Migrant remittances in the state of Kerala, India

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Migrant Remittances and Poverty

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1. Introduction

Migrant remittances are increasingly recognized as an instrument of development for a large number of countries in the transition and the developing world. Several studies are available in the literature that devotes substantial attention to the welfare implications of migration and inward remittances. Some of the major issues center around the effect of remittances on exchange rates (Amuedo-Dorantes and Pozo, 2002; Faini, 1994; etc.), on development finance and macroeconomic volatility (Chami *et al*, 2003; Quartey and Blankson, 2004; Sayan, 2004; etc.) and most importantly, on development and welfare among the non-migrants (Djajic, 1986; Djajic and Milbourne, 1988; Lundahl, 1985; McCormick and Wahba, 2000; Rivera-Batiz, 1986; Rodriguez, 1996; Russel, 1992; Salimano, 2003; Stark et al, 1986 on remittances and inequality, etc.). The present chapter focuses on the impact of migrant remittances on the level of poverty in the state of Kerala in India, which is well known for its large stock of migrant workers. The major impact of such migration on the source country operates through the remittances sent home.[1] The non-migrant members of these households purchase better living standards, school attendance, access to health care facilities, and provisions for future with the aid of such remittance receipts. Therefore, the impact of remittances on development and more specifically, poverty are considerable for all such low and middle-income countries.

Kerala, like most other countries or regions therein produces a heterogeneous group of migrants, living and working virtually all over the world. Admittedly, a larger proportion of migrants, which range from medical practitioners, accountants, lawyers etc. as highly skilled professional, to vehicle drivers, mechanics, construction workers as relatively unskilled workers are located in different countries of the Middle East. The trend has been increasing over time and it naturally attracted attention from various quarters trying to

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[1] Of course there are several other sources thorough which migration affects development and welfare, such as higher human capital formation (see Stark and Wang, 2002).

comprehend the impact of such large exodus on the regional and national levels. While many such studies look at the socio-economic, demographic and political consequences of migration and remittances in Kerala as already discussed, this particular chapter offers some specific assessments that can serve as important components for the overall macroeconomic picture of the province.

It is generally observed that a large part of the remittances are received in kind and transferred through unofficial channels (Agarwal and Horowitz, 2002; Ratha, 2003, etc.) and therefore not accounted for in the overall impact assessment. Albeit further research is needed to reach a general consensus, it is nonetheless understood that larger and more regular remittances originate from among the relatively unskilled sections of the migrants for sustaining their low or middle-income households in the source countries. Consequently, the impact of remittances on poverty becomes a rather important issue for discussion in the related domain, although once again, often constrained by the lack of relevant information.

A few recent studies do offer interesting observations on migrant remittances and poverty. For example, Adams Jr. and Page (2003) consider a large group of low and middle income countries, use country-specific studies on remittances, income distribution and poverty, and conclude that a 10 percent increase in the share of migrants in the country's population (for the cross-country sample) would lower the poverty level in the country by 1.6 percentage. It is interesting to note that even the physical volume of international migration – defined as the share of a country's population that is living abroad – has a strong impact on reducing poverty in the developing world.

They also establish that the poverty head-count ratio (henceforth, HCR), the poverty gap index (henceforth, PG, measuring depth of poverty) and the squared poverty gap index (hereafter, SPG, measuring severity of poverty) all respond negatively and significantly to both emigration and inward remittances. This should imply that if more remittances flow into the host economy (or if the country produces more emigrants, and it may be causally related), it is capable of reducing not only the absolute number of poor people in that country, but also the mean distance below the poverty line (as percentage of the poverty line, and measuring the spread of poverty below the poverty line).[2] Individual country studies also largely corroborate these results in addition to bringing up other issues of considerable importance for many poor migrant sending economies. Quartey and Blankson (2004) for example, show that migrant remittances tend to move in opposite directions vis-à-vis household income and help to reduce the impact of macroeconomic shocks in Ghana through consumption smoothing. Similarly, Aredo (2004) observes the effect of remittances on the extent of urban poverty in Ethiopia and conclude that remittances help managing risk facing members of the households in adverse situation (viz. during food shortages due to climatic factors, such as drought or flood, loss of occupation due to economic problems, etc.).

All of these studies also note that migrant remittances have been steadily increasing for many of the developing countries and India which is well known for its large annual remittance receipts is no exception. The official remittances to India in the 2005-06 financial year reached 21 billion USD and a large part of this flowed in to Kerala, a southern province, producing the largest share of emigrants in the country. While, the migrant remittances contribute about 3 percent of India's GDP presently, the share of remittances in the net state domestic product (NSDP) of Kerala is quite large. This, and of course the impact such large transfers creates for the local economy may be one of the reasons why the state of Kerala, unlike any other province in the country, maintains a systematic record of emigration (mainly to the Gulf countries in the Middle East) and a moderately long time series data on official remittances received. This has been accompanied by more micro level data accumulation through a survey of 10,000 migrant households in various districts of Kerala conducted by

[2]For India, the Poverty Gap Index for the year 2003-04 has been 8.1.

Zachariah *et al*. (1999) offering information on a large number of demographic dimensions associated with migration and remittance receipts for these households. The large repository of information has subsequently been used for reflecting on the socio-economic and demographic implications for Kerala (Kannan and Hari, 2002; Zachariah *et al.*, 1999, 2000, 2001; Zachariah and Rajan, 2004, etc.).

The aspects covered in this chapter have eluded the literature so far, and may be sufficiently useful in understanding the complementary macroeconomic implications of remittances for the province of Kerala. The focal point of the paper as mentioned earlier is the causal implications of inward migrant remittances on poverty. This constitutes an in depth analysis of the role of remittances as affecting urban and rural poverty levels in Kerala. A working hypothesis in this regard would certainly be in favor of lower head count ratios resulting from remittance. In other words, a rise in the flow of remittances is expected to reduce the number of people living below the poverty lines in both urban and rural parts of the province. However, the degree of such improvement may be conditional on several factors that we discuss below.

Before delving deeper into this relationship, it would be appropriate to examine certain other features characterizing the flow of migrant remittances in Kerala. This includes observing whether there exists any structural change in the aggregate flow of both emigrants and remittances for Kerala. In other words, measurement of structural change helps to identify whether there has been any sudden shift or alteration in the general trends in these items. Next, we study whether real remittances in Kerala move ‘pro-cyclically’ or ‘counter-cyclically’ with real NSDP (Net State Domestic Product at 1993 prices) over a period of 31 years between 1973 and 2003. A pro-cyclical movement of the real remittances should imply a strong correlation (or co-movement) between macroeconomic up-swings or downswings in the state and the flow of remittances, while counter-cyclical tendencies refer to situations, where remittance flow is observed to decline as the household income or state level income increases. On the one hand, it is an interesting observation in the sense that it can reflect on the general perception on the nature and purpose of remittance flows, and on the other it can influence suitable policy formulations.

The rest of the chapter is organized as follows. Section 2.1 offers a brief discussion on the evolving fiscal and financial conditions in India that helps to locate the issue of migrant remittances in a relevant context. This subsection also includes a brief description of the changes in trade and capital market policies that may have been significant in affecting both emigration and remittance inflows. Before venturing into the remittance-poverty nexus in section 2.2 we briefly offer observations on structural changes and cyclical tendencies of real remittances (nominal remittances divided by the consumer price index). Data for all these exercises are obtained from various issues of the Economic Review – Kerala State Planning Board and Zachariah and Rajan (2004). Section 3 concludes with general observations and policy implications.

2.1 Reforms, Migrant Remittances and Fiscal conditions in India

For a country that receives large flow of remittances on a regular basis, the impact on the balance of payment is often put under close scrutiny.[3] As per the prevailing law on the status of workers, who remain outside India for more than 186 days during a financial year and therefore regarded as non-resident Indians (NRIs), the remittances received from such sources are recorded under current transfers. In India workers' remittances comprise transfers towards family maintenance, personal donations and gifts to charitable trusts, repatriation of savings by Indian residents abroad, etc., (these are distinguished from capital movements which involve transfer of ownership of fixed assets, and forgiveness of liabilities

[3] See Table 1 for the volume of inward remittances in India between 1991 and 2006. These receipts are distinguished by the types of accounts and transfers as described in the figure, and as documented by the Reserve Bank of India (RBI).

by creditors). A description of such flows is given in Figure 2 below. Since 1997-98, the official statistics have clubbed these disaggregated entries in to a generic head 'inward remittances from Indian workers abroad for family maintenance, etc.' These official transfers, however, capture only a small portion of the total receipts, since it is widely known that a significant volume of workers' remittances transit through informal channels, goods and precious metals and gems, and cash brought in by returning Indians. With the institution of the market-determined exchange rate regime and current account convertibility in the early 1990s, workers' remittances recovered from the stagnation of the second half of the 1980s to cross US \$ 8 billion by the mid-1990s. As the premium commanded by the unofficial exchange rate declined significantly and trade and payment restrictions eased, workers' remittances were channeled through new routes other than the traditional categories described earlier. For instance, with the liberalization of bullion imports by allowing them to be brought in as baggage by returning Indians under a nominal customs duty, remittances took the form of gold and silver which rose from US \$ 1 billion in 1992-93 (the year of liberalization) to nearly US \$ 3 billion before being completely extinguished by the full relaxation of bullion imports under open general license. Another route of inward remittance from workers' has traditionally been through local withdrawals from deposit accounts offered to NRIs. In recent years, this route has gathered importance enough to warrant separate classification. Furthermore, India was denied access to international financial markets by the downgrading of sovereign credit ratings throughout the 1990s. During this difficult period, India issued foreign currency bonds directed specifically at the Indian diasporas abroad with attractive interest rate differentials, exchange guarantees, fiscal concessions, and facilities for local transfers. In retrospect, these issuances turned out to be effective avenues for the securitisation of workers' remittances as the bulk of these bonds were redeemed locally. The changing profile of workers' remittances under private transfers clearly shows that transfers in the form of unrequited one-way flows not involving quid pro quo (gifts and donations) are only a miniscule portion of India's private transfers.

The 1970s ushered in sweeping changes in the economic environment – the collapse of the Bretton Woods pegs, the first oil shock and starting up of massive private capital flows. In India, the move to an adjustable pegged exchange rate regime, based on a trade-weighted basket of currencies, corrected for the overvaluation in the exchange rate. Coupled with a rise in international prices of gold, brought about a sharp decline in the premium commanded by the unofficial exchange rate and a disincentive for routing workers' earnings through informal channels. Simultaneously, the national authorities undertook measures to provide financial incentives to draw earnings from Indian labor in to banking channels. These policy measures took the form of introduction of foreign- and local-currency denominated deposit schemes with significant interest rates *vis-à-vis* international and domestic interest rates. Foreign currency deposits were provided exchange rate guarantees and both kinds of deposits were provided tax benefits and full repatriability. Explicit in these policy measures was a clear understanding that earnings from Indian labor deployed abroad are sent home through a variety of channels and that there were policy instruments which could garner these flows to overcome the foreign exchange constraint. For the authorities, the definitional restrictiveness of workers' remittances in current account was by no means an impediment to tapping the legitimate rewards of the successful and time-tested capability of locating domestic labor internationally. Indeed, a similar approach characterized a number of recipients of labor earnings – foreign exchange bearer certificates in Pakistan, dual exchange rates in Bangladesh, foreign currency deposits in Turkey, *matriculas consulares* in Mexico to name a few.

Over the years, net inflows into NRI deposit accounts in India have grown significantly in terms of magnitude even as the deposit schemes have been restructured to narrow interest differentials and eschew exchange guarantees. Encouraged by the success in mobilizing labor earnings through the financial account of the BoP, especially in difficult times, the authorities have employed foreign currency bonds as well as direct and portfolio investment channels specifically designed for Indians working abroad. Foreign currency bonds have brought in US $ 11.3 billion since 1991 and have helped the economy to tide over the crisis of 1991, the sanctions imposed by the US (1998) and the adverse global environment (2000). As mentioned earlier, a predominant portion of these bonds re-entered the country on redemption either as current transfers or as inflows into the deposit schemes, clearly identifying the centre of economic interest. Importantly, inflows of labor earnings in to the financial account have occurred without diminishing inflows in to the current account. This suggests that there has been switching of funds from illegal to legal channels. For the recorded BoP statistics, therefore, there has been an addition rather than substitution of workers' remittances.

2.2. Migrant Remittances and Poverty in Kerala

As discussed above, we begin by a brief characterization of the structural changes and cyclicality involving emigrants and migrant remittances for Kerala. Table 4 provides evidence on the magnitude of emigration from Kerala and the remittance received.

a. Structural Changes in Emigration and Remittances

Identifying structural changes for a variable observed over a period of time provides an important step in revealing the true nature of the time dimension embedded in that series. Stated simply, the structural change helps to identify if the variable under consideration reports any movement for a particular year (or over a number of years) that is different from the trend line it generally follows. Now a relevant question is what inference does one draw out of this observation? While there may be many interpretations, the one useful in the current context would be that if structural changes are of uncertain magnitudes and timing they increase the difficulty in forecasting, complicate our interpretation of the relevant variables and often misguide policy choices based on our understanding of the prevailing and future trends in the economy. [4]

We find that the aggregate emigration from Kerala varies significantly over the period under consideration. To be precise, the emigration trend has followed the 'expected' trend till 1999 identifying the break year, after which it has taken a sudden leap. The structural changes may have been in turn influenced by several changes in both the local economy and the destination countries, an investigation into which is beyond the scope of the present study. However, an even more modified test display that the emigration trend did not follow the trend for most of the time, i.e., between 1984 and the middle of 1999, after which it follows the trend again till the end of period in 2003. Similarly for the trend in total remittances, one can observe that between 1984 and middle of year 2000, the remittances do not follow the expected trend line. The tendency of not following the time pattern is even more pronounced in the case where migrant remittance is calculated as a fraction of the net state domestic product in Kerala. This simply means that the expected trend in such share is either above or below the expected path.[5]

b. Do migrant remittances move with the income cycles in Kerala?

An investigation into the relationship between cycles in net state domestic product in Kerala and the remittance inflows demands information on the fluctuations around observed trends for each variable.[6] Recently, Sayan (2004) studies the cyclicality of Turkish

[4] In economics, the structural change is calculated by using the well-known Chow Test. For further detail, see for example, Davidson and MacKinnon (1993).

[5] All the above information can therefore be summed up in the following Table (Table 2).

[6] A well-known method, namely the Hodrick-Prescott filter separates the trend of each series (i.e. de-trends) from its cyclical (fluctuating) components. The test of pro-cyclicality or counter-cyclicality between two variables is in obtaining the correlation between the cyclical components of the variables and not the trends. At

remittances originating in Germany to find that it is pro-cyclical (as defined in the previous section) with the real GDP in Turkey, but acyclical with the real gross national income in Germany. Presently, we comment on the main findings from the application of this methodology to the case of Kerala. Pro-cyclicality (counter-cyclicality) indicates the tendency of real remittances to move above the trend, when the corresponding real income variable is above (below) its respective trend.

Subsequently, we have re-calculated the aggregate remittances and the NSDP as real remittances and real NSDP respectively, by using CPI for industrial workers (base year 1993) as the price deflator. Now, we calculate the contemporaneous correlation coefficient between the cyclical fluctuations in real remittances and real NSDP at 0.481, which leads us to conclude that the real remittances flowing to Kerala is strongly pro-cyclical with the real NSDP between 1973 and 2003. In terms of policy, it should mean that a rise in state income attracts more remittances in the province and therefore the entire economy can attain higher levels of both simultaneously. However, on the flip side, a downturn in state performance would influence lower inflow of remittances and can cause further distress. The other aspect requiring emphasis is the fact that migrant remittances do not play the role of insurance against visible distress in the economy. One possible explanation of this aggregative feature is that, workers tend to migrate more under better circumstances prevailing at home and subsequently send back remittances, while staying around in the home country in case of general distress. Clearly, this has enormous implications for poverty alleviation arising out of remittance movements that we explore next.

c. *Effects of Migrant Remittances on Poverty*

Finally, let us concentrate the analysis on the impact of migrant remittances on urban and rural poverty levels in Kerala between 1973 and 2003. Given the fact that the migrant

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the regional or state-level this requires de-trending the real remittances and the real NSDP and isolating the cyclical counterparts.

remittances received in Kerala increasingly constitutes a large percentage of the NSDP (a rise from 0.57% in 1973 to about 23% in 2000; Kannan and Hari, 2002), it is expected that the impact of the remittance earnings (both cash and kind) is positive and significant on the income and consumption levels of not only the direct recipients of the remittances but also for the larger society.

One may start by following the growth-poverty relationship as in Ravallion and Chen (2001) and recently applied in Adams Jr. and Page (2003) to measure the impact of remittances on poverty for a group of developing countries. As briefly mentioned before, for 74 low and middle-income countries Adams Jr. and Page (2003) find that remittances (emigrants) as share of a country's GDP (population), the country's GINI coefficient (measure of income inequality), the per capita GDP itself and the per capita (per head) mean expenditure for respective countries all significantly explain the decline in poverty head count ratios and the depth and severity of the same. In particular, they find that a rise in the share of remittances in a country's GDP lowers the share of people living in poverty by 1.6 percent.

There are a few country-specific experiences reported in the literature as well. For example, Zarate-Hoyos (2004) shows that for Mexican households receiving monthly remittances of $476 on an average tend to invest and save a larger portion of that inflow and that there is no evidence of any demonstration effect on current consumption. The remittance flow is however, more concentrated in few regions and select municipalities within those regions. Also, the average annual growth rate of remittance receipts is about 100 percent for urban and 75 percent for rural households in these regions. The study also finds positive impact of remittances on the physical well-being, quality of housing, labor productivity etc. across the sample households.

While a detailed connection between remittances and poverty at the aggregative level is unavailable for India despite large remittance inflows into the country, region-specific data and analyses for Kerala have been considerable. For example, Zachariah *et al.* (1999, 2002) claim that the outreach of the remittances received is substantial among the local inhabitants – contributing to their educational, health and other conspicuous consumption expenditures. The benefits of remittances are also expected to be more widely dispersed for Kerala than what is observed in most other regional or country experiences, typically because the emigrants originate not from one or a few major locations, but from all over the state covering both predominantly urban and rural districts (Map in the appendix). In fact, the districts of Malappuram and Kannur separately produced more emigrants in 2004, than the capital city of Thiruvananthapuram (Table 3). Also, the percentage change in emigrants from several districts (Kottayam registers a 200% increase within a five year period) is quite high compared to the state capital. Therefore, it is quite plausible that the impact of remittances is considerable for both rural and urban poverty levels in the state. This motivates the present exercise in measuring the impact of Remittances as a share of NSDP on the urban and rural head count ratios for the province of Kerala, the poverty gap and the squared poverty gap obtained from the state level and national level surveys on poverty and inequality. It is also clearly documented in several other studies on poverty and inequality in India, that national or state level surveys report the percentages of poor people and the gini coefficients only intermittently over a period of time. The poverty and inequality measurements available for this purpose have only 13 entries for the state of Kerala between 1973 and 2003. Using these, we construct a panel data set (cross-section and time series, together) between 1973 and 2003 where our intention is to explain the changes in HCR urban and rural, poverty gap and squared poverty gap subject to changes in Per Capita NSDP (PCNSDP), the GINI Coefficient for Kerala, the Average Per Capita Expenditure (APCE) and the Remittance as proportion of NSDP (REM/NSDP). In fact, by manipulating the data with logarithmic values (due to varying units and uneven values) we obtain the elasticity (sensitivity) of the impact of a change in each of these explanatory variables on the choice of dependent variable and this can be directly utilized for designing policies to lower the extent of poverty. For example, if one obtains that HCR for urban households is negatively related to PCNSDP and the elasticity is high, it should imply that decline in urban poverty is highly sensitive to rise in PCNSDP, and similarly for all other factors.

The major findings include the following.[7] The urban head-count ratio (HCRU) and the rural head-count ratio (HCRR) register negative sensitivities with both PCNSDP and (REM/NSDP), although the former is not significant by pure technical criterion. The sensitivity of head count ratio to the remittance share in NSDP is quite small for both urban and rural areas. However, the absolute value of the level of sensitivity of HCRR to (REM/NSDP) is higher than that of HCRU to (REM/NSDP). This implies that a 100 percent increase in remittance as share of NSDP shall reduce the rural head count ratio by 8 percent compared to a possible reduction in urban head count ratio by 7 per cent. When it comes to poverty gap (PG) and squared poverty gap (SPG), the (REM/NSDP) continues to have a negative sensitivity and of increasingly higher magnitudes, however, again with inadequate technical significance to accept them as deterministic. It is probably not unexpected that remittances as share of NSDP by itself would not be instrumental in lowering the depth and severity of the poverty situation in the province. The sensitivity of both rural and urban poverty estimates, with that of the level of inequality (GINI) are close to one and highly significant. In other words, higher the level of inequality, higher is the level of poverty and it follows an almost one-to-one correspondence. In isolation such a result is neither novel nor unexpected. What is special about our finding is the fact, that we consider such changes in the rural and urban poverty measures in the presence of remittance receipts by respective households, when remittance receipts by itself can alter the level of intra-household

[7] The complete econometric exercise may be made available to the interested reader on request.

inequality. Our findings show that it is quite likely to expect a rising income inequality between the households owing to inflow of remittances and that in turn can exacerbate the poverty situation.

In brief therefore, the relationships explored in this section clearly identify certain sources that can help to reduce rural and urban poverty in a significant manner. For example, the relationship between the remittance as share of NSDP and both HCRU and HCRR being negative it implies that a higher relative contribution from migrant remittances directly reduces the poverty levels. The impact is reinforced if one brings in the role of average per capita consumption expenditure as being influenced by remittance flows and then influencing the poverty reduction in a meaningful way.

3. General observations and policies

On the basis of the above findings what one needs perhaps is a policy thread that by taking cognizance of these aspects can construe adequate responses to dissipate the benefits to individuals as well as to the larger society. I believe that this should start by recognizing the fact that remittances are very individualistic in nature and that both positive spillovers and externalities arising out of emigration or remittance receipts are uncertain and unaccounted for. Migration and remittance transfers have been results of individual optimizing behavior as a dominant mechanism and were mostly uninfluenced by social returns it might generate. For example, it is indeed likely that positive probability of migration in a society induces human capital formation among the non-migrants when social returns from such action accumulates over private returns. In this connection, one needs to find out the flow of migrants and remittance receipts based on what is optimal for the society. Besides, given the huge stock of migrants and yet a limited dependence on private actions to foster local economic growth, there is a strong cause for public intervention to take stock of the advantages and disadvantages and adopt corrective measures if required. This calls for systematic information on the pattern of emigration and mode of transfers, which subsequently can help to design suitable tax-subsidy schemes for promoting technical education, language proficiency etc. A greater provision of public goods including schools, health care systems or publicly managed immigrant advice centers created with direct contributions from the immigrants themselves can help to realize some of the positive externalities that individual decisions generate but without being aware of it and therefore either over-performing or under-performing on each such action. It is established in the concerned literature that probability of migration up to a certain level is welfare enhancing for all non-migrants both in terms of human capital formation and average income growth. This implies that a well-designed migration policy enforced by the government is always better than one that is fully influenced by private decisions alone.

Seasonality of migration or remittance receipts can also be an important source of information for state budgetary provisions to tide over periods of general distress – after all migration and remittance receipts are both significantly influenced by state of affairs prevailing in the destination. During the recent Gulf wars many migrants from Kerala had to leave their jobs and return home facing an uncertain future. If the local government actually internalizes such possibilities, all such transitions may be less difficult for the migrants. Apart from that, what is meant by the social externality of migration may be elaborated with an example. Consider a poor village, which regularly sends immigrants to a foreign country (could have been caused by some initial connections or social network with prior migrants and so on) and the residents send back remittances in cash or kind. The prime beneficiaries are obviously the members of that household which has sent out the worker. The increased wealth in that household (and many such households) would spillover to the local markets, financial intermediaries and so on. However, if the village was initially devoid of better educational or health facilities, it is not necessary that the situation would drastically change due to such income effects. It is possible that private facilities may develop to cater to these richer households, but it may not be automatic and hardly inclusive, and the general problem of market failure may continue (consider unavailability of paved roads, covered sewage system, street lights, drinking water etc.). The households that can afford so might even move to a location where better facilities are sufficiently available, creating both interpersonal and inter-regional disparities in income. Without voluntary and consorted efforts among the rural beneficiaries to set up these facilities (which is again subject to several impediments, including the free-rider problem) or active involvement of the state in providing the same by suitable taxation schemes on remittance receipts, the benefits of remittances can only be very individualistic. The participation of the government in managing the flows is thus important in the sense that relevant information on various aspects that potentially influence migration and remittances are often external to individual agents and can be better acted upon in a macroeconomic set up. The same holds true of the remittance flow and a central repository of information and resources might play a very important role in devising incentive schemes either to stall or facilitate migration depending upon the social optimum. Thus, it is imperative on the part of the state to take stock of the impact of migration and remittances from time to time and use the information to revise the existing policies.

The Kerala case study also points out some serious lacuna in understanding and interpreting the effects of migration and remittances in general. While the information on Kerala is available to a considerable extent, there are many other regions within the country with substantially large flow of emigrants that do not preserve any systematic account of either the migrants or of the remittance inflow. The concerned departments should prioritize collection and dissemination of the relevant information. Second, the impact of remittances as commonly observed are rather localized in character, which again can potentially create pockets of affluence as also high dependence on such external sources of income. The state should act more specifically to create cushions against any adverse income shocks (remembering that a significant share is generated from dependence on oil resources in the Middle East) and offer guidance towards alternative choices, among which fostering higher levels of human capital enabling wider options should be a priority. This is even more important in the wake of Mode 4 movement of natural persons as being negotiated under the GATS, which requires that the potential migrant is at least a bachelor's degree holder to qualify for the schemes. Interestingly, the state can utilize the enormous resources floating around as migrant remittances to the advantage of both migrants and non-migrants by using the funds towards building of infrastructure that can generate high returns on each unit of capital invested. Once again, some of these policies have been put to test in Kerala and the rest of the country must take these features more seriously to explore a very potent source of development. After all, poverty is not limited to lack of income alone, there are several other factors that are equally important.

Table 1. NRI (Non-resident Indian) Deposits Outstanding (US$ mn.)

Year (end-March)	NR(E)RA	FCNR(A)	FCNR(B)	NR(NR)RD	FC(B&O)D	FC(O)N	Total
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
1991	3618	10103	-	-	265	-	13986
1992	3025	9792	-	-	732	-	13549
1993	2740	10617	-	621	1037	-	15015
1994	3523	9300	1108	1754	533	12	16230
1995	4556	7051	3063	2486	-	10	17166
1996	3916	4255	5720	3542	-	13	17446
1997	4983	2306	7496	5604	-	4	20393
1998	5637	1	8467	6262	-	2	20369
1999	6045	-	7835	6618	-	-	20498
2000	6758	-	8172	6754	-	-	21684
2001	7147	-	9076	6849	-	-	23072
2002	8449	-	9673	7052	-	-	25174
2003	14923	-	10199	3407	-	-	28529
2004	20559	-	10961	1746	-	-	33266
2005	21291	-	11452	232	-	-	32975
2006 P	22070	-	13064		-	-	35134

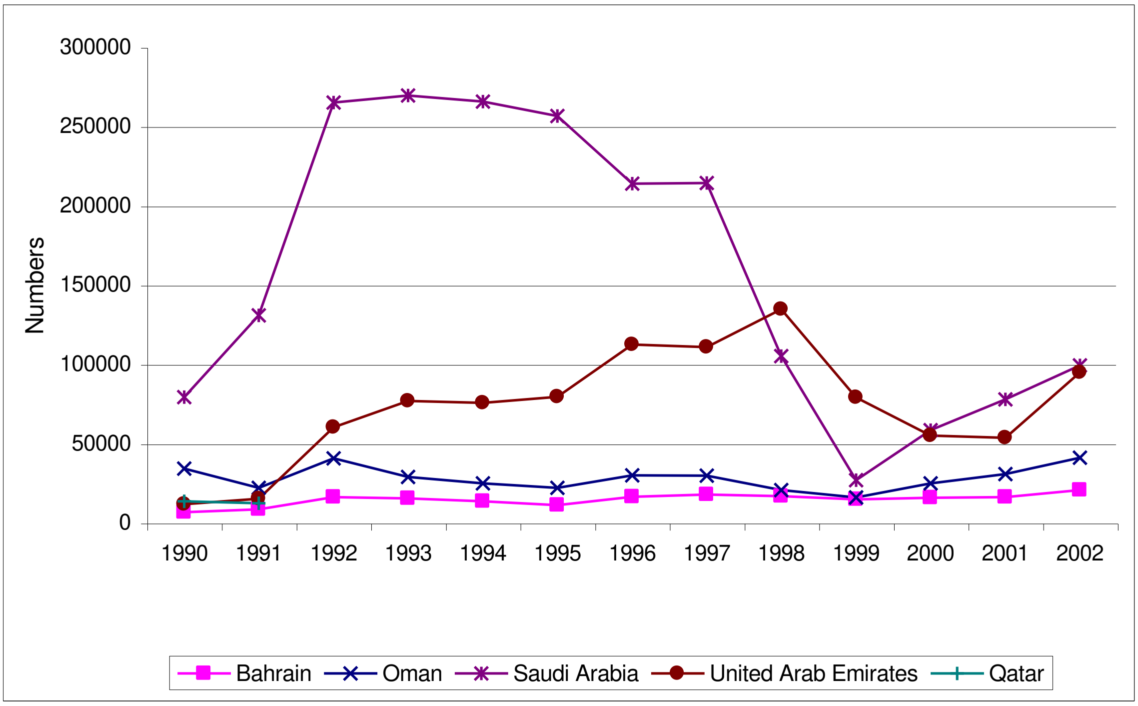
P Provisional
FCNR(A) Foreign currency non-resident (accounts).
FCNR(B) Foreign currency non-resident (banks).
FC(B&O)D Foreign currency (bank and other) deposits.
NR(E)RA Non-resident (external) Rupee accounts.
NR(NR)RD Non-resident (non-repatriable) Rupee deposits.
FC(O)N Foreign currency (ordinary) non-repatriable deposits.
Source: Reserve Bank of India, Handbook of Statistics on Indian Economy

Table 2. Stability Patterns for Total Emigration, Total Remittances and Remittance/NSDP

Variable	Time Trend Follower		Break Year	
	Test 1	Test 2	Test 1	Test 2
Total Emigration	Unstable	Unstable	1984-1999	1984-1999.6
Total Remittances	Stable	Unstable	None	1984-2000.6
Remittance/NSDP	Stable	Unstable	None	1984-2002

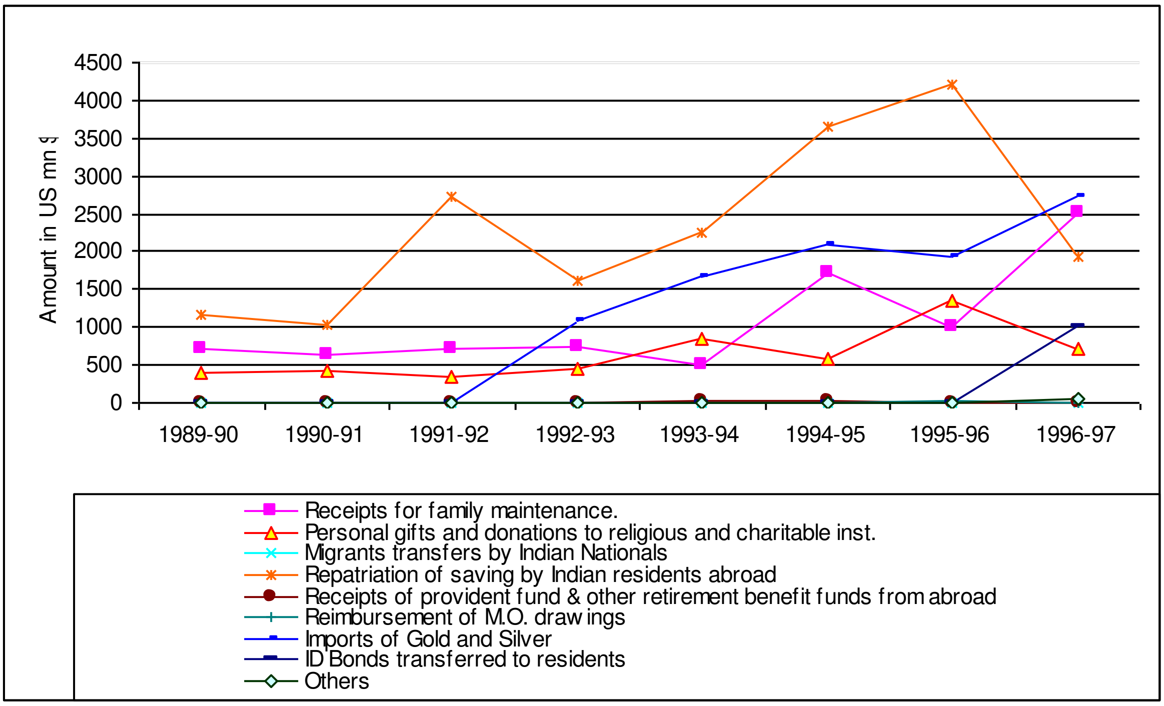
Note: Test 2 is a modified and more reliable version of Test 1.

Figure 1: Indian Immigrants in the Gulf Countries



Source: Labor Bureau, GOI, various years

Figure 2: Distribution of Private Transfers from Non-Resident Workers



Source: Reserve Bank of India, various years.

Table 3. Distribution and Change in total number of Emigrants for Districts in Kerala between 1999 and 2004

District	Emigrants			Emigrants per 100 Households			Return Emigrants		
	2004	**1999**	**% Change**	**2004**	**1999**	**% Change**	**2004**	**1999**	**% Change**
Thiruvanantha-puram	168046	130705	28.57	21.5	19.9	8.04	103059	118878	-13.3069
Kollam	148457	102977	44.17	24.4	18.4	32.61	69314	74106	-6.46641
Pathanamthitta	133720	97505	37.14	44.3	33.1	33.84	83502	54537	53.11073
Alappuzha	75036	62870	19.35	15.2	13.2	15.15	43109	34572	24.69339
Kottayam	106569	35494	200.25	24	9.1	163.74	28368	18164	56.17705
Idukki	7880	7390	6.63	2.9	2.9	0.00	3766	5017	-24.9352
Eranakulam	121237	103750	16.85	16.9	17	-0.59	74435	45028	65.30825
Thrissur	178867	161102	11.03	27.2	25.6	6.25	86029	116788	-26.3375
Palakkad	177876	116026	53.31	32.6	21.8	49.54	55008	39238	40.19063
Malappuram	271787	296710	-8.40	45	49.2	-8.54	141537	123750	14.37333
Kozhikode	167436	116026	44.31	28.6	22	30.00	109101	60910	79.11837
Wayanad	7704	4552	69.24	4.4	2.9	51.72	3852	3327	15.77998
Kannur	202414	88065	129.85	43.2	19	127.37	45394	28263	60.61282
Kasaragod	71449	38747	84.40	30.6	19.1	60.21	47468	16667	184.8023
Total	**1838478**	**1361955**	34.99	**26.7**	**21.4**	24.77	**893942**	**739245**	20.92635

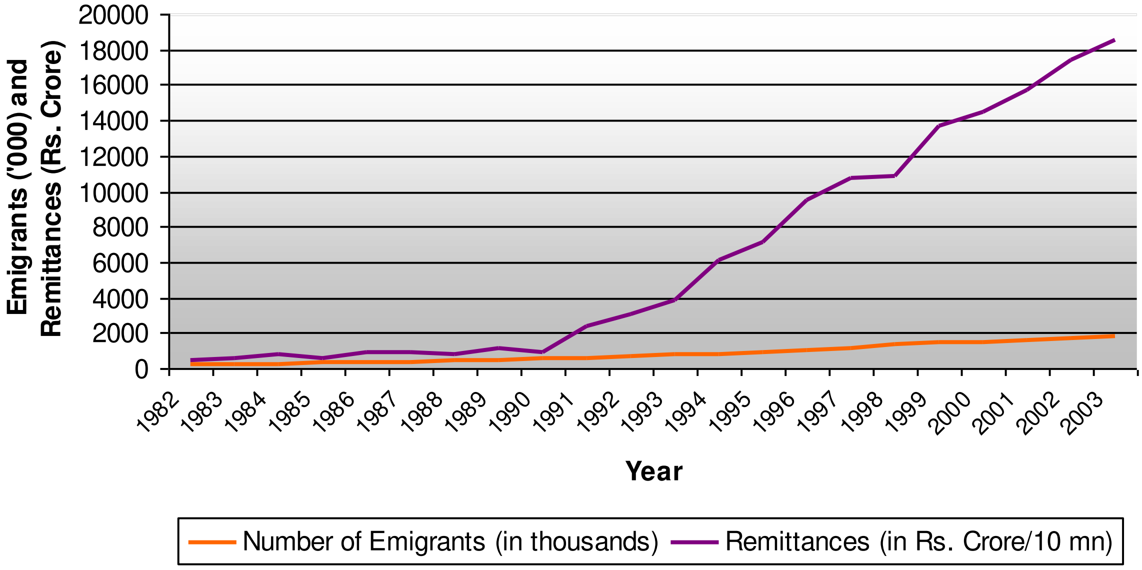
Source: Kerala State Planning Board, Economic Review 2004.

Table 4. Total Number of Emigrants and Remittance Receipts in Kerala

Year	**Number of Emigrants**	**Remittances** (Rs. Crore)
1982	230740	432
1983	274804	568
1984	273342	780
1985	313980	523
1986	329083	861
1987	364909	891
1988	405513	824
1989	449611	1156
1990	510214	873
1991	566668	2428
1992	637103	3025
1993	754544	3882
1994	819025	6084
1995	957388	7069
1996	1062376	9521
1997	1178589	10761
1998	1318489	10817
1999	1412649	13652
2000	1501917	14438
2001	1600465	15732
2002	1717695	17362
2003	1844023	18475

Source: Kerala State Planning Board.
Note: 1 Billion = 100 crores

Figure 1. Total Number of Emigrants and Remittance Receipts in Kerala



Remittance and Poverty – Econometric Specifications

The econometric specification of the problem is given by:

$$\ln(P_{it}) = \alpha_{it} + \beta_{1i}\ln(PCNSDP_t) + \beta_{2i}\ln(gini_t) + \beta_{3i}\ln(REM_t / NSDP_t) \qquad (3)$$

Here, $\ln(P_{it})$ stands for different measures of poverty (*i*) at time *t* and include, natural logarithms of the head count ratio for urban poor (HCRU), head count ratio for the rural poor (HCRR), poverty gap (PG) and the squared poverty gap (SPG). As discussed, the alternative specification for our econometric model is given by:

$$\ln(P_{it}) = \alpha_{it} + \beta_{1i}\ln(APCE_t) + \beta_{2i}\ln(gini_t) + \beta_{3i}\ln(REM_t / NSDP_t) \qquad (4)$$

where, *ceteris paribus*, ln(PCNSDP) is replaced by the ln(APCE). The results of the regression estimates provide the elasticity of these different measures of poverty and are reported in table 7 and all the regressions generate high values of $\bar{R}^2$. We report only the one-way random effects model for the panel regressions. It is well-known that for the diagnostics test in a panel regression, large values of the Lagrange multiplier (LM) statistic argue in favor of one of the one-factor models against the classical regression with no group specific effects. On the other hand, large values of the Hausman test statistic favor the choice of fixed effects model over random effects model. It follows from the results of both LM test statistics and Hausman test statistics as reported in table 7 for various dependent and explanatory variables that the random effects model is the appropriate choice in every case.

Table 4. Elasticity of Poverty, Estimated using Panel Data One-Way Fixed Effects Model

	Dependent Variable							
	HCRR		HCRU		Poverty Gap		Sq. Poverty Gap	
Explanatory Variable	1	2	3	4	5	6	7	8
Per capita NSDP	-0.0169		-0.0093		-93.59		-93.5	
	(-0.84)		(-0.46)		(-2.31)*		(-2.29)^	
APCE		0.00014		0.000143		0.1509		0.1508
		(1.7)		(1.75)		(0.8)		(0.81)
Gini Coefficient	1.00009	1.00007	1.00009	1.00007	0.756	0.767	0.755	0.766
	(21782.5)**	(22119.5)**	(21603.7)**	(22204)**	(8.1)**	(7.44)**	(8.09)**	(7.44)**
Remittance/NSDP	-0.0733	-0.0939	-0.0779	-0.0964	-54.83	-101.7	-54.82	-101.6
	(-3.34)**	(-4.26)**	(-3.52)**	(-4.39)**	(-1.23)	(-2.02)^	(-1.23)	(-2.02)^
LM-Test Statistic	2.55	2.56	2.5	2.52	2.43	2.67	3.1	2.62
Hausman Test Statistic	0.02	0.01	0.02	0.05	0.02	0.03	0.01	0.02
N	31	28	31	28	31	28	31	28
Adj R-squared	0.9	0.89	0.92	0.87	0.93	0.9	0.92	0.83

t-ratios shown in parenteheses; all values expressed in natural logarithm
** - Significant at 1% level; * - Significant at 5% level and ^- Significant at 10% level.

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