Consumption and investments from migrants' remittances in the South Pacific

by

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THE SOUTH PACIFIC
by R.P.C. Brown

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Foreword

The study that follows has been elaborated under the auspices of several UNDP-financed ILO activities on international migration in various parts of Asia. In 1992 the UNDP commissioned the ILO to provide assistance to several governments in the South Pacific in formulating policies and strategies for mobilizing migrants' remittances for investments. Migration to the metropolitan centres in Australia or New Zealand looms large in the demography of the region. In many countries, large sections of the population depend on remittances for their income which development authorities perceive to go largely into consumption. High levels of migration over the past two to three decades have led to progressive dependence on remittances which today account for a quarter to a third of Gross National Product, but increasing worries about immigration in countries of employment have raised the possibility of their eventual decline and put in question the sustainability of the growth of these island economies and their standards of living.

This paper brings together the major findings from the studies of migrants' remittances in Tonga and Western Samao which enquired into the amounts, forms, channels, determinants, uses and impacts of remittances. From the micro-level data generated from these surveys Dr. Richard Brown was able to make more accurate estimates of aggregate remittances which he then uses to evaluate conventional assumptions about the real impact of remittances on these island economies. The major contribution of the paper is in pointing out how much larger national savings are in fact because of incomes earned abroad and in suggesting that, contrary to popular assumptions, the growth of these countries may not in fact be constrained by savings. Brown provides empirical evidence to show that there is neither lack of income and savings for investment nor of willingness on the part of those who receive such remittance income to invest in income-generating activities. This has a number of implications for policy. The problem might no longer be defined in terms of providing incentives to attract more remittances from abroad but rather of finding commercially feasible projects in which migrants might be induced to invest.

While the study is based on small island economies in the South Pacific it is relevant to larger countries experiencing significant levels of migration and return flows of remittances. The relatively simple structures of the economies studied in fact proved to be an advantage in uncluttering the analysis and making it easier to see the important relationships that should hold true even in larger, more complex economies.

The information contained in this Paper should be useful for officials inside and outside the ILO and for ILO constituents working with employment, labour market, migration and poverty issues at the country level.

Geneva, Switzerland

October 1994

W. R. Böhning
Chief
Migration for Employment Branch
International Labour Office
1. Introduction

The literature on remittances from international migration is considerable. This paper has a twofold purpose. First, it identifies some of the key issues to have arisen from the burgeoning research on remittances from international migration. Its focus is principally on the Asia-Pacific region since the migration boom to the Middle East from the mid-1970s onwards, but draws also on other country experiences. The paper provides an overview of the findings from this research, a large part of which has been undertaken under the auspices of the ILO, and some of which remain as unpublished reports or internal ILO documents, and hence without widespread accessibility. Second, this paper provides a synthesis of the main findings of a recently completed ILO research program on migration and remittances in the South Pacific region of which the present author was the principal collaborator.¹

The fieldwork and primary data collection and analysis were carried-out over the period December 1992 to July 1994 under a series of UNDP/ILO-funded research projects. Household income and expenditure surveys were conducted among recipients of remittances on two Pacific Islands - Tonga and Western Samoa - and among Pacific Island migrants in one of the main destination countries, Australia. This is probably the first study that attempts to combine primary data collection and analysis on the issue of remittances at both the receiving and sending ends. Moreover, fieldwork at the receiving end included a small survey (in Tonga only) among small traders who were trading principally in goods received as remittances in kind from migrants in Australia, New Zealand and the USA. This paper reports on a broad range of economic issues raised by remittances to these Pacific Islands, which are examined from a comparative perspective and, wherever possible, it identifies their broader significance and policy implications in the context of other remittance-dependent economies in the Asia-Pacific region as a whole.

More specifically, the paper studies the following issues:

(i) official and unofficial remittances: their estimation, determinants and policy significance;
(ii) macroeconomic relationships between remittances and aggregate savings;
(iii) micro-level evidence on uses and effects of remittances on consumption, savings and investment;
(iv) determinants and motivations of remittance levels and propensities;
(v) policies to promote remittances.

¹ This paper was written while the author was a guest of the ILO, Geneva. All those involved are thanked for their assistance and contributions to the writing of this paper, particularly Roger Böhning and Manolo Abella of the Migration for Employment Branch at the ILO. The paper draws heavily on two co-authored research reports prepared for the ILO; Brown and Connell (1993b) and Brown and Walker (1994). The valuable contributions of John Connell, University of Sydney, and Adrian Walker, University of Queensland, to these reports and therefore to this paper are acknowledged with much appreciation. Much of the statistical work reported in both studies was undertaken with the assistance of Adrian Walker.
2. Official and unofficial remittances

2.1. Overview of other studies

Remittances are often equated with the transfers from migrants through the official banking system. There are various reasons why such estimates are likely to be both inaccurate and inconsistently treated in the official statistics put out by the different recipient countries.

Athukorala (1993), in his excellent overview for ILO-ARTEP of statistics on Asian migration and remittances, illustrates very clearly some of the major drawbacks and limitations of the published data, due principally to the inadequacy of remittance recording practices and coverage. As he, and Swamy (1981) in an earlier World Bank *Staff Working Paper* point out, the IMF classification system provided in their balance of payments manual for central bank statisticians specifies a number of categories of current account transactions under which official remittances are to be classified. The category labelled `workers' remittances' is only one of these, which is intended to include only financial transfers of those who have been abroad for more than one year. As there is very often no information available to commercial banks on the length of absence of the migrant, the decision as to which financial transfers to classify as workers' remittances usually remains arbitrary. In many instances remittances, however classified, are grouped together with all other private, unrequited transfers and thus cannot be separated for analytical purposes. Furthermore, in most countries, remittances in kind, even when imported officially and recorded as such in the balance of payments, are not also recorded as private transfers and thus end-up as part of the `errors and omissions'. Additionally, in those situations where migrants are permitted to hold foreign currency accounts, remittances that are transferred into these are often treated as non-residents' balances.

Officially transferred remittances as published in the recipient countries' balance of payments statistics are apt to underestimate the actual level of remittances grossly, not only because of these accounting problems. It has also become widespread practice for migrants to use informal, unofficial means of transferring their remittances. This `leakage' of remittances from the official channels occurs for many reasons and takes different forms. The use of informal channels by the migrant can arise for reasons of financial advantage or simply as a matter of convenience. Where banking and foreign exchange facilities are inadequate, informal non-bank means of transfer may be preferred, even though there may be no direct financial advantage to the remitter. Quibria (1986) and Quibria and Thant (1988) cite the case of Bangladesh where lack of banking facilities and unfamiliarity with banking procedures resulted in widespread use of unofficial channels. In the South Pacific it was found that migrants wishing to remit funds to some of the more remote islands preferred to use the services of one of the large, international retail merchants which have branches in both the sending and receiving countries as this was found to be a more efficient channel than the banks or post office.

There are numerous ways in which remittances may be transferred through informal channels. In some instances the foreign exchange enters the country in the form of cash, perhaps carried by the migrant on a return visit. Saith (1989), for instance notes that in some Asian countries a traveller can carry up to US$10,000 in foreign currency without having to declare it.

Sending or carrying remittances in the form of goods (remittances in kind) - either for personal use by the recipient or for resale in the informal market - may also be the preferred channel when there are significant price differences between the remittance sending and receiving countries. These goods can range from inexpensive consumer non-durables to highly priced goods.
Another important means of transferring funds abroad is through the under-invoicing of exports and over-invoicing of imports. See also Choucri (1986) and Brown (1992a and 1992b) for an extensive analysis of remittances, parallel foreign exchange markets, and capital flight in the context of Sudan, one of the most remittance-dependent sub-Saharan African countries.

As items of `personal baggage' these are not recorded as remittances, or as imports. This practice of sending remittances in kind is widespread among the remittance-dependent economies of the South Pacific (see Ahlburg 1991), on which this paper reports in more detail below.

More commonly, however, informal or `parallel' foreign exchange markets are used when the remittance-receiving country's exchange rate is overvalued, when there are foreign exchange restrictions in place, or simply when the banking system is not well developed or inefficient. Those wanting to buy foreign exchange in such markets may wish to use it to import restricted goods for which they cannot obtain foreign exchange through the official channels; or, for meeting some overseas payments, such as travel, or children's education in excess of the stipulated foreign exchange allowances; or, simply for purposes of holding assets outside their home country - `capital flight'.

In many Asian, Latin American and African countries such parallel foreign exchange markets are fuelled principally by migrants' remittances. Two notable examples in the Asian context are the 'hundi' system used by Bangladeshi, Pakistani and Indian migrants (see Kardar 1992; Kazi 1989; Saith 1992) and the Philippines' 'Money Courier Industry' (see Alburo and Abella 1992; D.I. Abella 1989). In these situations money very often moves in both directions: into the labour-sending country from the migrant, and out on behalf of another economic agent who wants the foreign exchange. In practice, the foreign exchange itself may not actually enter the country.

What are the implications of unrecorded remittances for economic analysis? Some economists suggest that the resulting data problems render the existing data inadequate for economic analysis (Nayyar 1993). It is perhaps understandable that economists concerned with the analysis of the macroeconomic effects of remittances lament the inadequacy of the data. But need this imply that until such time as those responsible for collecting and publishing the official statistics refine their recording practices and coverage no reliable macroeconomic analysis using the existing data sources can, or ought, be undertaken? While there can be no denying that data collection and reporting practices and procedures among labour-exporting and labour-receiving countries need to be improved, to draw such a conclusion would deny the value and potential, for macro-analytical purposes, of the data generated by the substantial

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2 Another important means of transferring funds abroad is through the under-invoicing of exports and over-invoicing of imports.

3 See also Choucri (1986) and Brown (1992a and 1992b) for an extensive analysis of remittances, parallel foreign exchange markets, and capital flight in the context of Sudan, one of the most remittance-dependent sub-Saharan African countries.
number of micro-level, survey-based studies on remittances (official and unofficial) migrants' remittance behaviour, and the uses of remittances.\(^4\)

It is often presumed that micro-level data cannot be used for purposes of macro-level analysis. This is clearly not the case. Survey-based micro-level data has been combined with official data sets to derive adjusted, macro-level time series data in numerous, recent studies of unrecorded remittances and their macroeconomic implications. Indeed, ILO-ARTEP has undertaken a number of studies of remittances among Asian labour-exporting economies which provide estimates of unrecorded remittance flows, and which have then been used to adjust the official time series data.\(^5\) This shows unrecorded remittances as a percentage of total remittances ranging from 13 per cent (Sri Lanka) to 50 per cent (Philippines). In all instances, the adjustments to the official time series data are made on the basis of information obtained on unrecorded remittances from micro-level survey data.\(^6\) These studies include:

(i) Mahmud (1989), who bases his adjustments to Bangladesh's official remittance data on the survey data generated by the Bangladesh Institute of Development Studies which surveyed 368 returned migrants, together with the survey of Rizwanul Islam undertaken for the World Bank (1981), which surveyed 277 recipients of remittances. From this he was able to calculate the level of 'potentially remittable funds' to be compared with the actual level.

(ii) Kazi (1989) also draws on two micro-level studies in making adjusted estimates of Pakistan's remittances; one by Gilani et al. (1981) which estimates the transfer of unrecorded remittances via the hundi system (used by 48 per cent of migrants), hand-carried cash (used by 27 per cent), and remittances in-kind (used by 9 per cent); and the other by ILO-ARTEP (1987) which estimates 43 per cent of total remittances are sent via unofficial channels. Burney (1989), in his macroeconomic analysis of the impact of remittances on savings in Pakistan adjusts the official estimates of remittances with data on unrecorded transfers from the ILO-ARTEP (1987) study.

(iii) Tan and Canlas (1989) in their estimates of unrecorded remittances to the Philippines draw on two surveys to compare 1981 and 1982 official and unofficial transfers, where the former are found to range between only 39 and 45 per cent of total remittances. Another survey for ILO-ARTEP was undertaken by Alburo and Abella (1992), which surveyed returnee migrants and their usage of unofficial channels, estimates that the official data captures only 50 per cent of the total.

(iv) For the Sri Lankan estimates Rodrigo and Jayatissa (1989) follow two procedures for adjusting the official estimates; one which simply removes from the official figures non-migrant private transfers and adds to these estimated remittances in-kind based on the

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\(^4\) The ILO has very recently begun work on a major project one of the objectives of which is to strengthen national capacities in the area of data collection and reporting on migration and remittance flows (ILO 1994).

\(^5\) Athukorala (1993 p.71) has pieced together a useful compilation of data on official and estimated unrecorded remittances for six Asian countries. Most of these are reported in Amjad (1989a). For an example showing how such data can be combined for purposes of undertaking an alternative macroeconomic analysis in the sub-Saharan context where official data are often a lot less reliable, see Brown (1992a and 1992b).

\(^6\) The one exception is the study of migration from Kerala (India) by Nair (1989) which makes no mention of unofficial remittances. However, see Saith (1991 and 1992) on the implications of the 1990 Gulf crisis for Indian migrants and the Indian economy which again provide good illustrations of how micro-level information on unrecorded flows can be usefully combined with macro-level official data for purposes of analysis.
maximum duty free allowances for travellers plus foreign currency deposits held by migrants; and another which uses two micro-level studies by the Sri Lankan Ministry of Plan Implementation and the Marga Institute (see Rodrigo and Jayatissa 1989) which they then also use to adjust the projected official remittances estimates. 

(v) In the case of Thailand, Tingsabadh (1989) draws on no less than four different surveys among returnees to estimate the levels of unrecorded remittances.

The proliferation of these sorts of micro-level studies suggest that where unrecorded forms of transfer are known to be significant there is no shortage of survey data which can be used in a meaningful way to adjust the official estimates. Indeed, it is difficult to perceive how any refinements of the official macroeconomic time series data could be made without such micro-level studies. It was with this objective in mind that the ILO South Pacific migration and remittances studies were initiated.

2.2. South Pacific survey estimates

2.2.1. Introduction

In the context of the remittance-dependent economies of the South Pacific, analysis and longer term forecasts of remittance flows continue to be based on official data, even though it is well known that a substantial and possibly increasing proportion of unrecorded remittances enter these economies through other unofficial channels and in different forms (Ahlburg 1991; Connell 1983 and 1991).

Forsyth's (1992) estimates of remittance flows for the Pacific Forum are based exclusively on the data pertaining to the officially remitted and recorded transactions via the banking system. While it must be acknowledged that in the absence of alternative data Forsyth had no option, it must also be stressed that reliance on such data could well have generated misleading results. He comes to a pessimistic conclusion about the inadequacy of remittance flows in relation to future financing requirements, on the basis of projections to the years 2000 and 2010, using per capita remittance estimates for Tonga and Western Samoa of US$528 and US$426 (for the year 2000) and US$591 and US$469 (for the year 2010). In his analysis it is also assumed that remittances are sent for purposes of family consumption-support, that the migrants’ propensity to remit declines rapidly with length of absence from home, resulting in a long-term 'decay' of total remittances sent.

As noted earlier, studies on remittance-dependence in other regions have shown how it has been possible to combine macro-level time series data with micro-level survey data to refine the quantitative and qualitative analysis of the role of unrecorded international resource flows in the functioning of the labour-exporting economy. One of the main purposes of the set of ILO studies on South Pacific remittances was to gauge the significance of unrecorded remittance flows. It was found that in both Tonga and Western Samoa, where officially recorded migrants' remittances are substantial, unrecorded remittance flows are also a highly significant phenomenon, and cannot be ignored in macroeconomic analysis and policy formulation.

This section reports on the main findings of this research with respect to the forms, channels and magnitudes of remittances in the two countries. The subsequent sections report the main findings of the analysis based on these survey data which are compared with the findings and policy conclusions drawn from orthodox, macro-level analyses.
2.2.2. The surveys

During the period January to September 1993 three sets of surveys were undertaken under the ILO project on ‘Migration and Remittances in the South Pacific’: one among Tongan and Western Samoan households; another among petty traders in the flea-market of Tonga's capital, Nuku'alofa; and, a third among Tongan and Western Samoan migrants living in Brisbane, Australia. The design of the household income and expenditure questionnaires was based on Bilsborrow, Oberai, and Standing (1984), but suitably adapted for international remittance flows and for the specific circumstances of the South Pacific. Apart from the usual demographic details, these covered all sources of income, particularly details of remittances, types of expenditure and savings, and investment. As remittances in the South Pacific, like many other situations, are not confined to money transfers that flow through the formal banking system, questions on all conceivable forms of remittance ‘transfers’ were also included in the survey. Studies on remittance-dependence in other regions have shown how it has been possible to combine macro-level time series data with survey data to refine the quantitative and qualitative analysis of the role of unrecorded resource transfers in the economy (Brown 1992a and 1992b).

One of the main purposes of the ILO studies on South Pacific remittances was to gauge the significance of unrecorded remittance flows. These were: (i) money sent, formally or informally (for example, mailed or hand-carried cash); (ii) goods sent; (iii) money carried by the migrant; (iv) goods carried by the migrant; (v) payments met by the migrant on behalf of a family member; and, (vi) gifts in the form of airfares and ‘board and lodging’ for overseas visits by family or others to visit the migrant.

Table 1 shows the importance of migrant transfers as a source of household income. Overall, 15 per cent of households indicated that remittances were the single most important source of household income. Interestingly, this was true for a higher percentage of Tongan households (18 per cent), than Western Samoan households (13 per cent). Remittances were one of the three...
most important components of household income for 79 per cent of households. In the case of Tonga this was 66 per cent, while for Western Samoa it was 92 per cent of all households.

Table 1. Average household income and transfers (US$)

<table>
<thead>
<tr>
<th></th>
<th>Reported income</th>
<th>Adjusted income</th>
<th>Remittances</th>
<th>Main source*</th>
<th>Major source**</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Per capita</td>
<td>Total</td>
<td>% Adjusted</td>
<td></td>
</tr>
<tr>
<td>Overall sample</td>
<td>5631</td>
<td>836</td>
<td>6535</td>
<td>31.1</td>
<td>15.2</td>
</tr>
<tr>
<td>Tonga</td>
<td>4914</td>
<td>1007</td>
<td>5328</td>
<td>25.9</td>
<td>17.6</td>
</tr>
<tr>
<td>W. Samoa</td>
<td>6348</td>
<td>735</td>
<td>7745</td>
<td>34.6</td>
<td>12.8</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td>5134</td>
<td>728</td>
<td>6190</td>
<td>36.3</td>
<td>15.8</td>
</tr>
<tr>
<td>Urban</td>
<td>6350</td>
<td>1001</td>
<td>7040</td>
<td>24.4</td>
<td>14.3</td>
</tr>
</tbody>
</table>

Tonga

<table>
<thead>
<tr>
<th></th>
<th>Reported income</th>
<th>Adjusted income</th>
<th>Remittances</th>
<th>Main source*</th>
<th>Major source**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural</td>
<td>4169</td>
<td>822</td>
<td>4721</td>
<td>32.8</td>
<td>18.6</td>
</tr>
<tr>
<td>Urban</td>
<td>5832</td>
<td>1257</td>
<td>6064</td>
<td>19.0</td>
<td>16.4</td>
</tr>
</tbody>
</table>

W. Samoa

<table>
<thead>
<tr>
<th></th>
<th>Reported income</th>
<th>Adjusted income</th>
<th>Remittances</th>
<th>Main source*</th>
<th>Major source**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural</td>
<td>5978</td>
<td>681</td>
<td>7438</td>
<td>38.6</td>
<td>13.4</td>
</tr>
<tr>
<td>Urban</td>
<td>6979</td>
<td>831</td>
<td>8194</td>
<td>29.0</td>
<td>11.8</td>
</tr>
</tbody>
</table>

Notes: * 'Main Source' = respondent indicated it was the most important source of income, as % of all households
** 'Major Source' = respondent indicated it was one of three important sources of income, as % of all households

Source: Brown and Connell (1993b)

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8 In other words, a higher percentage of households reported remittances as a major source of income, than households reporting one or more of its members residing overseas. The reason for this apparent anomaly is that there are some households which have no overseas migrants, but which still receive remittance income from other relatives or friends living abroad.
However it must be stressed that the reported ‘transfers from overseas' component of household income understates the actual value of total remittances where the latter are defined to include not only money transfers, but also remittances in kind, and payments made on behalf of the household by the migrant overseas. The reported income data were therefore adjusted by subtracting the reported ‘transfers from overseas', and then adding the total value of remittances derived from the more detailed questions on the different forms of remittances in cash and kind, to produce an ‘adjusted income' estimate for each household.

The adjusted income data are also shown in Table 1. Comparing these with the reported income it can be seen that the adjustments make a significant difference. Adjusted average household income for the whole sample is US$6,535, in comparison with the reported average of US$5,631; that is, 16 per cent higher than the unadjusted reported income. The difference is most marked for Western Samoa, where adjusted average household income is US$7,745, in comparison with the unadjusted reported level of US$6,348; that is, 22 per cent higher. Unless otherwise stated, these adjusted income estimates are used in the remainder of this paper when reporting on household income.

From the data on forms of remittances received (Table 2) it can also be seen that remittances constitute a major part of total household income. Indeed, 80 per cent of all households surveyed received remittances in the form of money transfers from overseas; 67 per cent in the case of Tonga, and 93 per cent in Western Samoa. Average remittance income reported per household (across all households, with and without migrants' remittances as a source of income) amounted to 31 per cent of average household income.

In Tonga, average remittance income reported per household was 26 per cent of total household income, and in Western Samoa, 35 per cent of total household income. 9 It should be noted that the percentage of Tongan households receiving remittances is significantly lower than the 90 per cent reported by Ahlburg (1991) for Tongatapu, Tonga's main island, based on the 1984 Household Income and Expenditure survey. To facilitate comparison with other data and subsequent computations using this data, the estimates of total remittances derived from this survey were computed on four different bases: (a) per remittance receiving household; (b) per surveyed household; (c) per migrant; and, (d) per capita. 10

### 2.2.3. Household receipts of remittances

Tables 2 and 3 provide a breakdown of remittances into: (i) money sent; (ii) money carried; (iii) goods sent or carried personally by the migrant; and, (iv) payments made on behalf of the household by migrants overseas. From these data, it can be seen that although money transfers were the most common form of remittance, they constituted little more than one half only of total remittances received by households.

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9 It needs to be pointed out that the remittance estimates reported here are based on the survey data relating to money and goods, sent and/or carried by the migrants. These should be treated as the most conservative interpretations of the data available. Whenever divergent figures were obtained, the lowest was always used. Not included are the estimates of ‘other transfers' in the form of payments made by the migrant on behalf of the recipient household, such as the costs of travel abroad.

10 ‘Remittance receiving households' are defined as households that reported having received money or goods from relatives living abroad over the previous 12 months.
The substantially higher receipts of remittances by Western Samoan households is due to the much larger average family size and higher average number of migrants per family. Tongan households had, on average, 1.3 migrants in comparison with 3.8 per Western Samoan household (see Brown and Connell 1993b, Table 4.1).

Although the questionnaire did not distinguish between money that was sent via official banking or post-office channels as distinct from that which was sent via unofficial, informal channels, it is reasonable to assume that these data would provide the nearest approximations to the reported (and therefore officially recorded) level of private remittances received by households. As noted, the black market in foreign exchange in these countries is very small, and used only by a small minority of migrants for convenience reasons.

Table 2. Forms of remittances received

<table>
<thead>
<tr>
<th></th>
<th>Money transfers</th>
<th>Money carried</th>
<th>Goods sent/carried</th>
<th>Travel costs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No.</td>
<td>% Total HH</td>
<td>No.</td>
<td>% Receiving Hhs</td>
</tr>
<tr>
<td>Overall sample</td>
<td>401</td>
<td>80.2</td>
<td>227</td>
<td>56.6</td>
</tr>
<tr>
<td>Tonga</td>
<td>168</td>
<td>67.2</td>
<td>41</td>
<td>24.4</td>
</tr>
<tr>
<td>W. Samoa</td>
<td>233</td>
<td>93.2</td>
<td>186</td>
<td>79.8</td>
</tr>
<tr>
<td>Rural</td>
<td>262</td>
<td>88.2</td>
<td>145</td>
<td>55.3</td>
</tr>
<tr>
<td>Urban</td>
<td>139</td>
<td>68.5</td>
<td>82</td>
<td>59.0</td>
</tr>
<tr>
<td>Tonga</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td>111</td>
<td>79.3</td>
<td>22</td>
<td>19.8</td>
</tr>
<tr>
<td>Urban</td>
<td>57</td>
<td>51.8</td>
<td>19</td>
<td>33.3</td>
</tr>
<tr>
<td>W. Samoa</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td>151</td>
<td>96.2</td>
<td>123</td>
<td>81.5</td>
</tr>
<tr>
<td>Urban</td>
<td>82</td>
<td>88.2</td>
<td>63</td>
<td>76.8</td>
</tr>
</tbody>
</table>

Note: HH = household

Source: Brown and Connell (1993b)

The sums of money transferred amounted to US$1,351 per receiving household, which implies an amount of US$1,083 per household across the total sample. In Tonga, the average amount received was US$1,221 implying an average across all households of US$821. In Western Samoa, the average amount received was US$1,444, implying an average across all households of US$1,345. On a per capita basis, this amounts to US$170 for Tonga and US$156 for Western Samoa respectively, and, on a per migrant basis, US$595 for Tonga and US$354 for Western Samoa.12

---

11 The substantially higher receipts of remittances by Western Samoan households is due to the much larger average family size and higher average number of migrants per family. Tongan households had, on average, 1.3 migrants in comparison with 3.8 per Western Samoan household (see Brown and Connell 1993b, Table 4.1).

12 Although the questionnaire did not distinguish between money that was sent via official banking or post-office channels as distinct from that which was sent via unofficial, informal channels, it is reasonable to assume that these data would provide the nearest approximations to the reported (and therefore officially recorded) level of private remittances received by households. As noted, the black market in foreign exchange in these countries is very small, and used only by a small minority of migrants for convenience reasons.
Table 3. Forms and amounts of remittances: Tonga and Western Samoa (US$)

<table>
<thead>
<tr>
<th></th>
<th>Total remittances</th>
<th>Money transfers</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Per RRH</td>
<td>Per HH</td>
<td>Per MR</td>
<td>Per CAP</td>
<td>Per RRH</td>
<td>Per HH</td>
<td>Per MR</td>
<td>Per CAP</td>
</tr>
<tr>
<td>Sample</td>
<td>3,579</td>
<td>2,513</td>
<td>966</td>
<td>374</td>
<td>1,351</td>
<td>1,083</td>
<td>416</td>
<td>161</td>
</tr>
<tr>
<td>Tonga</td>
<td>3,434</td>
<td>1,688</td>
<td>1,239</td>
<td>350</td>
<td>1,221</td>
<td>821</td>
<td>595</td>
<td>170</td>
</tr>
<tr>
<td>Western Samoa</td>
<td>3,823</td>
<td>3,343</td>
<td>875</td>
<td>387</td>
<td>1,444</td>
<td>1,345</td>
<td>354</td>
<td>156</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Money carried</th>
<th>Goods sent/carried</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Per RRH</td>
<td>Per HH</td>
<td>Per MR</td>
<td>Per CAP</td>
<td>Per RRH</td>
<td>Per HH</td>
<td>Per MR</td>
<td>Per CAP</td>
</tr>
<tr>
<td>Sample</td>
<td>428</td>
<td>344</td>
<td>132</td>
<td>51</td>
<td>744</td>
<td>603</td>
<td>232</td>
<td>90</td>
</tr>
<tr>
<td>Tonga</td>
<td>248</td>
<td>172</td>
<td>132</td>
<td>36</td>
<td>564</td>
<td>387</td>
<td>275</td>
<td>80</td>
</tr>
<tr>
<td>Western Samoa</td>
<td>557</td>
<td>519</td>
<td>137</td>
<td>60</td>
<td>874</td>
<td>819</td>
<td>215</td>
<td>95</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Travel costs</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Per RRH</td>
<td>Per HH</td>
<td>Per MR</td>
<td>Per CAP</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sample</td>
<td>1,056</td>
<td>483</td>
<td>186</td>
<td>72</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tonga</td>
<td>1,401</td>
<td>308</td>
<td>237</td>
<td>64</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Western Samoa</td>
<td>948</td>
<td>660</td>
<td>169</td>
<td>76</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes: HH = household  
RRH = remittance-receiving household  
MR = migrant  
CAP = capita household member (unadjusted for age)

Source: Brown and Connell (1993b)

The most important informal means of remitting to these countries consists of transfers in the form of goods sent or the goods and/or the money carried personally by the migrants visits. Of the remittance-receiving households, 57 per cent reported that they had also received money remittances from migrant members of the household on visits to the family from overseas during the last year (see Table 2). The average amount received in this way was US$428 per remittance receiving household, or US$344 across all households in the survey; US$519 per Western Samoan household and US$172 per Tongan household (see Table 3).

The combined average amount of money remittances received by Tongan and Western Samoan households can thus be estimated at US$993 and US$1,865 during 1992, which are derived by adding together ‘Money Transfers' and ‘Money Carried' in Table 3. On a per capita basis, this comes to US$206 for Tonga and US$216 for Western Samoa, which need to be compared with the per capita income estimates of US$1,007 and US$735 per capita income for Tonga and
Western Samoa respectively. (On a *per migrant* basis cash remittances amount to US$716 for Tongan and US$491 for Western Samoan migrants.)

Unrecorded remittances to households do not only take the form of money transfers. The survey results validated the more anecdotal evidence reported in earlier studies about the importance of remittances in kind. In total, 75 per cent of remittance-receiving households (60 per cent of all surveyed households) also reported that they had received goods from overseas migrant household members (see Table 2). Again, the incidence of these unofficial transfers was significantly lower for Tonga (56 per cent of receiving households) than Western Samoa (89 per cent of receiving households). From Table 3 it can be seen that the reported average value of such goods received during 1992 was, in their domestic market values, US$564 for Tongan and US$874 for Western Samoan remittance-receiving households. This implies an average value per household of US$603 for the entire sample; and for Tonga and Western Samoa, US$387 and US$819 per household, respectively. For the overall sample, the average value of unrecorded transfers in cash and in kind comes to US$947 per household; US$559 for Tongan, and US$1,338 for Western Samoan households.

In addition, there are the unrecorded ‘transfers’ which do not actually enter the country, including air-fares and other travel expenses paid by the migrant on behalf of a member of the receiving household. For 75 per cent of the remittance-receiving households (46 per cent of the overall sample) a household member had had such a trip paid for during the previous 12 months (see Table 2). The respondent was required to provide details of the destination, mode of travel and length of stay overseas. Using this information, an approximate value can be placed on this form of transfer. This amounted to US$483 per household for the whole sample, and for Tonga and Western Samoa, US$308 and US$660 per household, respectively (see Table 3).

When these are added to the other cash and in kind unrecorded remittances the total unrecorded flows per sampled household amount to US$1430 for the entire sample, and US$867 and US$1,998 for Tonga and Western Samoa respectively (see Table 4). These should be compared with the estimated official transfers which amounted to US$1083 per household for the entire sample; US$821 and US$1,345 for Tongan and Western Samoan households respectively. Unrecorded remittances are thus estimated to represent 57 per cent of total remittances to Tongan and Western Samoan households; 51 per cent and 60 per cent respectively.

Estimates of unrecorded and official remittances were also made on a *per migrant* basis from the information supplied by the receiving households. Money carried privately, goods in kind and travel costs paid on behalf of recipients amounted to US$550 per migrant for the total sample; US$644 and US$521 for Tongan and Western Samoan migrants respectively (from Table 3). When these unrecorded remittances are added to total cash remittances received by households, estimated remittances *per migrant* sent to the household amount to US$1,239 and US$875, for Tongans and Western Samoans respectively (see Table 5).

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13 These figures are most likely to be underestimates of the actual amounts spent, as it was conservatively assumed that in all cases the lowest possible airfares were paid, and that the total board and lodging cost was only US$20 per person per week.
Table 4. Recorded and unrecorded remittances: Tonga and Western Samoa (all figures in US$ unless otherwise stated)

<table>
<thead>
<tr>
<th>Remittances to households</th>
<th>Other Remittances*</th>
<th>Total Remittances</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rec.</td>
<td>UR</td>
</tr>
<tr>
<td>Total sample</td>
<td>1 083</td>
<td>1 430</td>
</tr>
<tr>
<td>Tonga</td>
<td>821</td>
<td>867</td>
</tr>
<tr>
<td>W. Samoa</td>
<td>1 345</td>
<td>1 998</td>
</tr>
</tbody>
</table>

* Other remittances are remittances sent to other institutions
Notes: HH = household; Rec. = recorded remittances; UR = unrecorded remittances
Source: Derived from Brown and Connell (1993b) and Brown and Walker (1994)

2.2.4. Remittances to other institutions
Survey data from recipient households, even when it is accurate and includes both official and unofficial transfers, will underestimate the total amount of remittances sent. Migrants do not remit only to their families. It is well known that a significant part of remittances in the South Pacific are sent directly to churches and other institutions, such as community organizations, sports clubs, cyclone relief funds, and so on. A large part of such fund-raising is often conducted by the institutions themselves in the various host countries in which the migrants reside. As these funds are not channelled via households, any such remittances sent as money and/or goods would not have been captured by this survey. In addition, migrants do not only remit to other non-household institutions but they also send funds to their own accounts with banks or other financial intermediaries, which are then either accumulated there as financial assets, or, used for the acquisition of other assets, such as housing. The survey data reported thus far excludes all such additional transfers.

In a second survey conducted among the Tongan and Western Samoan migrant community in Brisbane, some nine months after the Pacific Island surveys, the migrants were asked to report on total remittances sent, including those not sent to households. Estimates of total remittances to households per migrant shown in Table 5 were significantly higher in comparison with those obtained from the household survey in the case of Tonga; $1,728 per migrant (compared with US$1,239 from the survey at the receiving end). In the case of Western Samoan migrants, where considerable under-reporting was suspected, estimated remittances per migrant to households amounted to only US$559 (compared with US$875 from the survey at the receiving end).

Transfers to other non-household institutions were estimated at US$315 and US$230 per Tongan and Western Samoan migrant respectively (see Table 5). These amounts represent an additional 18 per cent and 41 per cent of remittances sent to Tongan and Western Samoan households respectively. In view of their nature, it is reasonable to assume that these transfers were made through official channels. If so, the proportion of unrecorded remittances in the total would need to be adjusted downwards. Such an adjustment, while increasing the estimate of total remittances sent, also lowers the estimated proportion of unrecorded remittances in the total to 43 per cent for Tonga, and 42 per cent for Western
See Table 4 in which remittances sent to other, non-household institutions are added to recorded and unrecorded remittances sent to households. These were estimated from the per migrant estimates of remittances to other institutions as a percentage of recorded remittances sent to households shown in Table 5.

Table 5. Remittances per migrant: Tonga and Western Samoa (all figures in US$ unless otherwise stated)

<table>
<thead>
<tr>
<th></th>
<th>Received (HH)</th>
<th>Sent (HH)</th>
<th>Sent Others</th>
<th>Total Sent</th>
<th>Sent Others (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tongans</td>
<td>1,239</td>
<td>1,728</td>
<td>315</td>
<td>2,043</td>
<td>0.18</td>
</tr>
<tr>
<td>Western Samoans</td>
<td>875</td>
<td>559</td>
<td>230</td>
<td>789</td>
<td>0.41</td>
</tr>
</tbody>
</table>

Note: HH = household

Source: Derived from Brown and Connell (1993b) and Brown and Walker (1994)

These would thus represent the most conservative estimates of the relative size of unrecorded remittances.

2.2.5. Comparison with other estimates

How do these compare with other estimates? Tables 6 and 7 compare the findings of this survey with other estimates of remittances to Tonga and Western Samoa. It must be stressed that not all these data are directly comparable, as they do not relate to equivalent measures of remittances.

The figures presented in Table 6 are for money transfers only, and therefore do not include our estimates of unrecorded remittances in kind or payments made on behalf of recipients. Two main conclusions can be drawn from these results. In the case of Tonga the estimate from the ILO survey is 75 per cent more than Forsyth's estimate based on official remittances data, and almost 60 per cent higher than Ahlburg's highest estimate. In the case of Western Samoa, as already noted, under-reporting with the ILO Brisbane survey was strongly suspected. Nevertheless, this estimate (US$627 per migrant) is significantly greater than all others.

The data in Table 7 also show that the value of unrecorded remittances accounts for a substantially greater part of total remittances than has been suggested by other studies. Two estimates are reported here; a 'lower bound' using the most conservative estimates, which assumes that all non-household remittances are transferred officially, and an 'upper bound' which assumes that the proportion of unrecorded remittances to households holds also for total remittances sent. For Tonga, the lower bound estimate of unrecorded remittances amounts to 43 per cent of the total, and the upper-bound 51 per cent. For Western Samoa, the proportions are 42 per cent and 60 per cent respectively. Even the lower-bound estimates are substantially greater than any previous 'guesstimates' reported in the literature, with the exception of Connell's estimate for Tonga in 1980 which is very close to our upper-bound estimate.

The implication of this is that even if the lower bound estimates of unrecorded remittances are used, all other estimates of total remittances to Tonga and Western Samoa significantly understate the actual levels. This includes Forsyth's estimates which appear high on a per migrant basis only because of the low numbers of assumed migrants.

---

14 See table 4 in which remittances sent to other, non-household institutions are added to recorded and unrecorded remittances sent to households. These were estimated from the per migrant estimates of remittances to other institutions as a percentage of recorded remittances sent to households shown in table 5.
Table 6. Estimates of money remittances (US$ per migrant)

<table>
<thead>
<tr>
<th></th>
<th>Tonga</th>
<th>Western Samoa</th>
</tr>
</thead>
<tbody>
<tr>
<td>This study (1992/3)</td>
<td>1,578</td>
<td>627</td>
</tr>
<tr>
<td>Ahlburg (1986)</td>
<td>1,000</td>
<td>450</td>
</tr>
<tr>
<td>Ahlburg (1989)</td>
<td>850</td>
<td>500</td>
</tr>
<tr>
<td>Forsyth (1989)</td>
<td>528</td>
<td>426</td>
</tr>
</tbody>
</table>

Sources: Brown and Connell (1993b); Brown and Walker (1994)

Table 7. Estimates of unrecorded remittances: Tonga and Western Samoa (as % total remittances)

<table>
<thead>
<tr>
<th></th>
<th>Tonga</th>
<th>Western Samoa</th>
</tr>
</thead>
<tbody>
<tr>
<td>ILO study</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- lower bound</td>
<td>34</td>
<td>42</td>
</tr>
<tr>
<td>- upper bound</td>
<td>41</td>
<td>60</td>
</tr>
<tr>
<td>Connell (1980)</td>
<td>40</td>
<td>22</td>
</tr>
<tr>
<td>Loomis (1990)</td>
<td>23</td>
<td>23</td>
</tr>
<tr>
<td>Fuka (1985)</td>
<td>24</td>
<td></td>
</tr>
<tr>
<td>Ahlburg (1991)</td>
<td>23</td>
<td>23</td>
</tr>
</tbody>
</table>


3. Macroeconomic relationships between remittances and savings

3.1 Remittances and aggregate savings rates

From a macroeconomic perspective, remittances sometimes constitute the most important source of foreign exchange. This is true of a number of Asia-Pacific countries, and no less so for Tonga and Western Samoan where remittances are greater than total export earnings. They also constitute a major source of income for private households, and as is often asserted, are used primarily for consumption purposes, and the acquisition of `unproductive' assets particularly real estate. In the recent macroeconomic literature the dependence on remittances is perceived negatively from a longer term growth perspective. As Russell (1986) points out in her overview, the predominant view was negative. Keely and Tran (1989) sum-up the negative view as follows:

Beyond fostering dependency and being unstable, remittances destroy the process of economic development. The litany of complaints includes that remittances are infrequently (at best) invested in capital generating activities or even in job creating enterprises. Rather, they are spent on consumer goods with high import content; consumer goods which increase local demand so that wage levels are pushed up and inflation increases; or unproductive personal investment like housing and land. At the social level remittances are accused of creating envy and eroding work habits (p. 502).
Much attention has been given to the apparent failure of remittances to raise the aggregate savings rates in labour-exporting countries. In his paper for ILO-ARTEP on the macroeconomic impact of remittances Saith (1989) observes: 'one finding which emerges from the national accounts data of several countries is that there appears to have been hardly any effect on the rate of savings and investment at the macro-economic level' (p. 36). For instance, Nayyar (1989) found that the aggregate savings for India during the 1980s did not rise with remittances; Mahmud (1989) refers to a gross domestic savings rate in Bangladesh of a mere 2 per cent of GDP in 1982-83; and Burney (1989) shows that Pakistan's gross domestic savings rate declined from over 10 per cent of GDP in the mid-1970s, to just over 7 per cent in the mid-1980s. In the Philippines Abella (1992) notes that aggregate savings rate declined from approximately 24 per cent in the mid-seventies to 15 per cent in the mid-eighties: 'a period during which recorded remittances have been observed to rise significantly' (p.31).

Yet, as Athukorala (1993) points out, available micro-level studies on the use of remittances in Asian labour exporting countries show that 40 to 60 per cent of remittances are spent on consumption, implying that 40 to 60 per cent must be saved. Amjad's (1989b) overview of the ILO-ARTEP studies supports such estimates of savings. If recipients of remittances are saving such a significant part of their remittances, why then do the macroeconomic, aggregate savings rates not increase with remittances as one would expect? This point is taken up later in this section of the paper.

3.2 Remittances and aggregate savings in the South Pacific

As in the situation of many other remittance-dependent economies, it is generally believed that in the South Pacific, remittances make little contribution to savings and investment. It is commonly postulated that the remittances of migrants are used exclusively for supporting the consumption needs of the recipients, and are spent primarily on imported consumer goods (Miles et al. 1991; World Bank 1991 and 1993; Fairbairn 1991a and 1991b). Ahlburg for instance, contends that '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 primarily for immediate consumption' (1991 p.35).

Conventional wisdom on the remittance-dependent Pacific Island economies thus stresses the role of remittances in family consumption maintenance. Remittance dependence is also believed to induce a need for further migration. This dependency, it, has been suggested, 'feeds on itself' in the sense that it increases the need for further migration. Reichert (1981), in his work on Mexico, conceptualises this in terms of the 'migrant syndrome', in which remittances come to constitute the household's principal source of income, but none of it is invested in the local economy. Mines, also working on remittance-dependence in Mexico, has argued that:

The village has, in effect, become a rest, recreation and retirement centre for successful migrants, and a reproduction centre for future migrants. Although many individuals gain by this process, the village economy remains frozen in its traditional low-productivity system. [own emphasis] (1981 p.59).
Bertram and Watters’ (1985) conceptualization of the remittance- and aid-dependent Pacific Island states as ‘MIRAB economies’ is very similar in postulating an essentially ‘frozen’ domestic economic structure.15

More recently the question of migration and remittances has attracted increasing interest on the part of international and regional organizations. This has resulted in a number of recent studies (Ahlburg 1991; Connell, 1991; Forsyth 1992) that are primarily overviews of the fragmentary literature available on remittances. Like most other observers, they contend that the primary use of remittances has been for consumption, with the remainder being used for house construction, debt repayment and the financing of future migration. This position is exemplified by a recent ILO/UNDP study on employment in Tonga in which it is asserted that:

The unrequited transfers [remittances] … have unfortunately, not helped to bring about a more rapid economic growth of the Tongan economy … The reason is that a major share of private remittances from overseas have been used to enhance the living standard of the average Tongan through imports of consumer goods … [and] no schemes have been in place to promote a larger share to be invested in productive activities. (Miles, et al. 1992 p.11.)

Remittances have thus raised levels of consumption without creating a firm basis within the domestic economy for maintaining them in the future. Indeed, some would argue that as foreign transfers in the form of official aid and private remittances have become more dominant, the lack of investment in productive activities has become more pronounced (Yusuf and Peters 1985 p.12). Assertions of this sort tend to reinforce the view of the ‘migrant syndrome’ and the ‘frozen’ domestic economy. The significance of remittances has also led to concern over the possibility of any future decline, that might be affected by changing migration rates, recession in metropolitan states or other factors (Miles et al. 1992 p.66; Marcus 1993 p.29; James 1991; Campbell 1992).

Economic policy statements from the international donor community often point to the fact that gross domestic savings were even negative throughout the 1980s. In a recent World Bank report on Tonga it was noted that:

Large private remittances and official grant inflows have enhanced consumption and resulted in negative gross domestic savings equivalent to nearly a quarter of GDP. (1983 6 p.3).

In two reports prepared for the Australian government’s International Development Assistance Bureau (AIDAB), remittances and aid flows are perceived as having caused ‘dis-saving’; that is, negative gross domestic savings (see Fairbairn 1991a and 1991b). The AIDAB reports on Western Samoa and Tonga point to the large resource gaps, where the disparity between gross domestic savings and investment is in excess of 30 per cent of GDP. In Western Samoa’s case it is argued that ‘high rates of consumption have prevented any significant saving’ (Fairbairn 1991a p.5). It is similarly argued that, ‘Tonga's poor savings performance can be attributed largely to the private sector, particularly to the prevalence of high rates of personal consumption. The reasons for high personal consumption are believed to be related to high

15 Bertram and Watters use the acronym MIRAB as shorthand for ‘Migration-Remittances-Aid-Bureaucracy’, the combined effect of which, they contend, ‘determines the evolution of the system’ (1985 p.497).
levels of personal transfers, cultural factors that tend to weaken the savings motive, and low per capita incomes (Fairbairn 1991b p.31).

### 3.3 Savings and national accounting conventions

How can the apparent paradox of high savings rates at the micro-economic level while macroeconomic data show a negative relationship between remittances and aggregate savings be explained? As discussed extensively in earlier economics literature on the foreign aid and savings debate a negative relationship was often observed between foreign aid and aggregate domestic savings rates. It was shown then that this can be explained as an anomaly attributable to the accounting procedures used to estimate domestic savings, and need not convey any significance in relation to savings behaviour in the public or private sectors of the recipient country. This point has been made in the past in the context of the foreign aid-savings debate, most notably by Papanek (1972) and re-iterated more recently in the analysis of the macroeconomic impact of remittances in Asia (see Amjad 1986; Burney 1987 and 1989; and Athukorala 1993).

In the economics literature on the South Pacific the confusion seems to remain. It arises essentially from a misinterpretation of national accounting identities and concepts, and particularly of how the aggregates are estimated in practice. This applies especially where there are sizeable foreign exchange transfers such as private remittances. In situations where a significant part of household income is earned abroad, there will be a substantial difference between domestic and national income.

In national income accounts, because of the residual method of estimating savings, all net factor income from abroad (NFI), including remittances, is treated as an addition to total savings. This does not mean that remittances are assumed to be totally saved. Of course households consume and save out of their combined income from domestic and external sources. It is simply an accounting convention to deduct total consumption from domestic income when estimating domestic savings, and then to add external transfer income to arrive at total (‘national’) income and total (‘national’) savings.

This is certainly true of Western Samoa and Tonga where the official private transfers from abroad amount to approximately one-quarter to more than one-third of GDP respectively (see Table 8). As noted earlier, the macroeconomic data for Tonga and Western Samoa in Table 8 show that domestic consumption expenditure is substantially greater than GDP. This implies a negative domestic savings rate. From a national income (GNP) perspective, the picture is therefore somewhat different. Savings are positive and the savings-investment gap much smaller than Fairbairn (1991a and 1991b), the World Bank (1991 and 1993) and others have suggested.

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16 For good example of a poorly substantiated, sociological perspective on savings behaviour among Western Samoans, see the World Bank Staff Working Paper of Yusuf and Peters (1985) which is commonly cited in the literature as ‘evidence’ of the savings constraint to investment and growth in Western Samoa.

17 Alternatively, gross domestic savings can be estimated indirectly by subtracting the external resource balance (imports less exports) from domestic investment. See Amjad (1986) and Athukorala (1993) for useful discussions of the treatment of workers’ remittances in national income accounting. See also Papanek (1972).
In practice consumption expenditure is made from total household income, irrespective of its source. In a closed economy, if total consumption exceeds total income, consumers would have to be running-down their accumulated savings balances: ‘dis-saving’. But, in an open economy where net factor income (NFI), such as private remittances, is positive, indirectly estimated domestic savings takes on a different meaning. It would be committing a gross error to conclude from data showing trends in the composition of GDP, that remittances and other transfers caused excessive consumption and negative savings in any behavioural sense. Irrespective of the extent to which remittances are used by their recipients for consumption purposes and how much is saved, any increase in aggregate consumption out of net transfers will yield a lower level of domestic savings when these ex-post accounting identities are estimated using the residual method. This would be the case even if a large part of remittances is actually saved.

As it is the convention in national income accounting to treat savings as the residual, net private transfers, by definition, have to be treated as ‘additions’ to savings. It also follows, by definition, that where net factor income from abroad constitutes a sizeable part of total (national) income, no significance can be given to a very low or negative value for domestic savings rate. Indeed, in such situations it makes little sense to present and analyse macroeconomic parameters and indicators where these are expressed as a percentage of GDP. The relevant concept and measure becomes GNP.

Macroeconomic analysis of Tonga and Western Samoa illustrates very clearly the fallaciousness of the conclusions that have been drawn about households' savings behaviour from use of domestic rather than national aggregate savings estimates. In Table 8 the main components of domestic and national product by expenditure are given for the most recent years for which data are available. These are averaged over two sub-periods over the last decade, and are expressed as a percentage of both GDP and GNP.

Looking first at the Western Samoan data, it can be seen that domestic consumption expenditure is substantially greater than domestic income and has risen from 104 to 107 per cent of GDP. This implies a negative domestic savings rate, which fell from negative 4 to negative 7 per cent of GDP between the two periods. Investment on the other hand increased from 24 to 34 per cent of GDP. This meant that the investment-savings gap, in terms of domestic savings, increased from 28 to 41 per cent of GDP. In Tonga's case the situation is very similar. Although it does not seem to have `deteriorated' between the two time periods considered, its investment-domestic savings gap is even greater, at 47 per cent of GDP.

However, in both cases, net private transfers are substantial. Between the two periods they increased from 18 to 28 per cent of GDP in Western Samoa's case, and remained at around 40 per cent in Tonga's case. From a national income perspective the investment-savings gap situation appears to be quite different. In the lower half of Table 8 these aggregates are expressed as a percentage of gross national product (GNP). In the most recent period, consumption averaged around 83 per cent of GNP for both countries, implying positive national savings equal to 16 to 17 per cent of GNP. If the investment-savings gap is re-measured in terms of gross national savings, and expressed as a proportion of GNP, the situation does not appear nearly as unsatisfactory as it did before. In Western Samoa's case, the investment-savings gap is much lower at 8 to 10 per cent of GNP, and in Tonga's case it is only 4 to 7 per cent of GNP.

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18 It is assumed here that net private transfers are the only source of net factor income from abroad.
Burney (1989) argues that in favour of the adoption of an alternative method of estimating aggregate domestic savings. He recommends that estimated consumption out of remittances be added to gross domestic savings as conventionally estimated, and applies this to Pakistan's time series data to derive adjusted savings estimates.

Table 8. Composition of GDP and GNP by expenditure: Tonga and Western Samoa

<table>
<thead>
<tr>
<th></th>
<th>W. Samoa</th>
<th></th>
<th>Tonga</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP</td>
<td></td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Trade balance (X-M)</td>
<td>-27.5</td>
<td>-40.6</td>
<td>-47.2</td>
<td>-46.7</td>
</tr>
<tr>
<td>Investment</td>
<td></td>
<td>23.9</td>
<td>33.9</td>
<td>34.1</td>
</tr>
<tr>
<td>- private</td>
<td></td>
<td>4.1</td>
<td>4.4</td>
<td>23.8</td>
</tr>
<tr>
<td>- government</td>
<td></td>
<td>19.8</td>
<td>29.5</td>
<td>10.3</td>
</tr>
<tr>
<td>Consumption</td>
<td></td>
<td>103.6</td>
<td>106.7</td>
<td>113.1</td>
</tr>
<tr>
<td>- private</td>
<td></td>
<td>91.3</td>
<td>87.5</td>
<td>-</td>
</tr>
<tr>
<td>- government</td>
<td></td>
<td>12.3</td>
<td>19.3</td>
<td>-</td>
</tr>
<tr>
<td>Domestic savings</td>
<td></td>
<td>-3.6</td>
<td>-6.7</td>
<td>-13.1</td>
</tr>
<tr>
<td>Net private transfers</td>
<td>18.1</td>
<td>27.6</td>
<td>40.7</td>
<td>37.2</td>
</tr>
<tr>
<td>GNP</td>
<td></td>
<td>118.1</td>
<td>127.6</td>
<td>140.7</td>
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<tr>
<td>National savings</td>
<td></td>
<td>14.5</td>
<td>20.8</td>
<td>27.6</td>
</tr>
<tr>
<td>Savings gap (I-S)</td>
<td></td>
<td>27.6</td>
<td>40.6</td>
<td>47.2</td>
</tr>
<tr>
<td></td>
<td>% GNP</td>
<td>1982-86</td>
<td>1987-92</td>
<td>1984-86</td>
</tr>
<tr>
<td>GDP</td>
<td></td>
<td>84.7</td>
<td>78.4</td>
<td>71.1</td>
</tr>
<tr>
<td>Trade balance (X-M)</td>
<td>-23.3</td>
<td>-31.9</td>
<td>-33.5</td>
<td>-34.1</td>
</tr>
<tr>
<td>Investment</td>
<td></td>
<td>20.3</td>
<td>26.6</td>
<td>24.3</td>
</tr>
<tr>
<td>- private</td>
<td></td>
<td>3.5</td>
<td>3.4</td>
<td>17.0</td>
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<tr>
<td>- government</td>
<td></td>
<td>16.8</td>
<td>23.1</td>
<td>7.3</td>
</tr>
<tr>
<td>Consumption</td>
<td></td>
<td>87.8</td>
<td>83.7</td>
<td>80.4</td>
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<tr>
<td>- private</td>
<td></td>
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<tr>
<td>- government</td>
<td></td>
<td>10.4</td>
<td>15.1</td>
<td>-</td>
</tr>
<tr>
<td>Domestic savings</td>
<td></td>
<td>-3.1</td>
<td>-5.3</td>
<td>-9.3</td>
</tr>
<tr>
<td>Net private transfers</td>
<td>15.3</td>
<td>21.6</td>
<td>28.9</td>
<td>27.0</td>
</tr>
<tr>
<td>GNP</td>
<td></td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td>National savings</td>
<td></td>
<td>12.2</td>
<td>16.3</td>
<td>19.6</td>
</tr>
<tr>
<td>Savings gap (I-GNS)</td>
<td></td>
<td>8.1</td>
<td>10.3</td>
<td>4.7</td>
</tr>
</tbody>
</table>

Source: Western Samoan data derived from World Bank (1993) Vol. 8, Table 2.2.
Tongan data derived from Sturton (1992 p. 18)

Given (a) the indirect method of estimating domestic savings and (b) the particular structural characteristics of these economies which imply that a significant part of household income is earned externally, it can therefore be concluded that the low domestic savings rate suggested by the macroeconomic data for Tonga and Western Samoa cannot in itself be considered as evidence that remittances do not make a significant contribution to savings and investment. The negative relationship between remittances and domestic savings reflects an anomaly in the particular accounting procedures used, not any behavioural characteristic of migrants or of the recipients of their remittances.\(^{19}\)

However, it does not follow from this conclusion that remittances necessarily have a positive impact on the savings behaviour of their recipients. In the following sections of this paper

\(^{19}\) Burney (1989) argues that in favour of the adoption of an alternative method of estimating aggregate domestic savings. He recommends that estimated consumption out of remittances be added to gross domestic savings as conventionally estimated, and applies this to Pakistan's time series data to derive adjusted savings estimates.
micro-level survey data from Tonga and Western Samoa are used to analyse the uses of remittances and to assess their contribution to savings and investment.

4. Uses of remittances

4.1 Survey estimates of savings

Throughout Asia evidence from surveys does not support the view that the additional household income from remittances is used exclusively for consumption purposes, nor that remittance receiving families consume more and save less than others. Ranasinghe (1989) estimated the consumption functions of both remittance-receiving and non-remittance-receiving households in Sri Lanka from survey data, from which he concluded that there was no significant difference in the overall consumption pattern between the two groups. In some instances micro-level research yielded evidence to the contrary, namely, that remittance-receiving households saved more. Reporting on the findings of the ILO-ARTEP study of remittances Amjad (1989b) notes that total savings out of remittances were estimated at 41.5 per cent for Pakistan (1980-85); 15.1 per cent for the Philippines (1982); 44.5 per cent for Sri Lanka (1986); and 58.0 per cent for Thailand (1982). A number of studies from the Philippines show that 'migrants' families exhibit a higher propensity to save than non-migrants' (Abella 1992 p.32).

Perhaps the most detailed estimates of this sort come from Bangladesh where micro-level evidence similarly indicates that:

the propensity to save is much higher for these [remittance receiving] households compared to those which do not receive remittance money. [and] The hypothesis that the remittance-receiving households have a propensity to spend more on less essential and luxury items does not get much support from the data (World Bank 1981 p.137). 20

Savings can take two forms. First, when part of income is invested, the acts of saving and investing are rolled into one. Thus, every dollar's worth of goods channelled into real estate, housing, farms or other business activity is also a dollar's worth of saving. Second, income can be saved in the form of financial asset accumulation, such as a bank or other financial institution savings deposit. Evidence from the ILO-ARTEP studies suggests that financial savings do not generally constitute more than one fifth of total savings. 21 A notable exception appears to be Thailand where it was estimated that over one third of total remittances was used for financial savings (Tingsabadh 1989).

Taking all forms of savings into account Mahmud (1989) notes that in the case of Bangladesh there was a remarkably high savings rate of 50 per cent among migrant households in rural

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20 This study for the World Bank was undertaken by Rizwanul Islam and is published as Chapter III of a World Bank (1981) report. It first appeared under the author's name as an unpublished mimeo of the Department of Economics, University of Chittagong, 1980.

21 See data in Amjad, Table 1.5, p.15 (1989b).
areas and 40 per cent in urban areas. Non-recipient households were found to have significantly lower savings rates (1.8 per cent and 4.2 per cent for rural and urban households respectively) but their average income levels were also considerably lower. Using the same data, Mahmud and Osmani (1980) estimated the incremental savings rate of migrants by subtracting the savings without remittance income from the savings with remittance income, for a range of nine income groups. This revealed that as much as 60 to 70 per cent of the incremental income from remittances was saved when the savings embodied in expenditures of an investment nature, such as housing, are included. From a more recent survey among returned migrants undertaken by the Bangladesh Institute of Development Studies a similarly high estimated savings rate from remittance income of 65 per cent was obtained (Mahmud 1989).

Moreover, it is important to consider that savings need not be transferred immediately to the labour-sending country, but instead held ‘temporarily’ by the migrant in the host country. Taking into account the accumulated savings that the migrant may hold abroad and only transfer on his/her final return, Amjad (1986) found in Pakistan's case, using micro-level survey data from an ILO-ARTEP study, that postponed transfers were substantial. Kazi (1989) compares the findings of the ILO-ARTEP survey with the earlier survey of Gilani et al. (1981) and suggests that inclusion of remittances brought by the migrant on his/her final return accounts for the higher proportion investment out of remittances estimated in the ILO-ARTEP study.

It is also important to recognize that not all investment out of remittances contributes to aggregate output. First, there is the obvious point that investment in real estate and housing need not imply additional output if it is purchased from someone else. Its impact depends on how the previous owner uses the proceeds from the sale. Second, in his study of the macroeconomic effects of remittances to Asia from the Gulf, Saith (1989) emphasizes the importance of distinguishing between two types of migrant savers: the ‘rentier-saver’ and the ‘investing-saver’. He argues that the rentier-savers will hold their savings as financial deposits with banks, but this definition should be broadened to include acquisition of other interest or rent yielding assets, such as housing. The investing-saver, on the other hand:

shows a distinct preference for certain types of activities. Typically, he goes in for a small operation run on a self-employment basis. Trade and commerce, food establishments, and single-vehicle transport ventures come out as most favoured sectors, [which] are relatively risk free; involve little fixed capital and overheads; turn over the working capital rapidly; usually have few barriers to entry; can be mobile; and can be run on a small, self-employment basis which can take advantage of the migrant's family labour (1989 p.37).

The findings of most studies tend to support the view that savings from remittances are used principally for ‘non-productive’ rentier forms of investment, particularly land, housing, and home repairs. Of the remittances used for non-consumption items cited above from Amjad (1989b), the estimated proportion spent on ‘business investment’ (excluding financial assets) was found to be only 20 to 40 per cent. This represents only 7 to 12 per cent of total remittances. Quibria (1986) notes that the same findings were drawn from research in India. Most evidence therefore suggests that even when savings from remittances are substantial, the use of such savings contributes relatively little to economic growth.

Stahl and Habib (1989) challenge this view. They found, ‘unproductive’ forms of investment can have positive impacts on the broader economy. From their work on Bangladesh in which

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22 These figures are probably not strictly comparable with the others as they include as savings, expenditure on consumer durables.
they used World Bank migration and remittances data in an input-output model to estimate the multiplier and inter-industry linkage effects of remittances, they found that even though the proportion spent on investment goods is relatively small, `remittances tend to be spent within those sectors which have relatively strong linkages with the rest of the economy' (p.283). 23

In the context of the South Pacific the notion that non-productive forms of expenditure are `unproductive' or `wasteful' expenditures has been seriously challenged. Shankman (1976) argues that in Western Samoa, housing improvements, along with small-scale luxury consumption and church donations represent a `security investment' (p.63). Another study points out that Tongan householders themselves rarely perceive their use of remittances as unproductive or as examples of conspicuous consumption, on the grounds that `nothing is more productive than to be able to provide for their daily subsistence and to have the economic power to fulfil their family and social responsibilities, (Tongamoa 1990 p.14).

Nevertheless, there has been little attempt in previous work on the South Pacific to gauge the extent to which remittances contribute to savings and investment directly, or indirectly by augmenting the pool of loanable funds for investment in income-generating assets, physical or financial, by others in the private or state sectors. The studies undertaken recently in Tonga and Western Samoa under the ILO's South Pacific project show that when both official and unofficial remittances are accounted for most remittance-dependent households save and/or invest a significant part of their remittances domestically, and in Tonga's at least, they enjoy a higher savings propensity than non-remittance-receiving households. Moreover, it was found that migrants do not remit only for purposes of family support but also for reasons of investment in both financial and productive assets in their home countries. The survey among the petty-traders in Tonga also revealed that a significant part of remittances is used for investment purposes, not only in housing, but also in other more productive spheres, including agriculture. Remittances in-kind were found often take the form of investment goods, such as building materials, light machinery, and vehicles.

More specifically, the data from the surveys among the recipient households show that 32 per cent of remittance-receiving households indicated that the main use of cash remittances was for buying or improving their homes (42 per cent of Tongan and 23 per cent of Western Samoan remittance-receiving households). Social expenditures, such weddings, funerals and church donations were among the three most important uses for 69 per cent of households, followed by food and clothing (63 per cent) and then housing (42 per cent).

The questionnaire required the respondents to indicate how much money was used on each item of expenditure. Housing ranks highest, accounting for 36 per cent of the use of total money remittances. Social uses, food and clothing, and household goods each accounted for another 9 to 10 per cent of the total. It is also noteworthy that in the case of Western Samoa, expenditure on items related to schooling, such as school fees, school books, and school uniforms were singled out as a main items that any additional household income would be directed to. Expenditure by households on education is not usually treated as an investment in national income accounts. In this context, given the importance of education for any aspiring migrant to

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the developed host countries in the region, it would seem appropriate to treat such expenditure as an investment in ‘human capital’.24

The questionnaires also required the respondents to report more directly about their savings behaviour; whether or not they had saved any part of their income over the last twelve months, how much, and in what form. This information was required of all households irrespective of whether they received remittances or not. From these it can be seen that in 59 per cent of all households surveyed, some financial savings had been made out of household income over the last 12 months. The average level of household financial savings was thus estimated at US$479 per annum, which represents 5 per cent of the average declared income of the households surveyed. This is not an insignificant proportion, especially when it is considered that it is over and above the saving embodied in other investment expenditures, such as housing and education.

It must not be forgotten, however, that income from remittances is fungible, which raises the methodological question of how to attribute savings to remittance income in particular. Remittances add to total household income, out of which there is some saving. It would not therefore be correct to infer too much from a survey question which asks what savings, if any, are undertaken from remittance income specifically. To approach this issue indirectly, the savings behaviour of households with remittance income and those without was compared. The results of this comparison are shown in Table 9.

In terms of the numbers of households engaged in savings, the proportion was much higher for those who received remittances (63 per cent) than those who did not (40 per cent). However, when the average savings levels and rates are compared, the results are ambiguous. In the case of Tonga, it is clear that remittance receivers saved a much higher proportion of income than those who do not (US$667 per household or 8 per cent of income, in comparison with US$406 per household or 2.5 per cent of income). But, in Western Samoa’s case non-recipients of remittances appear to have saved more (US$763 per household or 10.5 per cent of income) than recipients (US$349 per household or 4 per cent of income). However, it needs to be noted that the reliability of these estimates and

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24 Gailey (1992), for instance, found that ‘families deliberate carefully about which members would be most likely to do well overseas and be reliable in sending remittances’ (p.465).
Table 9. Savings behaviour of remittance recipients: Tonga and Western Samoa

<table>
<thead>
<tr>
<th></th>
<th>Savers (% total)</th>
<th>Savings/HH (US$)</th>
<th>Savings/Y (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall sample</td>
<td>58.6</td>
<td>479.2</td>
<td>5.0</td>
</tr>
<tr>
<td>Tonga</td>
<td>50.8</td>
<td>581.1</td>
<td>6.0</td>
</tr>
<tr>
<td>W. Samoa</td>
<td>66.4</td>
<td>377.2</td>
<td>4.0</td>
</tr>
<tr>
<td>Remittance recipients</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall</td>
<td>63.3</td>
<td>482.2</td>
<td>5.3</td>
</tr>
<tr>
<td>Tonga</td>
<td>60.7</td>
<td>667.0</td>
<td>8.2</td>
</tr>
<tr>
<td>W. Samoa</td>
<td>65.2</td>
<td>348.9</td>
<td>3.6</td>
</tr>
<tr>
<td>Non-remittance recipients</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall</td>
<td>39.4</td>
<td>468.0</td>
<td>3.6</td>
</tr>
<tr>
<td>Tonga</td>
<td>30.5</td>
<td>406.7</td>
<td>2.5</td>
</tr>
<tr>
<td>W. Samoa</td>
<td>82.3</td>
<td>763.4</td>
<td>10.5</td>
</tr>
</tbody>
</table>

Notes: HH = household  
Y = household income  
Source: Brown and Connell (1993b)

Comparisons in the case of Western Samoa is suspect, given the bias resulting from the very small sub-sample of Western Samoan non-remittance-receiving households.  

4.2 Estimating a savings function

An alternative method of analysing the survey data is by econometric estimation of a savings function. An ordinary least squares (OLS) two-variable regression analysis was performed using the data from the Tongan and Western Samoan surveys. The level of savings and the savings/income ratio at the household level were regressed against a number of variables including the level of remittances and the proportions of remittances in total household income. The more significant results of the two-variable regression analysis are summarized in Table 10, from which some interesting conclusions may be drawn.

As one would expect, the results show that the absolute level of household savings (S) is a positive function of household income (Y). As both savings and household income were logged before being regressed against one another, the estimated 'beta' coefficient provides an approximation of the savings elasticity amongst those who reported positive savings. It is not possible to draw any conclusions about the savings propensities of the total samples covered by the survey because the non-savers are not included in the regression. When the data for both countries were combined, the estimated savings elasticity of the 183 households that saved a monetary amount in the past twelve months, was 0.32. Among those who do save, there does appear to be a significant difference between Tongan and Western Samoan households, with the former having a savings

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25 It should be remembered that in Western Samoa’s case, over 90 per cent of all households surveyed were receiving remittances. The sub-sample of non-receivers was thus only 17 in total, of whom 14 were savers. Any estimates based on such a small sample should therefore be treated with extreme caution.

26 It should be noted that the regression analysis was based only on those households that had provided details of their household income and had saved in the last twelve months. In addition, the estimated remittances could be included in the regression only if it was positive.
elasticity twice as high (0.60) as that of the latter (0.30), which would be consistent with Tonga's higher per capita income level. The high savings elasticity for Tonga could also be due to the small number observations (26) available for this regression and hence this has resulted in an upward bias.

It should also follow that the higher the level of remittances (R), the higher the level of savings. However, when the absolute level of savings was regressed against the absolute level of remittances, the results were not significant and no conclusions could be drawn. This could be explained by differences in other variables such as household size, and other sources of household income. To allow for these possibilities, the savings/income (S/Y) ratio, or average propensity to save, was then regressed against the household remittances/income (R/Y) ratio. This regression was once again run using the three different data sets: the overall sample, and the Tongan and Western Samoan sub-samples. The results of all three regressions indicate that the coefficients of the parameter estimates were all positive and significant, reflected in the t-values. Hence, it appears that a positive relationship does exist between the savings-income ratio and the remittances-income ratio.

Caution should be exercised in interpreting these results. Firstly, the regression analysis is based on the sub-sample of savers and thus does not take into account dis-savers in the overall sample. Secondly, the data refer only to savings over the preceding 12 month period. Thirdly, the meaning and definition of 'savings' is often ambiguous, especially distinctions between

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**Table 10. Tongan and Western Samoan household savings behaviour: regression results**

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>Independent variable</th>
<th>Intercept estimate</th>
<th>Parameter estimate</th>
<th>R² (adjusted)</th>
<th>Degrees of freedom</th>
<th>Durbin-Watson statistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall sample S/Y R/Y</td>
<td>-2.61 (-21.16)</td>
<td>0.219 (1.945)</td>
<td>0.0224 (0.0165)</td>
<td>165</td>
<td>1.425*</td>
<td></td>
</tr>
<tr>
<td>Tonga S/Y R/Y</td>
<td>-1.49 (-9.224)</td>
<td>0.3272 (2.973)</td>
<td>0.3175 (0.2816)</td>
<td>19</td>
<td>1.983</td>
<td></td>
</tr>
<tr>
<td>Western Samoa S/Y R/Y</td>
<td>-3.807 (-5.936)</td>
<td>0.2506 (1.911)</td>
<td>0.0247 (0.0180)</td>
<td>144</td>
<td>1.648</td>
<td></td>
</tr>
<tr>
<td>Tonga S/Y R Per Capita</td>
<td>3.807 (5.936)</td>
<td>0.3245 (3.123)</td>
<td>0.3392 (0.3044)</td>
<td>19</td>
<td>1.945</td>
<td></td>
</tr>
</tbody>
</table>

Notes:
* Positive autocorrelation at 1% level of significance
Variables are all logged
T values are indicated by parenthesis
Source: Brown and Connell (1993b)
stocks and flows, gross and net savings, and debt reductions and asset increases need to be made. The results reported here should be interpreted as indicative of a positive relationship between remittance transfers and household savings rates, and no more.

**4.3 Remittances in kind as investment goods**

The surveys in Tonga and Western Samoa required the respondents to provide details of the types and values of goods received by the household, and the use to which they were put. Consumer non-durables in the form of food and clothing are the most important category, accounting for 25 per cent of the total value of all such goods. Consumer durables were also a major component. Household furniture and white goods (refrigerators, stoves, washing machines, etc.) accounted for 21 per cent of the total. It is worth noting that investment goods were also of significance. In Tonga, housing and building materials accounted for 32 per cent, and motor vehicles and transport equipment another 12 per cent of the total. In Western Samoa business and farm supplies accounted for 21 per cent of the total.

It should not be assumed that all remittances received in the form of consumer goods, necessarily constitute ‘consumption’ by the recipient. The survey data on the main uses to which these goods were put show that not all households used remittances in kind exclusively for their own consumption. Although 99 per cent of households indicated that such goods were for their own use, 10 per cent of them also indicated that some of the goods they received were sold to others. As these often enter the country as personal effects, they escape import duties, and are then sold, usually in informal sector flea-markets at prices well below those in the formal sector retail stores. A not insignificant part of the unofficial remittances sent in the form of goods can thus be regarded as investment; they are the inventories of a retail trade business operation. Each dollar's worth of goods used for this purpose thus constitutes a dollar's worth of saving and investment.

This practice appeared more prevalent in Tonga where almost 30 per cent of those who received remittances in kind, indicated that at least some of the goods were sold to others on an informal basis. The Nuku'alofa flea-market survey revealed that almost all vendors in the market (91 per cent) were engaged exclusively in the sale of goods that had been sent to them as remittances. Few stalls had any goods of Tongan origin. Most market sellers had moved away from receipt of cash remittances alone to either some combination of cash and goods or, in most cases, goods alone. This was a result primarily of the recognition, by both migrants and recipients, that selling goods could produce a greater income than was possible from the cash alone. Most vendors had therefore moved into the flea-market specifically to earn a higher income than cash remittances produced. More often it was the migrant living overseas who had encouraged the transition from cash to goods, recognizing the greater cash income that would ultimately be produced in this way.

Although the goods came from relatives, i.e. the same relatives who had previously sent (or continued to send) cash remittances, they were always sent with the intention that they be sold. The vast majority of the goods came from second-hand stores, garage-sales and jumble-sales and from other flea-markets, especially in the United States of America. Goods had three advantages over cash remittances: firstly, they were sold over a period, hence the income was spread over a longer time period; secondly, there was greater certainty that they would be received in Tonga (especially in comparison with banknotes entrusted to the postal system), and thirdly, the income obtained from selling goods in the market was substantially greater than
the cost of those goods to the senders at their origin. This was emphasized by most vendors, who stressed that either they themselves had preferred this form of remittance or their relatives had encouraged them to set up this market system (which may also have reduced demands on overseas relatives for cash remittances). From being recipients of cash remittances the market vendors had become small-scale entrepreneurs.

One of the most interesting findings to emerge from the study concerns the savings and reinvestment undertaken from flea-market proceeds. More than one quarter of the respondents (26 per cent) said that they used their flea-market income exclusively for savings or reinvestment purposes. Another 13 per cent indicated that their income was partly saved. No attempt was made to gauge the actual magnitude of savings, but these data suggest that almost 40 per cent of the respondents were able to save all or part of their earnings.

What this demonstrates is that for at least some, albeit relatively very few, remittances had become central elements in small business development. In addition, in some cases part of the income was reinvested, not only in real estate and housing, but also in other productive spheres of economic activity. This finding is consistent with the findings of other studies of remittances and investment (Diaz-Briquet and Weintraub 1991). However, it should not be concluded from this that all migrant-families can be treated as potential entrepreneurs or, to use Saith's (1989) terminology, as investing-savers.

It is clear from the survey that there was a noticeable diversity of stall-holder `types', and that in at least a few instances, a part of the profits was remitted back to the migrant abroad to cover the costs of purchase and/or transport and ensure that further goods followed. This informal, two-way international trade was sometimes linked to other investment activities of the recipient, including the production of cash crops for export via the family's migrant network overseas. In other instances it had evolved into a more business-type relationship where the migrant relative becomes the Tongan producer's `export agent' in the metropolitan economies - a small-scale international import-export system, with linkages to domestic productive sectors. This phenomenon has been described elsewhere in terms of an `international scale of family operations, still tied to kin at home' (Marcus 1981, p.60), or as `remittance transfers among various component parts of the "transnational corporations of kin" which direct the allocation of each island's family labour around the regional economy' (Bertram 1986 p.820).

Caution needs to be exercised in interpreting the significance of these developments from a macroeconomic perspective. It has been emphasized elsewhere that while such investments may generate additional income for the individual it does not necessarily follow that these activities are additive from a macroeconomic point of view; they could amount to no more than an `internal restructuring' of the retail sector without adding to total GDP (Saith 1989). In effect this would imply a redistribution of profits away from large, formal sector retailers towards petty-traders. Indeed, the responses by some of the large, formal sector retailers tends to verify this view.

The importance of these findings lies not in the macroeconomic impact of these investment activities as such, nor in suggesting that all migrant families should be considered potential entrepreneurs. What they do illustrate is that where investment opportunities arise, it is certain that there are some migrant-families who will respond spontaneously, committing their remittances to take advantage of the profit-making possibility afforded. As part of this process some migrants were no longer remitting goods purely for purposes of family consumption support but had, in effect become part of an international family business and were now
motivated by the income-generating potential such remittances in kind offered in the home economy. This issue is of central importance from a policy perspective and is therefore addressed more systematically in the following sections.

5. Determinants of remittances

5.1 Exogenous, structural and behavioural factors

To analyse the causes of changes in remittance levels and to gauge their potential responsiveness to policy interventions it is useful to begin by considering the various factors that can influence the total level of remittances to a country. A distinction can be made, in the first instance, between those factors that influence the shape (and shifts) of the total migrant community's remittance function, versus factors affecting the remittance behaviour of individual migrants. The individual remittance function represents the time profile of an individual migrant's remittances where all other determinant factors (apart from the passage of time), such as income, gender, marital status, subjective preferences or behavioural characteristics, etc., are held constant. The community remittance function can be understood as the sum of all individual migrants' remittance functions.

Provided the size and composition of the migrant community remains unchanged, and any exogenous factors affecting a migrant's remittance behaviour do not change, the community remittance function will remain unchanged and will also represent the aggregate time profile of actual remittance levels. In this case changes in remittance levels over time would reflect movements along the given community remittance function which in turn would reflect movements along individuals' remittance functions.

A change in the shape or position of the community remittance function could arise from either some change in the remittance functions of the individual migrants or from a change in the size or composition of the migrant community. If a factor such as the gender or marital status of the migrant is found to be an important determinant of propensity to remit, and the demographic composition of the migrant community changes in relation to these characteristics, the community's aggregate remittance function will change. Similarly, if length of absence from home country is an important determinant and, with the passage of time, the average length of absence from home of the migrant community changes, the community remittance function will change as illustrated.

For purposes of analysis, three broad categories of determinant factors can be distinguished. The first two can be considered `endogenous' in the sense that they are endogenous to the migrant community per se, while the third category refers to `exogenous' factors that can induce change in one or more endogenous factors.

First, there are those individual characteristics that affect a migrant's remittance behaviour and levels. These include both the `behavioural' and individual `demographic' characteristics of the migrant. Second, there are structural factors, referring to the composition of the migrant community in terms of the main demographic and behavioural characteristics of its members. Third, there is a need to identify and consider those exogenous factors that can induce changes in either the structural composition of the community or the remittance behaviour of individual migrants. Exogenous changes include such factors as changes in economic conditions and
policies in the host and migrants' home countries, or changing employment possibilities, wage rates, social security benefits, exchange rates, and relative interest rates, as well as other non-economic factors such as political risks in the home country and or immigration policies in the host country. Changes in remittance levels need to be explained more systematically in terms of changes in variables at each level.

A number of studies attempt to analyse the determinants of remittance levels with a view to gauging the potential responsiveness of remittances to policy interventions designed to encourage migrants to remit more. The best known of these is probably Swamy's study for the World Bank (Swamy 1981). From a multiple regression analysis of pooled secondary data for 18 years and three countries she concluded that the most important determinants of total remittances were the exogenous factors affecting numbers of migrants and their per capita income levels, and the demographic structure of the migrant community. The migrants' average level of income and cyclical changes in the level of economic activity in the host countries were found to account for 70 to 95 per cent of variability in remittance levels. Swamy (1981) also observed that of the demographic variables, the ratio of females to the total migrant population, were the most significant, and more significant than exogenous financial variables. Financial variables often used by governments wishing to attract remittances, such as interest and exchange rates, were found to be unimportant. Another econometric analysis by Straubhaar (1986) of remittances data from Turkey over the period 1963-82 confirmed Swamy's (1981) earlier findings, but his conclusions suggest a hierarchy of determinants. Straubhaar found that:

Despite the incentive schemes installed by the Turkish governments [the] regression results show no evidence that Turkish emigrants were sensitive to economic benefits of remitting more. [and] the flows of remittances towards Turkey are determined, in order of importance: First, by the economic situation in Germany. The wage level in Germany and the possibility for Turkish emigrants to become active have determined the potential flow of remittances. What part of it has really been remitted was determined by second, the confidence the Turkish emigrants felt in the safety and liquidity of their investments in their country of origin. Given a congenial legal and political milieu in Turkey, the emigrants' propensity to remit might have been determined finally by third, economic incentives making an investment in Turkey more beneficial than investments in other countries (1986 p.737-8).

From studies which focus on structural and exogenous determinants using aggregate data analysts have been tempted to draw conclusions about the individual behavioural or motivational characteristics of migrants. Swamy (1981) concludes, for instance, that per capita remittances are likely to decline as the migrant stays longer in the host country. In the South Pacific it is often suggested, or assumed implicitly, that migrants' remittances are motivated principally by altruistic sentiments towards families and the community, and their need for income support. The longer the duration of the migrants' stay abroad, and the greater the associated decline in the number of dependents at `home', the weaker the migrants' motivations to remit are believed to become. This, it is argued, explains the so-called `remittance decay function'. One proponent of this is Forsyth who suggests that:

sustained high rates of remittance tend to be characteristic of migrants who intend staying in the host [country] for a relatively brief period and then returning home.... But such rates are unlikely to be sustained if the period of residence is extended ...[which] suggests a profile over time ... with remittances reaching a peak soon after arrival in the host country then gradually declining (1992 p.39).

Inferences from secondary macro-level data analysis about individual migrants' behavioural characteristics and, thus, their motivations for remitting are, at the least, highly dubious. Time series data on aggregate remittance flows can be interpreted as representing the loci of points on changing or shifting community-level remittance functions over time. The actual time profile
of aggregate remittances need bear no relation to the shape of the individual or community remittance functions. It is not therefore possible to infer or postulate the existence of a remittance decay function for individual migrants from aggregate data.

Another theory that would have the opposite implications for the shape of an individual's remittance function is that migrants are 'target savers' who retain much of their savings abroad only remitting them on, or over a period of time shortly before, their final return (Piore 1979; Quibria and Thant 1988). In such cases one could anticipate a remittance function that is positively sloped. Amjad (1986) argues on the basis of micro-level survey data that this factor explains why, in the case of Pakistan, remittance levels did not decline as the remittance-decay hypothesis would suggest: `As these return flows become larger, they will "cushion" to some extent the expected decline in remittances' (p.780).

Standing (1984) identified at least five different forms of possible remittance function. 'Theories abound' (Quibria 1986 p.90) it would seem, but, it is clear that:

no comprehensive theory of remittances exists. Moreover, there is surprisingly little statistical evidence on the motives for remitting, and the few studies that have appeared are not couched in terms of testable hypotheses derived from a theoretical framework (Lucas and Stark 1985 p.902).

Despite the general lack of statistical evidence the common belief is that migrants are unlikely to be motivated to remit for investment purposes. Limited investment behaviour is attributed to the belief that most migrants have other priorities and are 'workers, not risk-taking entrepreneurs' [hence] it is naive to expect that the overseas work experience will transform a poor working peasant into an industrial entrepreneur' (Stahl and Arnold 1986 p.914). This should not be interpreted as meaning that migrants' remittances cannot be investment motivated. In earlier sections of this paper it has been seen how, in the case of some Tongan families, when new opportunities arose remittances were used for investment purposes and migrants themselves had become motivated to remit in order to accumulate assets or invest in their home countries. Stark (1991a and 1991b) refers this form of behaviour as 'tempered altruism or enlightened self-interest' which he identified among migrant communities from Botswana, India and the Philippines where considerations such as an aspiration to inherit, maintenance of rural investments, and the intentions to return mean that the migrant retains a vested interest in his original home beyond altruism' (1991b p.40). Studies from the Caribbean Basin countries reported in Diaz-Briquets and Weintraub (1991) found strong links between remittances and small business development in the remittance-receiving economies, also indicative of at least some investment-motivated behaviour.

5.2 Evidence from the South Pacific

5.2.1 Demographic characteristics

The data from the Brisbane survey of Pacific Island migrants was used to identify the main determinants of remittances among these migrants and to test for alternative motives for remitting. This section outlines the main findings of this analysis. Two forms of regression analysis were applied to the Brisbane survey data: Ordinary Least Squares (OLS) multiple regression to identify the main determinants of remittance levels, and PROBIT regression analysis to identify the main determinants of whether a migrant remits or not. Due to the problems associated with the Western Samoan sample data only the Tongan data are used in this part of the analysis.
Two multiple regressions were run. The first regressed remittance levels as the dependent variable against a number of independent variables identified as potentially important causes of changes in remittance levels sent. The second equation regressed the migrant's average propensity to remit against the same independent variables. From the results shown in Table 11 it can be seen that both models produced relatively good results, econometrically, but these were also disappointing in the sense that they only confirm the rather obvious point that a migrant who is employed will send more remittances, both absolutely and as a proportion of income, in comparison with a migrant who is not working.

On the other hand, it was found that an increase in the income level of a migrant will result in a rise in the absolute level of remittances sent but in a decline in the average propensity to remit. However, the results indicate a very high elasticity, of 0.53. As this is a logged function, it indicates that a 10 per cent increase in income will result in a 5.3 per cent increase in remittances. This suggest that as a migrant earns more, he/she tends to consume or save a higher percentage of income in Australia. While it is correct to interpret this as supportive of the remittance-decay hypothesis, it could also be indicative of the target-saving behaviour as reported by Amjad (1989) in the case of Pakistani migrants. As the migrants' income rises so do their savings, but as these are held in assets overseas there is no corresponding increase in remittances. The savings are only remitted at the time of the migrants' eventual return home.  

Three PROBIT regression analyses were undertaken in an attempt test the significance of the relationships that might exist between the migrant community's remittance behaviour and particular demographic and other individual migrant characteristics. The purpose is to identify the most significant characteristics of a remitting or high-remitting migrant.

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28 No other independent variables included in initial rounds of this regression analysis could be justified in terms of their statistical significance.
Table 11. Results of multiple regressions: determinants of Tongan migrants' remittances

<table>
<thead>
<tr>
<th></th>
<th>Remittance levels with the full sample</th>
<th>Remittances/income: with the full sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>-0.526 (0.56)</td>
<td>-0.702 (0.44)</td>
</tr>
<tr>
<td>Log income</td>
<td>0.529 (3.04)**</td>
<td>-0.444 (2.66)**</td>
</tr>
<tr>
<td>Log asset</td>
<td>0.005 (0.74)</td>
<td>0.003 (0.51)</td>
</tr>
<tr>
<td>Parent</td>
<td>-0.165 (0.62)</td>
<td>-</td>
</tr>
<tr>
<td>HOUSNUM</td>
<td>0.034 (0.82)</td>
<td>-</td>
</tr>
<tr>
<td>Job</td>
<td>0.372 (1.92)**</td>
<td>0.388 (2.10)**</td>
</tr>
<tr>
<td>Time</td>
<td>0.00004 (0.56)</td>
<td>0.007 (0.85)</td>
</tr>
<tr>
<td>Degrees of freedom</td>
<td>145</td>
<td>149</td>
</tr>
<tr>
<td>F stat</td>
<td>4.879**</td>
<td>3.432**</td>
</tr>
<tr>
<td>Adj R²</td>
<td>0.1335</td>
<td>0.1661</td>
</tr>
</tbody>
</table>

Notes: Absolute T-values are in parentheses
* significant at the 10 per cent level
** significant at the 5 per cent level

In this table, as well as in the following table 12, the variables used in the multiple regression and PROBIT equations have the following definitions:

- **Remittance levels**: amount of remittances for the last financial year (variable is logged)
- **Propensity to remit**: remittance level as a percentage of income
- **Dependent variables**
  - REMIT: dummy variable; 1 if migrant remitted last financial year, otherwise 0
  - GTREM: dummy variable; 1 if remittances exceeds the average, otherwise 0
  - INC: dummy variable; 1 if the propensity to remit exceeds the average, otherwise 0
- **Independent variables**
  - Income: earnings per year, in Australian dollars (variable is logged)
  - Prec: dummy variable; 1 if the migrant's income is above the average, otherwise 0
  - Parent: dummy variable; 1 if at least one parent (or in-law) is alive, 0 if all parents (and/or in-laws) are deceased
  - Job: dummy variable; 1 if the head of the household is employed, otherwise 0
  - Intent: dummy variable; 1 if the migrant intends to return home, otherwise 0
  - HAGE: head of household's age in years
  - HOUSNUM: number of dependents in Australia supported by the migrant
  - Time: the length of time the migrant has been away from home country
  - ASS: dummy variable; 1 if the migrant owns any assets, otherwise 0
  - Asset: Value of all assets owned by the migrant (variable is logged)

Source: Brown and Walker (1994)

The three PROBIT models used as the dependent variables: (i) whether the migrant remitted or not; (ii) whether the migrant's remittance levels exceed the average for the community group or not; and (iii) whether the migrant's propensity to remit is greater than the average for the community group or not. The results of this analysis are reported in Table 12.

The first model, which effectively compares the characteristics for remitting versus non-remitting migrants, three of the six independent variables were found to be significant. These
were the head of the household's age; length of time away from the home country; and the number of dependents living in Australia.
Table 12. Results of PROBIT analyses: determinants of Tongan migrants' remittances

<table>
<thead>
<tr>
<th></th>
<th>REM IT</th>
<th>GTREM</th>
<th>INC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>-0.522</td>
<td>-0.058</td>
<td>0.644</td>
</tr>
<tr>
<td></td>
<td>(0.73)</td>
<td>(0.064)</td>
<td>(1.75)</td>
</tr>
<tr>
<td>PRINC</td>
<td>0.479</td>
<td>-0.506</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(4.47)**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HAGE</td>
<td>-0.03</td>
<td>0.004</td>
<td>0.01</td>
</tr>
<tr>
<td></td>
<td>(4.51)**</td>
<td>(0.162)</td>
<td>(1.05)</td>
</tr>
<tr>
<td>ASS</td>
<td>-0.398</td>
<td>-0.05</td>
<td>-0.05</td>
</tr>
<tr>
<td></td>
<td>(0.717)</td>
<td>(0.25)</td>
<td>(0.02)</td>
</tr>
<tr>
<td>Parent</td>
<td>0.581</td>
<td>0.088</td>
<td>0.005</td>
</tr>
<tr>
<td></td>
<td>(1.58)</td>
<td>(0.055)</td>
<td>(0.02)</td>
</tr>
<tr>
<td>Job</td>
<td>0.484</td>
<td>0.252</td>
<td>-0.061</td>
</tr>
<tr>
<td></td>
<td>(2.29)</td>
<td>(1.10)</td>
<td>(0.06)</td>
</tr>
<tr>
<td>Intent</td>
<td>0.418</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>(1.61)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HOUSNUM</td>
<td>-0.13</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>(3.42)*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>0.0003</td>
<td>0.0005</td>
<td>-0.01</td>
</tr>
<tr>
<td></td>
<td>(3.54)*</td>
<td>(0.207)</td>
<td>(0.62)</td>
</tr>
<tr>
<td>Asset</td>
<td>-0.02</td>
<td>0.002</td>
<td>0.005</td>
</tr>
<tr>
<td></td>
<td>(2.61)</td>
<td>(0.0345)</td>
<td>(0.26)</td>
</tr>
<tr>
<td>Numbers</td>
<td>1: 149</td>
<td>1: 92</td>
<td>1: 102</td>
</tr>
<tr>
<td></td>
<td>0: 16</td>
<td>0: 54</td>
<td>0: 46</td>
</tr>
<tr>
<td>log likelihood</td>
<td>-45.828</td>
<td>-89.19</td>
<td>-86.95</td>
</tr>
</tbody>
</table>

Notes: Absolute Chi Square Statistics in parentheses
* significant at the 10 per cent level
** significant at the 5 per cent level

For definitions, see table 11.

Source: Brown and Walker (1994)

Interestingly the age variable had a negative coefficient, implying that younger migrants are more likely to remit than older migrants. This finding is consistent with the remittance decay hypothesis. There was also a significant indication that the longer the migrant is away from home, the more likely the migrant is to be a remitter. This finding is contrary to the assumption underlying the remittance decay hypothesis which postulates a negative relationship between incidence of remitters and length of absence from the migrant's home country. Finally, the analysis indicated that a migrant with a large number of dependents living in Australia is less likely to remit than a migrant who has a smaller number of dependents.
In the second and third models, only one independent variable, income, was statistically significant. In other words the main conclusion that can be drawn from this is that a migrant who is earning an amount which is above (below) the average income for the community is more likely to (i) send remittances of an amount which is above (below) the community's average; and (ii) have a propensity to remit which is below (above) the community average.

It needs to be stressed that the conclusions from the analysis of data obtained in this relatively small, pilot survey must be treated as preliminary and with due caution. The results of the regression model could be affected by the small number of migrants who did not remit during the last financial year (16 in comparison with the 145 who did remit).

5.2.2. Remittance decay?

The previous section cited some indirect evidence in support of the remittance-decay hypothesis. This section reports on the direct testing of this hypothesis using the Brisbane survey data. These were used to estimate a community remittance function for the Tongan and Western Samoan migrant communities. From the survey data it was possible to investigate the relationship between remittance levels and the surveyed migrants' length of absence from their home country.

Each community sample was disaggregated into five categories or sub-groups according to the period of absence from home. The five sub-groups were delineated on the basis of the following lengths of time since migrating: (i) zero to five years; (ii) five to ten years; (iii) ten to fifteen years; (iv) fifteen to twenty years; and, (v) twenty years or more.

A remittance function can be defined in two ways, in terms of either (i) the absolute amount remitted each year per migrant (remitter and non-remitters included) and labelled here the 'absolute' remittance function; or (ii) the proportion of total income remitted each year, labelled here the 'relative' remittance function. The derived absolute functions for Tongan and Western Samoan migrants are shown graphically in Figure 1.

These functions indicate that the remittance levels for the Western Samoan migrants peaked after they had been away from Western Samoa for about ten years (at $1,637 per annum) and then decline rapidly. This finding is consistent with the remittance decay hypothesis advanced by Forsyth (1992) and others. However, the more reliable Tongan data were less supportive of this hypothesis. Remittance levels for Tongan remitters appeared to peak after 15 years absence and then to level-off. Fuka (1985) reported that a New Zealand study found that the incidence of remitting migrants among the Tongan community living in Auckland, peaked at 50 per cent after 15 years of residence and dropped to 33 per cent after 20 years. This appears to be inconsistent with this analysis which shows that 81 per cent of those who have been away from Tonga for 15 to 20 years remitted and that 96 per cent for those away for 20 years or more were still remitting. Standing (1984) also found that remittance levels in India tended to level-out over time.

The relative remittance function was also derived for Tongan migrants (see Figure 2a). This shows that the average propensity to remit of the Tongan migrants increased over the first 15 years of absence from the home country (to almost 15 per cent), and then levelled
For the Western Samoan community, not shown here, the relative remittance function appears quite 'flat', averaging around 5 per cent of income for all groups except for those who have been away for 5 to 10 years for whom remittances rise slightly, to 7 per cent of income. Thereafter it falls back to something less than 5 per cent for those who have been away for 15 to 20 years.

These results are clearly contrary to the remittance decay hypothesis. Comparing the relative remittance function (Figure 2a) with the absolute remittance function (Figure 2b) shows that the decline in the propensity to remit of the 15 to 20 years away group can be attributed to a lower average level of remittances and a higher average income level. In contrast, the 20 years and longer group's average level of remittances was substantially higher than any other group's, indicating that their lower propensity to remit is attributable to a much higher income level, as Figure 2c confirms. The Tongan sample also allowed for further analysis of remittance behaviour by migrants' length of stay abroad. This yielded strong indications that remittances were not driven exclusively by the need for family support (labelled demand-side factors), and that the migrants' savings and investment behaviour (supply-side factors) are clearly also major determinants of both the incidence and levels of remittances.

It was found that the relatively high incidence of remitting migrants among those who had been away for a relatively short time period (0 to 5 years) as well as those who have been away for a very long period (20 years or more) could be explained more in terms of the migrants' savings and investment behaviour than by the need for family support in the home country. On the other hand, when the need for family support appeared to be the main determinant of remittances (as was clearly evident with the 15 to 20 years-away category), both the incidence of remitting migrants and the levels of remittances were relatively low.

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29 For the Western Samoan community, not shown here, the relative remittance function appears quite 'flat', averaging around 5 per cent of income for all groups except for those who have been away for 5 to 10 years for whom remittances rise slightly, to 7 per cent of income. Thereafter it falls back to something less than 5 per cent for those who have been away for 15 to 20 years.
Figure 2a. The relative remittance function: Tonga

Figure 2b. Average remittances per migrant: Tonga
Figure 2c. Per capita income levels: Tonga

The finding that the remittance functions dips sharply for the 15- to 20-years away group (a) because of strong, negative supply-side demographic and behavioural characteristics; and (b) despite strong, positive demand side demographic characteristics. This also suggests that the supply-side characteristics are perhaps more important determinants of a migrant’s remittance behaviour than demand-side factors. If supply-side characteristic are more important, then the question of what *motivates* a migrant to remit becomes very important in understanding migrants’ remittance behaviour. Also, if some groups of migrants are motivated by one set of factors, and remit, say, for the purpose of family support, while others remit for investment reasons, it is also conceivable that length of absence from the home country is not as a significant variable as the nature of migrant’s `objective function'.

In other words, differences in migrants' remittance behaviour could have more to do with their motivational differences attributable to different, inherent behavioural characteristics. The next section shows how the data from this pilot survey was be used to explore alternative hypotheses of what motivates a migrant to remit.

5.2.3. Testing migrants’ motivational characteristics
The migrants were classified into motivational categories based on their responses to questions concerning their remittances and reasons for remitting. The three motivational types of migrant, drawing on the work of Lucas and Stark (1985) and Stark (1991a), were defined as:

I. Charitable family support motivated by `altruism' or `contractual obligation'.
II. Family support motivated by self-interested `inheritance seeking'.
III. Investment motivated by self-interest with a view to personal asset accumulation and/or provision for retirement living.
Two sets of indicators were used to classify the migrants: `primary indicators' and `secondary indicators'. In a majority of cases the migrant was classified in terms of his/her primary motivational characteristic, which was then interpreted as the main factor influencing remittance behaviour. Those who could not be categorized into one of the three defined categories are grouped under `unclassified migrants'. These could be interpreted as migrants with multiple objective functions or motivational characteristics, where no single motivational objective is clearly dominant in relation to the others. The classification is shown in Table 13.

Table 13. Remittance behaviour by motivational category: Tongan migrants
(all figures in percentages unless otherwise stated)

<table>
<thead>
<tr>
<th></th>
<th>Tongan remitters</th>
<th>Family support for charitable reasons</th>
<th>Family support for self interest</th>
<th>Direct self interest</th>
<th>Unclassified Tongan remitters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of respondents</td>
<td>154</td>
<td>35</td>
<td>90</td>
<td>20</td>
<td>51</td>
</tr>
<tr>
<td>Remittance level ($A)</td>
<td>4,629</td>
<td>3,052</td>
<td>5,528</td>
<td>2,590</td>
<td></td>
</tr>
<tr>
<td>Propensity to remit</td>
<td>15.7</td>
<td>12.1</td>
<td>17.6</td>
<td>9.8</td>
<td></td>
</tr>
<tr>
<td>Incidence of saving</td>
<td>25.6</td>
<td>37.9</td>
<td>78.6</td>
<td>18.9</td>
<td></td>
</tr>
<tr>
<td>Head H'hold average age (yrs)</td>
<td>41.1</td>
<td>41.0</td>
<td>38.3</td>
<td>43.2</td>
<td>43.5</td>
</tr>
<tr>
<td>Time away from Tonga (yrs)</td>
<td>11.05</td>
<td>11.8</td>
<td>13.6</td>
<td>10.5</td>
<td></td>
</tr>
</tbody>
</table>

Source: Brown and Walker (1994)

Analysis of the survey data on the basis of these categories yielded a number of important findings. In particular, it was found that the investment-motivated group differs from the sample average in two respects. The migrant who remits because of direct self interest in asset accumulation was found to have a higher propensity to remit and incidence of saving than any other type of migrant.

It might be expected that a migrant who has been away for longer than the others and is perhaps more concerned with his or her eventual return for retirement would dominate the investment-motivated category. However, the results of the survey did not give support to this. First, the average age of the migrants in the investment-motivated group (43.2 years) was not significantly higher than the average for the whole community (41.1 years). This tends to rule out the possibility of this group being dominated by migrants close to retirement age. Second, the investment-motivated group's average period of time away from Tonga (13.6 years), although higher than the average (11.0 years), would not imply a high degree of overlap with the group which appeared to be more investment motivated than other groups. However, it was also noted that the group which had an average length of stay away from home of less than five years also appeared investment-motivated. One possible explanation is that a large proportion of migrants in the `newest' group are temporary `target migrants' who have migrated with the
explicit motive of earning a set amount of money for investment in Tonga, while a large proportion in the ‘oldest’ group are preparing for their retirement in Tonga.

The small sample size did not allow for reliable statistical testing of this hypothesis. However, the results obtained are supportive of it. It was found that 44 per cent of the migrants classified under the investment-motivated category fall into the group that has been away from home longer than 20 years. Another 13 per cent of this category are from the group of migrants that has been away for five years or less, implying that more than half of the investment-motivated remitters fall into these two groups. In contrast, 42 per cent of those classified under category I, and only 16 per cent of those classified under category II fall into the ‘oldest’ and ‘newest’ groups.

5.3. Responsiveness of remittances to financial incentives

The conclusions of the previous sections suggest that there is little evidence in support of the orthodox view that investment in Tonga and Western Samoa is savings constrained. They also indicate that there is substantial scope for policy intervention on the part of Pacific Island governments, to increase the flows of remittances into their economies to be channelled either into productive investments in their domestic economies, or into the build-up of financial assets to provide for longer term income security. Much of the evidence cited here suggests that migrants' remittances would be responsive to financial incentives. 30 This runs counter to the conclusions from econometric analysis of secondary data in other countries discussed earlier (Swamy 1981; Straubhaar 1986).

Also a part of the ILO research project on which this paper reports was an econometric analysis of secondary data on savings and remittances in Tonga and Western Samoa (Foster 1993). The Tongan and Western Samoan situations are different from those of the other countries analysed in the sense that governments have done very little by way of providing special financial incentives to promote migrants' remittances. Indeed, Foster (1993) notes that ‘interest rate policy in Tonga has been dictated by the desire to keep lending rates at a minimal level in order to promote investment. As a result, maximum loan rates and fixed deposit rates resulted in negative real rates of interest prevailing throughout most of the 1980s’ (p.26). In 1991 the Bank of Tonga introduced a special savings account for migrants, but, as Foster (1993) points out, as it doesn't provide for any guarantee against inflation it is unlikely to be effective in mobilizing savings. In Western Samoa's case, real interest rates have been positive since the mid-1980s, but kept very low.

In view of the problems associated with the measurement of aggregate savings in the national income accounts using the residual method as discussed earlier, Foster (1993) based his analysis on a sub-set of private sector savings assets (savings and time deposits) held in Tonga and Western Samoa. He found, using Australian household income time series data as a proxy for migrant earnings, that migrant income is a major determinant of Tongan savings deposits. Moreover, it was also found that the levels of Tongan savings deposits were sensitive to real interest rate differentials between Tongan and Australian and New Zealand savings accounts. But, when it came to testing the responsiveness of remittances to interest rate differentials, no

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30 For a useful discussion of possible policies adopted elsewhere in the Asia-Pacific region to promote migrants' remittances, see M.I. Abella (1989).
statistically significant relationship was detected. There was evidence on the other hand, of a strong positive relationship between the Tongan rate of interest and remittances. Foster (1993) explains this paradox as follows: when interest rates for borrowers in Tonga increase significantly they rely more on informal borrowing from migrant relatives, thus causing remittances to increase. In other words, demand-driven remittances are sensitive to the cost of borrowing in Tonga. Supply-driven remittances - that is, migrant savings held in Tonga - on the other hand, appear more sensitive to migrant income levels.

A similar analysis was conducted on Western Samoan data and very similar results obtained. Savings deposits were found to be sensitive to interest differentials, and the savings propensities much higher than in Tonga. Again it was found that remittances were sensitive to interest rates in the remittance receiving country, suggesting that migrants constitute an important alternative source of loanable funds for Western Samoans when their cost of borrowing rises. However, the level of migrant earnings was found to be a significantly more important determinant of remittances in comparison with Tongans. This suggests that Western Samoan remittances are determined more by the migrants’ capacity to remit than the recipients need. Western Samoan migrants have much lower per capita incomes and remittance levels than their Tongan counterparts which could explain this difference. In other words, Tongans enjoy a greater savings potential and capacity to lend.

6. Policies to promote remittances and income security

6.1. Objectives and content of policy

It is generally accepted that policies are needed to encourage the use of remittances to promote longer term growth and income security in labour-sending economies. The belief is that policies can be effective in encouraging migrants to: (i) channel more remittances through official rather than informal channels; (ii) increase their levels of remittances by encouraging them to hold their savings in financial assets in the labour-exporting country rather than keeping them abroad (or spending their savings on consumer goods); and (iii) themselves become investors in productive assets in the domestic economies of the labour-exporting countries.

Governments of labour-exporting countries have introduced a variety of schemes for migrants with the above policy objectives in mind; namely, repatriable foreign exchange accounts to encourage the greater use of official channels, foreign currency denominated bonds to encourage more use of financial assets in the labour-sending country, and self-employment investment schemes to stimulate more direct investment in productive assets. Athukorala’s (1993) survey for ILO-ARTEP provides a useful overview of the first two types of policy. He reviewed policies in the seven major labour-exporting countries of Asia. 31 All except Indonesia provide temporary and permanent migrant workers with the incentive to remit to repatriable foreign-currency accounts (RFCAs) in domestic banks, which effectively means that the migrant is not subject to foreign exchange controls, in respect not only of current account transactions but also of capital transfers. In addition, India and Pakistan offer a premium over interest rates available in the international financial market, whereas in the other sample

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31 These were: Bangladesh, India, Indonesia, Pakistan, Philippines, Sri Lanka, and Thailand. See also Manolo Abella (1989) for useful discussion of policies in the Philippines in comparison with Bangladesh, India, Pakistan and Thailand.
countries they were on par with interest rates in their respective domestic markets. (Sri Lanka was the exception where interest rates on their RFCA were actually below domestic rates.) Bangladesh offers additional incentives through a preferential exchange rate applied to conversions of foreign exchange from the RFCA to local currency, and its Wage Earners' Scheme (WES) which enables migrants to sell their foreign exchange to importers on daily auctions (Mahmud 1989). In Pakistan's case there was the added advantage of the Habib Bank being allowed to open branches in many of the labour-importing Gulf countries to facilitate the migrants' use of official channels (Abella 1989). Sri Lanka also offers its migrants duty-free domestic shopping facilities (Saith 1989).

In other instances governments have resorted to mandatory remittance ratios. For instance, the Philippines introduced a decree in 1983 which required migrants to remit a given percentage of their foreign earnings through the official channels and, hence, to be converted to domestic currency at the official exchange rate. This proved incompatible with ILO labour standards, unpopular and impossible to implement and was scrapped by the new regime in 1986. A mandatory remittance scheme was also adopted by Thailand, but with little success (Quibria 1986; Quibria and Thant 1988).

In order to encourage migrants to hold their savings balances in financial assets in their 'home' as opposed to host countries many governments have introduced foreign currency denominated bonds. Athukorala (1993) points out that these have the added advantage over RFCAs in that they guarantee anonymity of the asset holder, who is still entitled to repatriate the funds on redemption if desired. For instance, Bangladesh has a Wage Earner Development Bond offering interest rates above those on domestic bonds, as well as an insurance scheme based on a one-off premium in foreign currency. Pakistan has for some time had Khaas Deposit Certificates which could be issued to migrants on payment of foreign exchange, but were denominated in local currency and, upon redemption, could be converted back to foreign currency at the official exchange rate (Kazi 1989). More recently Pakistan introduced Foreign Exchange Bearer Certificates which carry an interest rate above the Eurocurrency rate (Kazi 1989), and a Dollar Bearer Certificate offering a return linked to LIBOR (Kardar 1992; Athukorala 1993).

The third policy area concerns schemes to encourage migrants themselves to become investors. The first country to introduce such measures was Turkey, through the formation of 'Village Development Cooperatives' whose members gained preference for migration (Swamy 1981; Russell 1986). Examples of investment schemes in Asia come from Pakistan which has a Non-Repatriable Investment Scheme which allows migrants to import machinery at concessional rates of duty and to invest in export processing zones (Kazi 1989). In Bangladesh, too, migrants are offered special fiscal incentives to invest domestically (World Bank 1981).

6.2. The effectiveness of policy

It is generally recognized that policies to promote more remittances and to channel these into more productive areas of investment have not met with tremendous success. One of the most cited studies in this regard is Swamy's (1981) World Bank study. She found, using pooled time series data on official remittances from three countries (Greece, Turkey and Yugoslavia) over 18 years, that policy measures such as relative interest rate schemes and premium exchange rates were unsuccessful in increasing remittance flows. Another econometric study undertaken by Straubhaar (1986) based on secondary time series data from Turkey showed that neither variations in exchange rates (reflecting government intention to attract remittances by premium
exchange rates) nor changes in the real return of investments (reflecting government intention to attract remittances by foreign exchange deposits with higher returns) turned out to affect the flows of remittances’ (p.737).

It has also been observed that investment schemes, such as the village cooperatives attempted in Turkey, have had little success (Swamy 1981; Russell 1986). In Asia, too, Saith (1989) points to the high failure rate among the self employment schemes attempted by governments of labour sending countries to convert migrants who returned into small-scale entrepreneurs.

In the South Pacific there has been virtually no concerted effort by government to offer incentives for migrants to remit more through official channels and to induce more investment of remittances in productive activities. It is not therefore possible to assess policy and responsiveness to policy interventions in the South Pacific from an ex post perspective. Indeed, one of the main purposes of this ILO project was to make policy recommendations for the Governments of Pacific Island countries on how migrants' remittances can be directed towards more economically productive investments. The limited success of policies adopted elsewhere in Asia suggests that it would not make good sense to replicate the same schemes and policy interventions of others. On the other hand there is no basis on which the efficacy of such policies in the South Pacific can be dismissed. Much can be gained, not only in the South Pacific context, but elsewhere as well, from an analysis and assessment of the potential for policy responsiveness, the 'policy environment'. The purpose of this indirect approach is, first, to identify the necessary conditions under which the intended policies would be effective, and second, to gauge the extent to which the necessary conditions do hold in the given environment in which the policies are to be effected.

It is therefore useful to begin by identifying the assumptions underlying the orthodox policies adopted elsewhere to stimulate a greater flow of remittances to be directed towards more sustainable, income generating investments. The first assumption is that investment is constrained by savings and/or the availability of foreign exchange. If this were not the case there would be no reason to believe that increasing the inflow of migrants' remittances would induce or, at least, enable additional investment. Secondly, it is assumed that investment in the domestic economy of the labour-sending country is necessary if longer term ‘income security' of the population is to be sustained. Otherwise there would be no reason to be concerned that remittances were channelled into productive investments ‘at home.' Thirdly, it is assumed that the migrants themselves are the appropriate agents for undertaking the additional investment out of remittances - that they are all, in effect, latent entrepreneurs. Otherwise it would not be considered necessary to target the migrants themselves under the special schemes offering incentives to investing migrants. Fourthly, it is assumed that if remittances are to be channelled into productive investments in the domestic economy, they must be transferred via the official channels. Otherwise, it would not be considered necessary to offer special incentives for migrants to use formal banking accounts to transfer their remittances. Fifthly, it is assumed that the migrants' savings (held in the labour-sending country), and remittance levels, are sensitive to the relative real interest rate offered. This, in turn, implies that migrants are motivated to remit for reasons of self-interest (financial gain) and not only for family, consumption support. Otherwise it could not be expected that offering incentive interest and exchange rates to migrants would have any effect on the levels of remittances.

What do the findings of the micro-level research under the ILO South Pacific project tell us in respect of these assumptions and conditions? The main findings with respect to the last three assumptions are summarized in reverse order.
(i) It was argued that migrants' remittance levels are potentially responsive to financial incentives in view of the findings that migrants remit not only for family support, but also for purposes of investment, and that a significant proportion of migrants' remittances appeared to be motivated mainly by investment.

(ii) It was found that a significant part of unofficial remittances take the form of investment goods, suggesting that remittances have a greater impact on domestic investment than is generally thought, and, that remittances need not be transferred through formal banking channels to be used for this purpose.

(iii) From surveys among both migrants and recipients it is evident that, using Saith's (1989) distinction, some are saver-rentiers and others are saver-investors. From the flea-market survey, it is also evident that some have evolved into full-scale entrepreneurs resulting, in some instances, in investment linkages with other sectors of the economy. However, there is no basis to believe, from these findings, that all migrants could or should become entrepreneurs.

From the micro-level survey data it is not possible to assess the extent to which suitable avenues and opportunities for investment in the domestic economies of Tonga and Western Samoa do exist, and, the extent to which these are constrained by savings and foreign exchange. Clearly, it is not possible to assess the validity of the past two assumptions concerning the opportunities for domestic investment and the extent to which these are savings constrained. However the findings of other research suggest that these assumptions are also open to question and in need of further examination. As part of this ILO research project an econometric analysis of secondary data on savings and remittances in Tonga and Western Samoa was undertaken (Foster 1993). The findings of this study question the assumptions that investment in Tonga and Western Samoa has been savings constrained, that the most appropriate use of migrants' savings would be in domestic investment, and that migrants would necessarily make the best entrepreneurs.

On the other hand, the same study found that migrants' remittances were not insensitive to relative real interest rates. In support of the micro-level evidence, it was also found that remittances were not transferred simply for consumption support, and that:

... total remittances also serve as a channel for loanable funds, some targeted at savings assets and some as loans to family members for investment purposes. Not only are migrants an important source of loanable funds, but their propensity to hold savings assets in their home country also appears to be sensitive to the average level of real interest rates. (Foster 1993 p.94).

In other words, this finding implies that it is not the availability of loanable funds per se that constrains investment. It is rather the return on investment (or other assets) that determines the migrant households' willingness to transfer their savings to their home countries. The supply of savings is thus open to policy intervention. In practice, real interest rates in Tonga and Western Samoa have been negative or very low, which could account for a shortage of loanable funds. These findings led Foster (1993) to conclude that 'there is little doubt that attractive interest rates will attract inflows into savings asset, either directly or indirectly' (p.96). Policy makers must therefore regard remittance levels as potentially responsive to policy interventions and the provision of special incentives for investing migrants. Until such time as the financial authorities in Tonga and Western Samoa offer internationally competitive real interest rates to savers migrants may choose, quite rationally, to hold their savings elsewhere.
6.3. Investing the remittances?

In conclusion, combining the findings of both micro- and macro-level studies suggests support for the assumption that remittance levels would be sensitive to policy interventions affecting relative real interest rates, but not for the assumptions that this would (or even should) be directed towards domestic investment and that the migrants (or their families) would necessarily make the best entrepreneurs. The evidence suggests that indeed some migrant families have evolved into investing entrepreneurs, and are spread over a number of countries in the region, principally Australia, New Zealand, Hawaii and mainland US (California). The savings and investment decisions of the migrant family can be likened to those of a multinational corporation. It was seen that, where opportunities arise, remittances are used for investment and can be investment-motivated. However, this raises the broader issue, relevant to all labour-exporting countries, concerning the general investment climate. Even where the migrant does possess the necessary entrepreneurial potential, if the general investment climate in the remittance receiving economy is not conducive to entrepreneurial ventures it cannot be expected that the migrant will be willing to risk his or her capital in an investment in the domestic economy when much safer alternatives exist elsewhere.

In the context of other Asia-Pacific countries Saith (1989) argues likewise. He questions the wisdom of adopting policies in the belief that the migrant-saver can be converted to a migrant-investor. He maintains that

> While this approach could suit those with prior experience in the chosen activities ... in general, such a strategy is prone to several weaknesses. Firstly, it places workers in high risk situations. Secondly, these projects are very small sized and as such miss out on scale advantages. Thirdly, there is a high propensity to concentrate in the trade and commerce, and petty transport sectors involving substantial duplication and ensuing loss of efficiency and profitability in the sectors. (Saith 1989 p.50).

In view of these sorts of problems, in addition to other factors affecting the general investment climate, it would make better sense for policy to be geared more towards the majority of migrants with a view to at least encouraging them to become more active in the domestic capital markets as a saver-rentier. This would necessitate the governments in the Pacific Island economies offering savers competitive real interest rates. The loanable funds accumulated in this way could then be invested either in larger projects domestically or, where no suitable opportunities exist, they could be held as overseas assets denominated in foreign currency, and at the best possible rate of return.

The accumulation of financial assets abroad would provide the necessary income security to the migrant households, and a `protective buffer' against adverse developments both in the labour-sending country (such as cyclones) and elsewhere (such as recessions and rising unemployment levels). Indeed, two Pacific Island countries, Kiribati and Tuvalu have such buffers in place. Kiribati set up a Revenue Equalisation Reserve Fund (RERF) in 1956 as a trust fund to be built up from the profits from its main, non-renewable phosphate exports. Tuvalu established the Tuvalu Trust Fund (TFF) along similar lines in 1987. These funds are invested abroad and have achieved high rates of return, which in Tuvalu's case averaged 19 per cent in the first four years of operation. The revenues from the funds are used by government as a source of budgetary revenue.

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32 Phosphate exports ceased in 1979.
If migrants' remittances in labour-exporting countries were channelled into such overseas funds, they could be managed as cooperatives or pension funds to provide their families with the necessary income security they currently seek by investing in raising and educating migrant offspring. There is strong evidence in the South Pacific in support of Stark's (1991a) notion that the migration decision is best understood as part of the family's risk reduction or consumption-smoothing strategy which he likens to portfolio-investment strategy of a firm. Foster (1993) believes that provision of increased income security through establishment of an offshore trust fund would reduce the families' dependence on large numbers of offspring and the remittance income thereby generated. Its need to raise children could thereby also reduce the population growth rate. If and when investment opportunities arise in the labour-sending countries' domestic economies, such offshore funds could also provide an important source of venture capital. Promoting the use of remittances in this way is an option that governments in all remittance-receiving economies need to consider as a serious alternative to current policy objectives.
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List of International Migration Papers
