempt exchange rate protection, intervene in the foreign exchange market to prevent nominal appreciation and then sterilize the domestic effects either by open market operations or a budget surplus. Corden (1982) showed that this policy will be unsuccessful if the boom is long lived. The aid and remittance boom in Tonga and West- ern Samoa has been long lived. Botswana and Indonesia minimized the disruptive effects of booms by tightly managing government expenditure as did Cameroon by holding 75 per cent of its oil proceeds overseas.

This subsidy argument requires externalities, lack of information or foresight on the part of factors in the export sector, or imperfect capital markets (Corden 1984). Van Wijnbergen (1985) argues that capital markets are imperfect and that externalities exist since the learning by doing effects that lead to productivity enhancement are industry rather than firm specific.

Exchange rate protection is bound to fail because sterilization leads to further capital inflow which requires yet further sterilization and makes the control of the money supply difficult. As foreign exchange reserves build up pressure for appreciation increases (Corden 1981, 1984).

Sterilization through open market operations avoids the inflationary effect of income inflows but the resultant spread between deposit and loan rates hinders domestic financial intermediation and leads to wealth being held in property or overseas.

Another policy option is a devaluation to assist the traded goods sector. Corden and Neary (1982:841) have cautioned that such a policy should be accompanied by an appropriate fiscal or monetary accommodation or the devaluation will be offset eventually by rising domestic prices. Mauritius has used exchange rate changes effectively to safeguard the competitiveness of its export industry. Mauritius has also safeguarded competitiveness by introducing wage flexibility in which wage increases are linked to productivity gains not to inflation (Schapiro and Bheenick 1989).

The only Pacific island country to use exchange rate changes strategically to enhance competitiveness is Fiji. None of the Pacific countries is characterized by flexible labour markets and most have relatively high labour costs as a consequence. Tonga and Western Samoa should consider policies to increase exchange rate and labour market flexibility which would help export industries and encourage tourism. Exchange rate changes may even increase remittance flows, particularly if the current exchange rate is viewed as overvalued.

Raising tariffs or tightening quotas is often advocated. This policy aids the import competing industries but worsens the position for the exporting sector. It suffers by the real depreciation, which would be greater, and from the resource loss to the import competing sector. This policy is not recommended (Corden 1984:376).

Effects on the distribution of income

Research on the impact of remittances on the distribution of income sometimes finds that remittances increase inequality and sometimes finds that they decrease it. The explanation for these conflicting findings is that the distributional impact of migration and remittances changes over time. Early in the process few households have migrants and the distribution of remittances is unequal. The impact of remittances depends upon their size relative to other sources of income, and on the ranking of the receiving household in the distribution of total income. Initially higher income households are the most able to invest in risky migration. If remittances are significant, and we saw in Chapter 3 they are, then the distribution of income becomes more unequal. As the migration process matures, information diffuses through the society so that migration and remittances reach lower income families. At this stage the negative effects of remittances on the distribution of income are reduced and possibly reversed. However, even at the mature stage of the process it seems that households at the bottom of the income distribution benefit little from migration and remittances (Stark, Taylor and Yitzhaki 1986).

Stark, Taylor and Yitzhaki (1986) studied two Mexican villages, one with 26 per cent of households with a migrant overseas and one with 70 per cent. In the first village remittances flowed primarily to households at the upper end of the income distribution increasing inequality. In the second village remittances were more diffuse and decreased inequality.

Evidence on the effect of remittances on income distribution in the Pacific is very fragmentary. Studies in Papua New Guinea and in a number of Polynesian countries report increasing income inequality with remittances. These findings

reflect the fact that the migrants came predominantly from the more prosperous families (Turner 1984; Zimmer 1985; Connell 1981). To the best of the author's knowledge there are no studies of the distribution of income in either Tonga or Samoa. Policy makers interviewed in these countries believed that remittances had decreased inequality because the migrants come from the less well educated and poorer families. As has been argued above, this is not the case, migrants are educated and skilled. Thus it is likely that remittances make the distribution of income less equal.

Table 4.1 reports the distribution of income in Tonga in 1984 based on an analysis of the Tonga Household Income and Expenditure Survey. The distribution of total household income (cash and the imputed value of non-cash income) is shown in column one, and of market (cash) income in column three. Columns two and four report the corresponding distributions of remittances. Remittances make the distribution of income more, not less, equal. This is particularly the case when only market (cash) income is considered. The bottom 20 per cent of Tongan households receive 7 per cent of total income (3 per cent of cash income) and 17 per cent of remittances (24 per cent). The top 20 per cent receive 42 per cent of income (51 per cent) but only 29 per cent (26 per cent) of remittances. In Table 4.1 it can be seen that the distribution of income, particularly cash income, in Tonga is very uneven. The percentage of income going to the bottom 20 per cent of households is 7 per cent and that to the top 20 per cent of households 42 per cent. These percentages are similar to Pakistan and Indonesia at the bottom end and similar to Sri Lanka and Brazil at the top end. It thus appears that Tonga is at a mature stage in the migration cycle and the impact of remittances on the distribution of income is positive.

The author's analysis of the effect of remittances on the distribution of income in American Samoa in 1985 and 1988 revealed that remittances had very little impact on the distribution of income largely because they were small in relation to other sources of income. The distribution of income in American Samoa is even more uneven than that in Tonga.

This finding is not fully consistent with the finding that migrants tend to be more educated and skilled than non-migrants. A complete resolution of this puzzle must await the complete analysis of the Tonga survey data.

The effect of remittances on income distribution is complex and depends upon where the recipients are situated in the income distribution, the share of remittances in total income and the weights attached to income at different points of the income distribution. Early in the migration process only the wealthy participate and remittances increase inequality. As the process matures the middle class participates and the inequality produced by remittances is reduced. When migration is very widespread remittances may decrease inequality or be neutral.

If aid and remittances decline, the adjustment of the exchange rate cannot recapture the productivity gains lost during the period of an overvalued exchange rate. Given the uncertainty about the continuance of remittances and aid

at current or increasing levels and their desire to promote export growth, it is important for the governments of Tonga and Western Samoa to explore policies to offset the distortionary effects of remittances and aid discussed above. The policies that warrant most serious attention are subsidies to export industries, the use of exchange rate changes to enhance competitiveness, and the introduction of more flexibility into the labour market to set wage changes in line with productivity rather than inflation.

Table 4.1 **Tonga: income distribution, 1984** (per cent)

	Market and non-market income		Market income only	
	Total household income	Remittances	Total household income	Remittances
Decile 1	2.880	8.660	0.446	13.233
Decile 2	3.664	8.633	2.245	10.984
Decile 3	5.448	8.516	3.672	9.598
Decile 4	6.042	8.957	4.796	8.294
Decile 5	8.790	9.489	6.182	7.106
Decile 6	7.761	8.922	8.252	9.158
Decile 7	10.427	8.979	10.361	8.981
Decile 8	12.936	8.974	12.860	6.700
Decile 9	16.176	14.009	16.824	9.321
Decile 10	25.897	14.860	34.361	16.625

Source: Calculated from 1984 Tonga Household Income and Expenditure Survey.

Summary and conclusions

In this chapter several adverse effects of migration and remittances have been discussed. Migrants have been shown to be more skilled and more educated than non-migrants. Their departure, together with the disincentive effect of remittances on recipients, has led to labour shortages, rising wages and a decrease in productive capacity. It has also been shown that the potential for remittances to fuel self-sustaining economic growth has been largely unrealized. The social and economic environment of Tonga and Western Samoa makes current consumption rather than investment the most rational use of remittance money. Government policy could encourage investment, but at present this potential is also unrealized. Current consumption could have positive multiplier effects, however, leakage to the import sector and low elasticities of supply prevent these effects in Tonga and Western Samoa.

The main distortionary effects of remittances, booming sector effects, which lead to an appreciation of the exchange rate, a rise in real wages, a decline in the competitiveness of export industries and increased reliance on migration and remittances, have been examined. The distortionary effects of remittances on the economies of Tonga and Western Samoa appear to be sizable.

CHAPTER 5

The future of migration and remittances in Tonga and Western Samoa

Predictions of future migration

It has been shown in Chapters 3 and 4 that the economic future of Tonga and Western Samoa depends on the sustainability of remittance flows. The future of remittance flows is linked in large part to the flow of new migrants. Since the probability that a first-generation migrant will remit, and the amount remitted, may decrease with the length of time away, and since second-generation migrants are less likely to remit and, if they remit, to remit less than the first generation, remittances will slowly decline unless new migration occurs. Evidence has been cited above that this pattern seems to be true for the Pacific.

Host country immigration policies: recent developments

The future of migration depends on the immigration policies of the receiving nations, New Zealand, Australia and the United States. These countries are adopting or will soon adopt points based schemes to select migrants. The schemes are straightforward measures of human capital on which Pacific islanders are unlikely to do well in the international competition for immigration places. The future of Pacific migration is therefore tied to the weight given in points schemes to family reunification or to the establishment of family reunification outside the points scheme, as Australia and New Zealand have done for immediate family. An extremely important element in the future of Pacific migration is the nature of the United States' new immigration policy.

Illegal immigration has played an important part in recent migration to New Zealand, Australia and the United States. Four amnesties in New Zealand since the mid-1970s and the recent US amnesty have encouraged migrants to overstay on

visitors' visas in the hope of future amnesties even though immigration officials have declared that no new amnesties will occur. In both Australia and New Zealand enforcement of deportation of overstayers has been increased. Illegal immigration is likely to continue as long as the huge differential in expected earnings between the islands and the host countries remains, despite increased penalties for illegal immigration. An increase in the difficulty of legal immigration will also encourage illegal immigration. Given the recent economic forecasts for the Pacific (World Bank 1990) and those for the receiving countries (from the University of Pennsylvania's Project Link), economic forces promoting legal and illegal migration are likely to strengthen.

Future scenarios

Given the difficulty of forecasting changes in all of the factors affecting migration, estimates of migration have been generated under four scenarios. The first is a very pessimistic no-migration scenario. This scenario assumes either a radical change in immigration policies of the receiving countries or a decision by the sending countries to stop migration. The rate of population growth would be equal to the rate of natural increase. Although this scenario is unlikely, it is instructive to examine what would happen to population size and remittances if the 'safety valve' of migration were turned off.

The second scenario, the *status quo* scenario, assumes that although there may be some modification of immigration policies, migration will continue along its historical path. The populations of both Tonga and Western Samoa will continue to grow at about 0.5 per cent per annum, the rate over the last 15–20 years, and the difference between this and the rate of natural increase represents the numbers who will continue to migrate. This scenario approaches the condition in many Pacific micro-states where 'a new steady-state distribution of island-born population seems to have emerged...with net migration converging to the rate of natural increase' (Bertram 1986:812).

Two intermediate scenarios are also considered. One uses the World Bank migration assumption which has low and declining migration and the other assumes that migration will be 50 per cent of that required to keep population growth at 0.5 per cent per annum. These scenarios assume adverse effects on migration from the slowdown in host country economies, a sustained crackdown on illegals, and adverse consequences from points tests.

Predictions of future migration

To calculate migration forecasts of the rate of natural increase for Tonga and Western Samoa are required. These are taken from the new World Bank forecasts prepared by Bulatao, Bos, Stephens and Vu (1990). The population forecasts and assumptions underlying them are shown in Tables 5.1 and 5.2. The base year

population estimate for the forecasts is too high. The population of Tonga in 1990 was about 96,000 not 105,000 and that in Western Samoa 160,000 not 171,000. The fertility and mortality assumptions of Bulatao *et al.* (1990) are appropriate but have been shifted forward by 5 years. That is, the 1985–90 assumptions are assumed to hold in 1990–95, and so on.

If the population of Tonga grows at the rate forecast by Bulatao *et al.* the population in 2010 will be 50 per cent above the current level. If migration were halted and fertility and mortality were unaffected (which is unlikely, the rate of natural increase would probably be higher), the population would be 57 per cent higher than in 1990. If, however, the current rate of population growth is maintained (with the difference between the population growth and the rate of natural increase migrating), the population in 2010 will be 106,000, only a 10 per cent increase on 1990. Migration would be between 2000 and 3000 per year rather than the 200–800 predicted by Bulatao *et al.*

Table 5.1 **Tonga: population and migration under different growth and emigration assumptions, 1990–2010**

	Population ('000)				Migration per year ('000)	
	Assumption					
	World Bank	*Status quo*	No migration	Difference[a]	To maintain population growth at 0.5 per cent per annum	World Bank
1990	105.0	96.0	96.0	-	-	-
1995	115.0	98.4	108.7	10.3	2.1	0.8
2000	125.0	100.9	123.2	22.3	2.9	0.6
2005	135.0	103.4	137.9	34.5	2.9	0.4
2010	144.0	106.0	150.6	44.6	2.5	0.2

World Bank assumptions	1985–90	1990–95	1995–2000	2000–2005	2005–2010
Birthrate	32.0	31.1	27.0	22.9	20.2
Death rate	6.8	5.9	5.3	4.8	4.9
Rate of natural increase	2.5	2.5	2.2	1.8	1.5
Net migration rate	-8.7	-7.3	-5.0	-3.1	-1.4
Growth rate	1.7	1.8	1.7	1.5	1.4

[a]No migration - *status quo*.

Note: *Status quo* assumes an annual growth rate of population of 0.5 per cent, the growth rate observed 1976-86.

No migration assumes a growth rate of 2.5 (1990–95), 2.5 (1995–2000), 2.2 (2000–2005), and 1.8 (2005–2010), based on World Bank birth rate and death rate assumptions shifted forward 5 years.

Source: Calculated by the author.

Table 5.2 **Western Samoa: population and migration under different growth and emigration assumptions, 1990–2010**

	Population ('000)				Migration per year ('000)	
	Assumption					
	World Bank	*Status quo*	No migration	Difference[a]	To maintain population growth at 0.5 per cent per annum	World Bank
1990	171.0	160.0	160.0	-	-	-
1995	184.0	164.0	182.2	18.2	3.6	2.0
2000	202.0	168.2	207.5	39.3	4.2	1.2
2005	221.0	172.4	233.7	61.3	4.4	0.4
2010	242.0	176.8	258.7	81.9	4.1	-

World Bank assumptions	1985–90	1990–95	1995–2000	2000–2005	2005–2010
Birthrate	33.2	32.9	30.1	26.4	24.1
Death rate	6.9	6.5	6.1	5.9	5.7
Rate of natural increase	2.6	2.6	2.4	2.1	1.8
Net migration rate	-16.8	-11.3	-6.2	-1.9	-
Growth rate	0.95	1.51	1.78	1.87	1.83

[a]No migration - *status quo*.

Notes: *Status quo*: population growth rate from 1971–85 was 0.6 per cent per annum (Yusuf and Peter 1985:1) but stagnated from 1985–90 (World Bank 1990). The *status quo* assumption is 0.5 per cent per annum. No migration assumes a growth rate of 2.6 (1990–95), 2.6 (1995-2000), 2.1 (2000–2005), based on World Bank birth rate and death rate assumptions shifted forward 5 years.

Source: Calculated by the author.

If Western Samoa's population grows at the rate predicted by Bulatao *et al.* it would be 51 per cent above the 1990 level, and if migration were to halt the population would increase by 62 per cent in 20 years. These predictions and those for Tonga reflect the relatively high fertility and low mortality rates. If migration continues to act as a safety valve for Western Samoa the population in 2010 will be 177,000, 11 per cent above the 1990 level. Under this growth rate migration would be over 4000 for much of the period, a figure exceeded in 1979, 1980, 1984, and 1988.

Table 5.3 shows the migrants per year necessary to maintain the population growth at its historical rate of 0.5 per cent per year, taken from Tables 5.1 and 5.2, and the resulting total number of migrants overseas.

The declines in migration towards the end of the forecast period reflect the World Bank's assumption that fertility in both countries will drop to replacement by about 2020. If this fertility decline does not occur migration will continue at higher levels than shown in the tables or the rate of population growth will increase.

Table 5.3 **Predicted migration flows and stocks for Tonga and Western Samoa if migration continues along its historical path, 1990–2010**

	Tonga		Western Samoa	
	Migrants per year	Total stock of migrants	Migrants per year	Total stock of migrants
1990	-	41,400	-	79,800
1995	2,006	52,530	3,640	98,040
2000	2,900	67,030	4,220	119,140
2005	2,940	81,730	4,400	141,140
2010	2,540	94,430	4,120	161,740

Source: Calculated by the author.

Projections of future remittances

Predictions of future remittance flows are shown in Tables 5.4 and 5.5. Three assumptions are made about remittances per migrant: (i) real remittances per migrant remain at their 1989 level (US$900 for Tonga and US$500 for Western Samoa), (ii) real remittances per migrant rise at 5 per cent per year; and (iii) real remittances fall by 2 per cent per year (reflecting a decline in remittances as the migrant stock ages and the strength of home ties decline). Four migration assumptions are made: (i) migration stops so that the migrant stock remains at its 1989 level; (ii) migration occurs at a rate sufficient to keep the rate of population growth at 0.5 per cent per annum; (iii) migration is half this level; and (iv) the World Bank migration assumption of declining migration holds.

Six scenarios are reported for each country. One is very pessimistic (2 per cent decline in real remittances per year/World Bank migration) and one quite optimistic (5 per cent growth per year in real remittances/continued trend growth in migration).

For Tonga, external balance is preserved under all scenarios except the most pessimistic, a 2 per cent decline in remittances combined with World Bank migration or no increase in migration. Tonga would need about US$28 million per year between 1990 and 1994 and US$35 million per year between 1995 and 1999 to maintain external balance (World Bank 1990:146). This it achieves under most scenarios. If remittances per migrant are only US$700 external balance is preserved until 1995 with no further migration. Further migration achieves balance after 1995.

It is estimated that Western Samoa will require remittances per year of US$44 million in the early 1990s and US$54 million in the late 1990s to preserve external balance (World Bank 1990:220). It cannot achieve this balance unless there is an increase in real remittances per migrant. An increase in migration at the rate needed to maintain the population growth rate at 0.5 per cent per year, shown in Table 5.4, will be insufficient. If remittances per migrant are less than the US$500 estimated or

Table 5.4 **Predicted remittance flows for Tonga and Western Samoa assuming constant or increasing remittances per migrant, 1990-2010 (US$ millions)**

Migration assumption	Remittance assumption: No real increase	Remittance assumption: 5 per cent per year real increase
Tonga		
No increase		
1990	37.3	-
1995	37.3	47.6
2000	37.3	60.8
2005	37.3	77.5
2010	37.3	100.0
Migration to keep population growth at 0.5 per cent per year		
1990	37.3	-
1995	47.3	61.5
2000	60.3	98.3
2005	73.6	152.9
2010	85.0	225.5
Western Samoa		
No increase		
1990	39.9	-
1995	39.9	50.9
2000	39.9	65.0
2005	39.9	82.9
2010	39.9	105.9
Migration to keep population growth at 0.5 per cent per year		
1990	39.9	-
1995	49.0	62.5
2000	59.6	97.0
2005	70.6	146.6
2010	80.9	214.6

Source: Calculated by the author.

migration falls below the rate predicted, it will be even harder to maintain external balance by relying on remittances. Under declining migration and/or declining remittances per migrant, Western Samoa has very large external shortfalls.

It is prudent to emphasize the uncertainty that surrounds forecasts of migration and remittances. In both countries real remittances grew at 10 per cent per year in the early 1980s. In Western Samoa the rate slowed to around 5 per cent in the late 1980s and dropped to - 4 per cent in Tonga. Both countries need to

Table 5.5 **Predicted remittance flows for Tonga and Western Samoa assuming declining remittances per migrant, 1990-2010** (US$ million)

	2 per cent per annum decline in real remittances per migrant and	
	World Bank migration assumption	50 per cent of Table 5.3 migration
Tonga		
1990	37.3	37.3
1995	36.9	41.1
2000	35.6	42.5
2005	33.2	43.3
2010	30.6	43.0
Western Samoa		
1990	39.9	39.9
1995	40.6	40.2
2000	39.2	40.6
2005	36.1	40.8
2010	32.7	40.3

Source: Calculated by the author.

monitor migration and remittance flows closely in the early 1990s to judge which of the scenarios outlined above seems to be unfolding. For Western Samoa the outlook shows cause for concern. For Tonga the outlook is more optimistic.

The future of migration depends upon the immigration policies of the host countries, the economic health of the host countries and the ability of Tonga and Western Samoa to equip their citizens with the human capital to win selection in the immigration points schemes of host countries. All of these factors are problematic and may result in future migration being lower than the historical rate, perhaps near 50 per cent of the rate needed to maintain population growth at 0.5 per cent per annum. In this case population growth will rise above the recent rate and force the governments to pursue a more active family planning policy.

The future of remittances is even harder to predict as it depends on both the continued migration of individuals and the continuation of remittances from them to those at home. The latter is determined by the strength of the ties between those who have migrated and those who have not. Perhaps the most likely assumption is no growth in real remittances per migrant.

CHAPTER 6

Policy options

This final chapter is concerned with policy. The first section reviews the experience of countries which have tried to influence remittance flows and uses. The second section raises a broad spectrum of policy issues which Tonga, Western Samoa and other labour exporting countries should consider in order to maximize benefits from remittances and minimize adverse effects.

Public policy experience in influencing remittance flows and uses

Neither Tonga nor Western Samoa have been very active in trying to affect the flows of migrants or remittances. Relatively few countries have tried and even fewer have been successful. Table 6.1 shows the policies that seven Asian nations have used. Most are designed to facilitate migration and protect migrants. Few are designed to increase remittances and those that do generally specify mandatory repatriation targets that are inconsistent with the democratic ideals of the Pacific.

Several countries set requirements on the percentage of earnings to be remitted.The Republic of Korea and China set 80 per cent, Philippines 50–70 per cent, and Bangladesh 25 per cent. Pakistan and the Philippines require the opening of a bank account as a condition of obtaining a labour contract. In countries where contract labour was government controlled (China) or managed by large construction firms (Republic of Korea) it was easy to monitor repatriation of earnings. Where employment control was more diffuse, as in the Philippines, repatriation was well below mandated levels.

Yugoslavia, Turkey, Greece, Bangladesh, Pakistan and India allowed remittances to be held in foreign exchange accounts in the home country. Interest was often paid in foreign exchange at a rate comparable to or above that available on local currency accounts (with the central bank compensating commercial banks when the exchange rate depreciated), and conversion to local currency was at a special rate in some countries. These countries also granted account holders all or some of the following: preferential treatment on imports, loans for construction and investments, and a higher exchange rate on remitted earnings. Egypt and Jordan allowed remitters to subscribe to development bonds on favourable

Table 6.1 **Measures taken by seven Asian governments to promote and regulate overseas migrant labour**

Area of government intervention	Bangladesh	India	Pakistan	Sri Lanka	Republic of Korea	Philip--pines	Thailand
Recruitment and placement							
Emigration clearance to leave country	x	x	x			x	
Ban/restriction on direct hiring		x	x		x	x	
Minimum standards for work contracts	x	x	x	x		x	x
License/regulation of private recruiters	x	x	x	x		x	x
Operation of recruitment agency by state	x	x	x		x	x	x
Security bond requirement	x	x	x	x		x	x
Ban/limit recruitment fee charges to worker	x	x	x	x		x	x
Contribution to welfare fund			x			x	
Restriction on passport issue					x	x	
Regulation of job advertising	x		x	x			
Trade test requirement	x				x		
Restriction on selected occupations	x				x	x	
No objection certificate requirement	x		x				
Compulsory service in country before departure	x					x	
Ban on female domestic workers	x		x			x	
Specification of transport carrier				x			
Periodic inspection of recruitment establishment	x		x			x	
Pre-departure briefing		x	x			x	
Market development							
Labour attache program	x	x	x	x	x	x	x
Negotiation of supply agreements	x		x			x	
State-subsidised skill							
Settlement of claims/disputes							
Conciliation/adjudication machinery at worksite or on return					x	x	
Labour attache assistance	x			x	x	x	x
Fund to cover unpaid claims	x	x	x			x	x
Repatriation of earnings							
Requirement to remit percentage of salary	x				x	x	
Foreign-currency deposits	x	x	x	x		x	x
Incentive to remit							
Duty-free import privilege	x						
Foreign currency denominated bonds	x						
Tax exemption	x	x	x	x		x	x
Welfare program							
Low-cost group insurance for migrant workers			x	x		x	
Legal aid to overseas workers in distress			x			x	
Repatriation assistance			x			x	x
Social welfare services for migrants' families			x			x	
Housing program	x		x				
Education facilities			x				

Source: International Labour Organization (ILO), *Overseas Employment Policies and Procedures in East Asian Countries*, Bangkok, 1984.

terms, and Bangladesh, Pakistan and India also attempted to attract remittances into development bonds.

Swamy (1981) concluded that the schemes in Greece, Yugoslavia and Turkey had no significant impact on the total flow of remittances and that the growth of deposits in Yugoslavia and Greece resulted from the substitution of special accounts for domestic accounts. Chandavarka (1980) reported that the policies in India had some success in attracting remittances. Turkey assisted by the German government, established a moderately successful scheme to form companies owned by overseas Turkish workers. An earlier scheme to develop village cooperatives, whose members were given preference for migration, was not successful. Overall, the schemes in Turkey made only a minor contribution to industrial development (Straubhaar 1985:91).

The United States, the Philippines and Mexico have attempted to directly tax the income earned by their nationals resident abroad. The schemes were not designed as an attempt to capture remittances but have the characteristics of such a scheme. Such schemes are notoriously difficult to establish since they involve considerable cooperation on the part of host country tax authorities and are easily avoided by residents declaring zero income or taking out host country citizenship (Bhagwati 1976; Bhagwati and Wilson 1989). The Philippines' experience (Pomp 1989) was so discouraging that its initial scheme was scrapped in favour of collecting a low fixed percentage of income (1 per cent of income to $6000, 2 per cent for income between $6000 and $20,000 and 3 per cent for income above this). The initial scheme linked renewal of a passport to payment of tax owed but avoidance led to decreased visits home and a corresponding loss of foreign exchange. Policy makers believe that the benefits of the new 1-2-3 scheme exceed its costs. Since there are no avoidance penalties receipts from the scheme are seen as a windfall.

In Tonga several schemes designed to attract remittances are being discussed. The Treasury plans to set up a 'lotto' primarily aimed at Tongans overseas, especially in the United States. The plan is for tickets of $10–$20 and a prize of $1 million. The Bank of Tonga has introduced 'Return to Tonga' savings accounts in Tonga to capture remittances. These accounts are similar to existing accounts and will probably only appeal to those who already hold ordinary accounts or who want more control over existing remittances. Thus a substitution of accounts rather than an increase in remittances is likely. Both Tonga and Western Samoa have attempted to attract remittances with the sale of development bonds but with very little success.

The experience of other countries shows that governments have been most successful in facilitating migration through regulations designed to protect migrants from unscrupulous agents. In this way the government reduces the cost of migration by reducing its risk. When the government tries to attract remittances into 'development channels' it is generally unsuccessful. It seems that the main cause of failure is that home investments almost always have lower rates of return than host country investments, even when

these investments are bank accounts. When a special policy of the government appears to work, upon closer inspection the remittances have merely been diverted from another home country channel. A possible exception is the introduction of a simple surtax scheme (such as 5 per cent of income) along the lines of that used by the Philippines.

Such a surtax scheme should be considered carefully since a significant remittance tax elasticity could reduce remittances (Bhagwati and Wilson 1989:16).

Perhaps the best the home country can do is to create a good macroeconomic environment where domestic investment opportunities can develop. Such an environment is supportive rather than regulative. Political stability also seems to be important if funds are to flow to the home country.

Issues for policy makers

The cumulative effect on Tonga and Western Samoa of the adverse effects of remittances and a regulatory rather than supportive policy has been relatively slow growth: in the 1980s real GDP growth in Tonga was 4 per cent and in Western Samoa 0.4 per cent. By contrast comparable countries in the Caribbean grew at 5 per cent per annum and countries in the Indian Ocean grew at 7 per cent per annum. The projections of remittance flows show that remittances will not provide a basis for growth in the real standard of living. If migration slows and population growth is not contained the standard of living will fall. Thus government policy should focus on the promotion of growth and the creation of an environment in which remittances can lead to self-sustaining economic growth. Specific policy concerns are discussed below.

Maintenance of macroeconomic stability

Research on remittance flows has shown that remittances and investment are sensitive to policy and political uncertainty. The fiscal deficit should be accommodated in a non-inflationary manner. Growth in the administrative budget should be restrained, and an undistorted incentive scheme for the private and public sector is needed.

Increasing international competitiveness—exchange rate

Remittances lead to an 'overvalued' exchange rate and may partly explain the relatively poor performance of manufactured exports. An overvalued exchange rate may also retard growth in tourism. The exchange rate has been viewed only as a means to restore price stability. Given the importance of the booming sector effects discussed above, the use of the exchange rate as a tool to increase external competitiveness needs to be examined. Another policy tool to assist in increasing international competitiveness is payment of subsidies and provision of other incentives to the export sector. These measures have been successful in a number of small island nations.

Increasing international competitiveness—wages
Migration, remittances and aid lead to higher real wages. This undermines the competitiveness of the export sector. Wages should be responsive to demand and supply, and wage increases should be determined by increases in productivity. This also needs to be the case in the public sector so that it does not draw labour from the private sector. Wage flexibility will assist Tonga and Western Samoa to retain skilled labour and may entice emigrants to return. Wage moderation and flexibility will lead to greater employment and increase external competitiveness.

Increasing investment and financialization of remittances
Remittances and investment would be encouraged by extension and deregulation of the financial system. This would involve the deregulation of bank lending and deposit rates and the creation of new monetary instruments. Remittances are more likely to flow through the banking system if branches exist in areas other than the capital cities and if fixed charges are lower. Deregulating interest rates would increase incentives for financial intermediation, help financialize remittances and decrease the amount of remittances held overseas, and increase the availability of funds for private investment. The government may want to encourage the establishment of foreign exchange accounts with interest also paid in foreign exchange in an effort to attract remittances. These accounts should be monitored to ensure that they are attracting net new accounts and are not just a substitution for other accounts.

Attracting remittances—privatization
It is very difficult for the government to affect directly the flow of remittances. Various policies have been tried with little apparent success. Often the problem is the lack of profitable investment opportunities to attract remittances. The privatization of public enterprises may provide investment opportunities. A number of different policies could be pursued: outright sale of government enterprises, the sale of shares in the enterprises, joint ventures, management contracts or leases. To encourage competition, prices of goods and services provided by government enterprises should be set to cover all operating and investment costs. Otherwise private ventures will be at a competitive disadvantage.

Attracting remittances—fostering contact with migrants
Migrants are the largest market for the export of traditional foodstuffs and handicrafts. The returns from these crops and products are high and they are one of the few promising potential markets for agricultural exports. Information on the residential concentration of island-born communities overseas could help expand the market for these crops and products. This knowledge can also be used to foster communication between migrants and those at home. In this way the likelihood of remitting is increased. Communication can be fostered by modern telecommunications and transportation links. Support for the marketing of traditional products to overseas communities, not just of Tongans

and Western Samoans but also of Fijians, American Samoans, and other Pacific island groups, will also foster contact with migrants. Links with home can also be reinforced by encouraging overseas visits by cultural groups and encouraging tourism among overseas Tongans and Samoans, including the second and higher-order generations. In this way the likelihood of remittance payments declining may be countered.

Increasing revenues—taxation

The taxing of remittances needs attention. If remittances are viewed as regular income they should be taxed accordingly. Although remittances probably should be taxed like business returns (labour is an export) this is probably too difficult in practice. Tax receipts from remittances are thought to be low because of avoidance. Improved taxation administration and collection may help but continued tax reform, in particular the development of consumption taxes, should be pursued. Because of the rise in in-kind remittances, the extension of goods and services taxes to all traders and the licensing of traders (formal and informal) may increase tax revenues.

Increasing revenues—import/export valuation

Because of the growth of in-kind remittances and trade links among family members the possibility that invoice prices of imports and exports are below true value has grown. Closer monitoring of the valuation of traded goods would probably be cost effective.

Increasing investment—the church

It appears that a large proportion of remittances flow to the church and are used largely to fund building projects that fuel inflationary pressures. An analysis of the economic role of the church is desirable, in particular the use to which the church puts its funds. The church could be encouraged to play a greater role in development.

Establishing a solid information base

The information base on migration and remittances needs to be improved. There is relatively little information on migration flows, particularly in Tonga. At the very least Tonga and Western Samoa should adopt a system of entry and exit cards which also collect information on the human capital of the individual, their demographic information and dates of previous entry and exit. There is no information from household surveys on the receipt and use of remittances in Western Samoa and only the 1984 survey in Tonga. Household surveys should be carried out, ideally interviewing individuals in the home and host country, or at least collecting information on both the remitter and the receiver. Surveys would also provide information on the extent of return migration and the acquisition and use of skills acquired overseas.

Self-sustaining economic growth

Much of the discussion in this paper has stressed the need to develop sources of income in addition to migrant remittances and to offset some of the distortionary effects of remittances and aid. But are there industries that offer potential for growth? The answer is yes and the role for the government is to create a supportive economic and political environment for private initiative, not to pick the likely future 'winning' industries. It appears that possible growth sectors include tourism, fisheries, high return traditional food crops, timber in Western Samoa, and manufactured exports, possibly garments. Small isolated island nations in the Indian Ocean have grown rapidly through developing these sectors, as has the Cook Islands in the Pacific. With the appropriate policies remittances could be channelled into investment in these sectors.

APPENDIX 1

The 1984 Tonga Household Income and Expenditure Survey

The 1984 Tonga Household Income and Expenditure Survey was a 1 in 16 stratified random sample of households in Tonga carried out by the Statistics Department, Government of Tonga. The sample size was 777 households of which 580 were used in this analysis. Only households on Tongatapu were included in this analysis. Of the 580 households 90 per cent were recipients of remittances. A preliminary comparison of the data showed that recipient households were larger than non-recipient households, were more likely to have zero or four or more income earners, were less likely to be urban, were more likely to have older members, and had a somewhat lower income than non-recipient households. The income data for the sample is shown in Table A1.1 and the distribution of remittances by size of remittance in Table A1.2. Average remittances were 28 per cent of total household income (excluding remittances).

Table A1.1 **Mean income of households by type of income, Tonga, 1984**

	Total sample	Recipients only
Total income less remittances	5220	5147
	(4110)	(4079)
Total market income less remittances	2829	2728
	(3145)	(3081)
Non-market income less remittances	2391	2419
	(1818)	(1836)
Transfer income (incl. remittances)	1473	1637
	(1830)	(1859)
Total income less remittances per adult equivalent unit[a]	1155	1116
	(913)	(890)
Remittance per adult equivalent unit	355	395
	(694)	(721)

[a]Since the consumption needs of adults and children differ, additional adults and children receive less weight than the householder. The weighted sum of individuals in the household is the number of adult equivalent units.

In preliminary regression analysis (probit) the probability of receiving remittances was significantly lower for households with higher income but the amount received was higher (tobit). Further analysis of the data using sample selection is planned.

Table A1.2 **Distribution of remittances among receiving households, Tonga, 1984**

	Number of households	Percentage
$0.01 to $500	157	30
$500.01 to $1000	100	19
$1000.01 to $2500	157	30
$2500.01 to $5000	76	15
$5000.01 to $7500	24	5
$7500.01 to $10,000	4	1
$10,000+	4	1

Source: Calculated from the 1984 Tonga Household Income and Expenditure Survey.

APPENDIX 2

Estimates of remittances and their effects on labour force participation in American Samoa

In this study the value of remittances and their effects on labour force participation rates of individuals in American Samoa are estimated. The presumption is that these will indicate something about the likely effects in Western Samoa and, possibly, Tonga (the 1984 Tonga Survey has not yet been analysed in detail).

The data sets used are two household surveys carried out in American Samoa in 1985 and 1988. The data were supplied by Vai Filiga, Department of Statistics, Government of American Samoa, and Michael Levin, US Bureau of the Census. The data are described in detail in Filiga and Levin (n.d. and 1989). The 1985 survey was a 20 per cent random sample of all households on Tutuila, on which 95 per cent of the population lives. All persons in the household were interviewed (n=6,434). The focus of the survey was social, economic, and demographic data. The 1988 survey was a 10 per cent random sample designed principally to gather data on labour force participation and household expenditures (household n=427).

Estimates of the incidence and value of remittances sent and received in 1985 are presented in Table A2.1. The 1988 estimates are shown in Table A2.2. They are discussed in the text. In studies of the determinants of remittances either the sending or the receipt of remittances are modelled. In the 1985 data a higher probability of sending remittances was positively associated with wages, age, being born in Western Samoa, being born in Tonga, being Asian or Caucasian. The receipt of remittances was positively related to age, the receipt of social security benefits, and being Caucasian. It was negatively related to education and being a male. The probability of receipt of remittances was unrelated to wage income. The 1988 survey provided less demographic and economic information. The sending of remittances was positively related to being male and negatively related to the number of dependents in the household. The receipt of remittances was only significantly related to age of household head (positively). From the data presented here it appears that, at least in the Pacific where bi-directional flows seem to be important, remittance models should be estimated as bivariate probits. Further work on modelling remittances is being done.

Table A2.1a **Value of remittances sent from, and received in, American Samoa, 1985 (US$)**

	Received and sent by whole sample						
	Sent			Received			Number of persons
	Money	Goods	Total	Money	Goods	Total	
Sent	561.9	164.9	726.8				379
Received				720.4	188.8	909.2	190
Sent money or goods only	555.7	153.1	708.8				176
Received money or goods only				693.3	169.6	862.9	87
Sent and received both	578.5	196.3	774.8	743.3	205.1	948.4	103

Source: Calculated from 1985 American Samoa Survey.

Table A2.1b **Value of remittances sent from American Samoa, by birthplace, 1985 (US$)**

	Number of Persons	Money	Goods	Total
Total	379	561.9	164.9	726.8
Western Samoa	182	515.5	168.8	684.3
American or Western Samoa	304	529.4	181.1	710.5
Tonga	9	286.7	70.0	356.7
Sent to Western Samoa	194	466.6	189.6	656.2

Source: Calculated from 1985 American Samoa Survey.

Table A2.1c **Value of remittances received in American Samoa, by birthplace, 1985 (US$)**

	Number of persons	Money	Goods	Total
Total	190	720.4	188.8	909.2
Western Samoa	63	652.2	186.7	838.9
American or Western Samoa	155	667.5	173.4	840.9
Tonga	1	50.0	25.0	75.0
Received from United States	142	602.4	142.9	745.3

Source: Calculated from 1985 American Samoa Survey.

Table A2.2 **Value of remittances sent from, and received in, American Samoa, 1988 (US$)**

	Only receive	Only send	Both	Total
Number of households	15	95	10	120
Value				
Sent		710	1295	670
Received	1523		2339	385

Source: Calculated from 1988 American Samoa Survey.

Labour force participation equations are estimated by logit and are conventional human capital equations with remittance variables added (Table A2.3). In both 1985 and 1988 the receipt of remittances reduces the probability of labour force participation (statistically significant as the 0.08 level in 1985 and 0.03 level in 1988). The sending of remittances increases the probability of labour force participation significantly in both years. In both years males and older individuals are more likely to work. In the 1985 data the receipt of social security benefits reduces the probability of working. More adults in the household increase the probability while more children reduces it. These household structure effects warrant further study. The decision to send remittances and the receipt of remittances have been assumed to be exogenous to the work decision. This assumption is being investigated in ongoing work.

Table A2.3 **Labour force participation regressions**

	1985	1988
Education	0.064	..
	(0.071)	
Education^2	0.001	..
	(0.003)	..
Age	0.290	0.366
	(0.020)**	(0.023)**
Age^2	-0.004**	-0.005
	(0.000)	(0.000)**
Sex	0.774	0.334
	(0.080)**	(0.100)**
Benefits	-0.893	..
	(0.179)**	
Other income	-0.173	..
	(0.058)**	
Send remittances	0.918	1.460
	(0.162)**	(0.301)**
Receive remittances	-3.50	-0.880
	(0.201)+	(0.456)*
Household size	-0.005	-0.023
	(0.009)	(0.012)*
Ethnicity included		
Intercept	-5.739	-0.907
	(0.561)**	(0.181)**
N	3246	1767
Likelihood	3496**	

Note: +, *, ** signify significance at the 0.1, 0.05, and 0.01 levels. Asymptotic standard errors are in parentheses. Participation rate is for individuals 16-70 years of age. A set of ethnicity dummies were added to 1985 figures. None were significant.

Source: Calculated from the 1985 and 1988 American Samoa Surveys.

APPENDIX 3

Sensitivity of remittances to economic fluctuations in host countries

To test the proposition that remittance flows are sensitive to economic fluctuations in the host countries, annual remittances to Western Samoa from 1965–89 were regressed on a trend (for migration flows) and unemployment rates in Australia and the United States. The trend was positive and significant and the unemployment rate negative and significant. The high R^2 and low Durbin-Watson statistic indicate the possibility of mis-specification (Granger and Newbold 1974). When the equation was re-run in first-differences the trend was significant but the unemployment variable was not.

Data on monthly remittances from Australia, New Zealand and the United States to Tonga for December 1987 to December 1990 were also obtained. When remittances from Australia to Tonga are regressed on the Australian unemployment rate the coefficient on unemployment is negative and significant for the period December 1987 to July 1990. When more observations are added unemployment is no longer significant. For the United States, remittances are not sensitive to the overall unemployment rate but they are negatively related to the unemployment rate for non-Caucasians (at the 0.1 level). This is consistent with suggestions that Pacific islanders may be over-represented in the 'secondary' labour market. In New Zealand, remittances were significantly negatively related to the unemployment rate. The absolute effect of a one percentage point increase in unemployment on monthly remittances is P$162,000 from the United States, P$122,000 from Australia and P$51,000 from New Zealand. It appears that the effect of unemployment rate variations is felt only in the month in which it occurs. That is, there are no lagged effects.

When the equations for monthly remittances are estimated in first differences the effect of unemployment is negative but not significant at traditional levels (it is significant at around the 0.1–0.2 level). Estimation of the model in levels and first differences is not always equivalent and is unlikely to be so in the present case. Maeshiro and Vali (1988) have shown that using a first-differenced model under inappropriate conditions leads to severe loss of efficiency. There is more work needed on the effects of economic conditions in host countries on remittances to Pacific countries and particular attention needs to be paid to the correct specification of the model.

Table A3.1 **Regressions of annual remittances to Western Samoa, 1965-89**

	Levels	First difference
US unemployment rate for non-Caucasians	-3.940 (0.837)**	-0.559 (0.635)
Trend	4.590 (0.400)**	
Intercept	9.738 (7.710)	3.638 (1.054)**
R^2	0.876	0.034
Durban-Watson	0.597	1.515
Sample period	1965-89	1966-89

**Indicates significance at the 0.01 level. Standard error is in parentheses.
Source: Calculated by the author.

Table A3.2 **Regressions of monthly remittances to Tonga on host country unemployment rates, 1987-90**

	United States	Australia	New Zealand
UR	-0.162 (0.092)$^{+}$	-0.122 (0.033)**	-0.051 (0.022)*
DUM1	0.515 (0.143)**	0.211 (0.070)**	0.247 (0.077)**
DUM2	1.168 (0.349)**	0.678 (0.144)**	0.102 (0.161)
Intercept	3.329 (1.058)**	1.524 (0.224)**	1.116 (0.190)**
R^2	0.407	0.599	0.286
Durban-Watson	1.862	1.462	2.126
F	9.255**	16.456**	5.142**
Sample period	Dec 1987- Dec 1990	Dec 1987- July 1990	Dec 1987- July 1990

Note: $^{+}$, *, ** indicate statistical significance at the 0.1, 0.5 and 0.01 levels respectively; DUM1 = 1 in 1989:5 and Dum2 = 1 in 1990:5.
Source: Calculated by the author.

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The economies of Tonga and Western Samoa are heavily dependent on worker remittances and their economic impacts, specifically their impacts on productive capacity, labour supply, income distribution, and their distortionary effects on the economy. Forecasts of future migration and remittances are presented and public policy options to influence and manage flows are discussed.

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