

Do Migrant Remittances Minimize the Impact of Macro-volatility on the Poor in Ghana?¹

By

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TABLE OF CONTENTS

	Page
Executive Summary	3
Section One: Introduction	5
Section Two: Issues on Migrant Remittances & Household Welfare	7
Section Three: Methodology	15
Section Four: Main Findings	19
Section Five: Conclusions	26
Appendix	28
References	30

EXECUTIVE SUMMARY

Migrant worker remittances have been a means of survival for many Ghanaians, particularly in times of macroeconomic shocks. The importance of migrant worker remittances in Ghana is evidenced by the proliferation of money transfer institutions in Ghana (both formal and informal) and the rapid increases in migrant remittances to Ghana. It has been argued that migrant remittances are becoming a potential source of external finance and its magnitude has exceeded the amount of ODA in some developing countries including Ghana. Available data from the Bank of Ghana shows that the amount of remittances to Ghana exceeds ODA and it is therefore of critical concern given considering its growth rate in recent years in particular. The value of remittances increased from \$31 million in 1999 to \$1.4 billion in 2002. It is general knowledge in Ghana that families with migrant workers; particularly those in developed countries are able to withstand shocks to income and threats to household welfare. However, this relationship has not been tested empirically in Ghana despite the fact that the Ghana Living Standards Survey (GLSS) is rich with such micro-data on the economy.

This study therefore pooled Waves III and IV of the GLSS into a pseudo panel and investigated whether migrant remittances have been a source of income smoothing in Ghana, particularly in times of macro-volatility. The major findings include the following: First, it was found that migrant remittances are counter-cyclical in Ghana; inflows of remittances increase in times of economic shocks. Second, remittances significantly affect household welfare and therefore tend to reduce any economic shock that affects household income and consequently welfare. This is particularly true in the case of food crop farmers in Ghana who are 'the poorest of the poor'.

The study found that although remittances are used (in addition to other coping mechanisms) to minimize the impact of economic shocks, remittances are the main coping mechanisms for these group of households in times of economic shock. Moreover, households that own land have better welfare than those without land. Whereas level of education of the household head positively affects welfare, age of the

head of the household negatively correlates with household welfare although this was not significant. The study also found that larger households have reduced welfare, an indication that there is the absence of consumption synergies within larger households. Finally, the proportion of males receiving migrant remittances exceeds that of females. This trend is not encouraging since it has been established that transfers to female headed households have significant welfare effects than those transferred to their male counterparts.

1. INTRODUCTION

Migrant worker remittances have been a form of insurance to many Ghanaians, particularly in times of macroeconomic shocks. The importance of migrant worker remittances in Ghana is evidenced by the proliferation of money transfer institutions in Ghana (both formal and informal) and the rapid growth in the volume of migrant remittances to Ghana. It has been argued that migrant remittances are becoming a potential source of external finance and its magnitude has exceeded the amount of ODA in some developing countries including Ghana. Remittance flows globally currently exceed USD\$100 billion, outweighing the value of official development assistance. Remittance flows have great potential to generate a positive impact in the migrants' home region. Remittances to developing countries amount to some \$65 billion, and this amount exceeds ODA of \$ 55 billion (Maimbo, 2003).

An IMF report (2001) has indicated that migrant remittances are increasingly becoming a more constant source of income to most developing countries with a doubling of annual remittances between 1988 and 1999. Sander (2003) also reported that remittances have proved to be the most stable flow compared to ODA and to private capital flows. In Ghana for instance, there was a comprehensive record on private inward remittances through the banks and other finance companies which showed that such flows amounted to about \$ 1.4 billion in 2002 as compared to \$ 31 million recorded for the year 1999. This officially recorded 2002 figure is considered lower than the actual figure as many migrants use informal mechanisms to send money. In effect, the brain drain resulting from migration is not necessarily negative as has been perceived in some circles, since it provides incentive for individuals and households to make great efforts to obtain a good education. Expatriate nationals therefore serve as important links for financial remittances as well as for trade and technology transmission.

Salimano (2003) notes that remittance flows have concentrated in a group of developing countries. In 2002, Latin America and the Caribbean had the highest level of remittances, totaling US\$ 25 billion, followed by South Asia with US\$ 16 billion and the Middle East and North Africa (MENA) with US\$ 14 billion. Sub-Saharan Africa had the

lowest level of remittances amounting to US\$ 4 billion (with an annual growth rate of 5.2%). Although the amount of remittances to Ghana does not exceed ODA, it is quite significant in view of its growth rate in recent years. Remittances are mostly invested in consumption, health care, education and housing. To a smaller extent, they are also invested in savings, or used for self-employment or small enterprise purposes (Dawson, 1990). Ghana like many other small economies has faced considerable macroeconomic volatility or shocks. Frequent terms of trade shocks, volatility in public consumption, and volatility of credit to the private sector are all significant factors in explaining macro economic volatility in the Ghanaian economy. From the literature, macroeconomic volatility has been identified as one of the factors affecting the degree of income inequality in an economy thereby increasing poverty incidence. In such periods, some coping mechanisms are sought by poor households in order to reduce the magnitude of such impacts on their living standards. One such coping mechanism has been identified to be migrant remittance flows. Remittances can be an important source of income for households and its economic impact has been considered therefore to be beneficial at both the micro and macro levels, at least in the short term.

Whereas remittances are less affected by economic downturns, on the contrary, they are known to rise during periods of downturn or crisis. It is general knowledge in Ghana that families with migrant workers, particularly those in developed countries are able to withstand shocks to income. However, this relationship has not been tested empirically in Ghana despite the fact that the Ghana Living Standards Survey (GLSS) is rich with such micro-data on the economy including private remittances. This study therefore aims to use Waves III and IV of the GLSS and data on economic shocks from the Bank of Ghana to investigate whether migrant remittances have been a source for income smoothing in Ghana, particularly in times of macro-volatility. The report is organized into five sections. Section two reviews the existing literature on migrant remittances, economic shocks and poverty. The third section presents the research methods. This is followed by a section analyzing the GLSS data. The final section provides the concluding remarks.

2. ISSUES ON MIGRANT REMITTANCES AND HOUSEHOLD WELFARE

Remittances are usually viewed as private financial aid that flow directly into the hands of households and the fact that they tend to be counter-cyclical seem to suggest that very often they serve as an important source of both income and consumption smoothing strategies for vulnerable poor and non-poor households. Similarly, the literature analyzing the impact of remittance flows show that these flows are beneficial at all levels, namely, the individual, household, local community and national level and goes to suggest that if well managed it can help reduce poverty at these four levels. Buch and Kuckulenz (2004) also report that worker remittances constitute an increasingly important mechanism for the transfer of resources from developed to developing countries and remittances are the second-largest source, behind foreign direct investment, of external funding for developing countries.

The economic impact of remittances has been considered beneficial at both the micro and macro levels at least in the short term and there is increasing evidence that remittances from abroad are crucial to the survival of communities in many developing countries (Blankson and Quartey, 2003). However, there is scant literature available on the method and techniques for assessing the magnitude of both the micro and macro economic impact of remittances. The relevant literature available mainly concentrates on the main uses to which remittances are applied and also its impact on poverty, income inequality, and developments with little or no reference to economic shocks to income.

Unanticipated economic shocks⁴ affect consumption through income. The mechanisms households may employ to smooth out the impacts of such shocks can take different forms. One such means is to spend accumulated household wealth (Deaton, 1992). However, there are many other mechanisms that individuals and households might employ to smooth fluctuations in consumption. Households may seek to reallocate resources across time, by for example, borrowing from the formal financial markets

⁴ Defined as low agricultural output due to poor rainfall, declines in real wages due to inflation, frequent terms of trade shocks, volatility in public consumption, and volatility of credit to the private sector etc

(Rosenzweig and Wolpin, 1993; Udry, 1994). Households may also change the allocation of resources in any period and this might involve reallocating consumption expenditure away from more durable and deferred expenditure items. A much more important and recent consumption smoothing mechanism is by sharing risk among people within an economy or across countries through private transfers.

In the case of private inward remittances, an unanticipated economic shock such as a fuel price increase or low rainfall recorded during the farming season, or elimination of agricultural subsidies (on inputs such as fertilizer etc) will lead to low output and income shortfalls. Households with relations abroad are likely to be remitted to augment their income and thereby reduce the impact of the shock on welfare. Similarly, a decline in rainfall patterns will lead to low agricultural output which will in turn affect both rural and urban households disproportionately. In the case of rural households, the decline in yield will lead to a decline in farm income which will then affect consumption and hence welfare. Similarly, urban households will experience a rise in food prices and since food accounts for a greater proportion of household budgets in Ghana, household welfare will decline unless incomes are augmented with migrant remittances or other means discussed above.

Despite the importance of remittances for consumption smoothing and also as a source of investment capital, there has not been any formal test of the impact of remittances on households in times of macro-economic volatility. However, there has been growing literature examining how migrant workers' remittances can affect households. Among these studies, some have documented how migrants have contributed to economic and social development in their country of origin. Thus, evidence suggests that remittances from abroad are crucial to the survival of communities in many developing countries as indicated in an IMF Country Analyses report by Russell et al (1990). One benefit expected from labor emigration was that migrants would be bringing an impetus to investments, transfer of technology and machinery and new enterprises. Thus, Russell et al (1990) concluded that 'once subsistence needs are satisfied; migrants do use remittances for investment purposes including education, livestock, farming, and small

scale enterprise'. Taylor (1996) has also argued that remittances have multiplier effects that work to increase national income. In a study on Senegal, Diatta and Mbow (1999), found that remittances were a substantial source of revenue for families with migrant members, and were also used to promote development in migrants' home communities.

Remittances also significantly affect welfare. Koc and Onan (2001)⁵ studying the impact of remittances on the standard of living of left-behind families in Turkey argue that remittances have a positive effect on household welfare. Their study shows that remittances have both direct and indirect income effects, which potentially have important influences on production, income inequality and poverty, at least at the local level. Their study also shows that twelve percent (12%) of households used about eighty percent (80%) of remittances to improve their standard of living though it is argued that dependency on the same leaves households vulnerable to changes in migration cycles.

Migrant remittances also serve as a source income for savings and investment and this is confirmed by Taylor (1996). He found that remittances contribute to savings and investments thereby leading to growth and development of any economy, and this is corroborated by Findley and Sow (1998) in a study on Mali. They report that remittances not only covered basic food and cash needs but also allowed to pay for irrigation in agriculture. Recent work in Somaliland has highlighted investment of remittances in production even in highly unfavorable economic and political conditions (Ahmed, 2000). Similarly, Kannan and Hari (2002) studying the macroeconomic impacts of remittance flows in India indicate that remittances have made significant impact on savings.

Migrant remittances also affect the stability of the exchange rate and inflation, depending on how the inflows are managed. For instance, Amuedo-Doranates and Pozo (2002) testing the impact of workers' remittances on real exchange rate using a panel of 13 Latin American and Caribbean nations argue that workers' remittances have the potential to inflict economic costs on receiving economies. Their analysis revealed that these flows in the form of gifts usually causes growth of parallel foreign exchange markets resulting in

⁵ Their study was based on data from the *1996 Turkish International Migration Survey* (TIMS-96)

the appreciation of the real exchange rate and also creates dependency on unreliable sources of foreign exchange that are subject to cyclical fluctuations. In a related study, Swanson (1979) has also posited that though remitted earnings may prove to be useful in balance of payments problems, they generally contribute little to economic growth.

Whilst some researchers hold the view that remittance flows reduce income inequality between the rich and the poor others are however of the view that the reverse is true because, it is the rich that are able to get their family members to migrate. Adams (1991), in a study based on a survey of 1000 households in rural Egypt used income data from households with and without migrants to determine the effects of remittances on poverty, income distribution and rural development and found that although remittances were helpful in alleviating poverty, paradoxically they also contributed to inequality in the distribution of income. On the contrary, Gustafson and Makonnen (1994) found that in Lesotho, migrant remittances actually decrease inequality. Chimhowu et al (2004) supports the view that remittances do increase inequality at the local level, but at the international level they transfer resources from developed to developing countries and so help to reduce inequality.

Remittances have also served as a form of social insurance for migrants. In an earlier work by Stark (1991) it was argued that if remittances are seen as premium payments for future risks then it can be argued that they allow both parties to secure their livelihood in the event of external shocks, which may be in the form of loss of employment and drought occurring. Taylor (1999) argues that remittances may serve as a form of insurance policy against risks. Thus, remittances are counter-cyclical. Hulme et al, (2001) however suggest that for remittances to serve as a form of premium payment for future risks, these flows should enable households accumulate assets that reduce vulnerability to financial shocks and to gain access to entitlements such as education and health that contribute to livelihood security and sustainability. This view point is corroborated by Azam and Gubert (2002) in their study on the impact of remittances using historical and anthropological surveys on recipients in Africa. In particular, they examined the Soninke labor migration, and interpret it as a means of diversifying risk in a

context of missing insurance and credit markets. This is supported by a study by Amuedo-Doranates and Pozo (2002) when they investigated whether remittance flow serve as insurance for Mexican migrants. They argued that remittances are, in part, transferred to the home country to “purchase” family-provided insurance and self-insurance and they find that increases in income risk significantly increases both the propensity and the proportion of labor earnings sent home for family-provided insurance as well as for self-insurance.

Ratha (2003) also corroborates the point that migrants may increase remittances in times of economic hardship, especially in low-income countries where their families may depend significantly on remittances as a source of income and may live at close to subsistence levels. Ratha further argues that economic downturns may also encourage workers to migrate abroad and thereby begin to transfer funds to families left behind. He further argues that while capital flows tend to rise during favorable economic cycles and fall in bad times, remittances appear to react less violently and show remarkable stability over time. For example, he shows that remittances to developing countries continued to rise steadily, especially during 1998-2001, a period characterized by a decline in private capital flows in the wake of the Asian financial crisis. Thus, remittances augment the recipient individuals’ incomes and increase the recipient country’s foreign exchange reserves thus they offset some of the output losses or economic shocks that a developing country may suffer from emigration of its highly skilled workers.

Negative economic shocks tend to have spill-over effects on various sections of an economy, the poor suffer disproportionately from shocks because they generally have limited savings and access to credit; they rely heavily on public social services, which deteriorate as spending becomes constrained; and their limited skills mean higher income shortfalls. The shocks that hit low-income countries most frequently include natural disasters and large fluctuations in export or import prices. Natural disasters damage a country’s stock of physical and human capital and reduce income and output, while fluctuating prices for a country’s exports reduce income in the private and public sectors. Other types of external shocks can also be very costly. Conflicts in one country can spill

over to neighboring countries and create refugee problems, losses in export markets, higher transportation costs, lower remittances, and even conflict contagion and increased defense expenditures (See Happe et al, 2003).

In addition to physical damage and income losses, Happe et al (2003) indicate that these shocks also have indirect effects that can reverberate through an economy, hampering output and investment, upsetting macroeconomic balances, and increasing debt and poverty over a number of years. The type and magnitude of indirect effects will depend on the size and duration of a shock, whether measures were taken in advance to mitigate its impact, the government's policy response, and the amount and form of external assistance a country receives. However, estimating these effects can be tricky because it is difficult both to identify the channels through which they are transmitted and to isolate the magnitude of their impact, especially when more than one shock has affected an economy or when an economy is recovering from a prior shock. Through direct and indirect effects, shocks can significantly impede growth.

In spite of efforts by low-income countries to raise growth rates in recent years, their vulnerability to such shocks continues to remain enormous. Other sources of inflows are of great need if their vulnerability is to be reduced significantly in order to absorb such shocks. In this vein Glytsos (2002) reiterates that given the persistent problems in the balance of trade in less developed countries including the limited effect of foreign aid, and the difficulties of borrowing, the often huge amounts of migrant remittances can substitute for the inadequacies of these forms of foreign exchange.

Several studies have attempted to model the macro-economic determinants of remittance inflows as well as quantifying its effects on the domestic economy. Klerk and Drinkwater (2001) posit that there are good reasons for adopting a disaggregated perspective. They argue that the analysis of aggregated data becomes problematic since not all remittances flow through official channels and this supports earlier work by Chandavarkar (1980) where it was argued that factors such as the difference between official and black market exchange rates lower the probability that a transfer is reported. There is therefore the

need to use microeconomic data to model remittance behaviour because of the inability of macro-models to control for individual and demographic differences (Faini, 1994).

The importance of remittances has also been examined empirically in terms of its impact on poverty. Adam and Page (2003) using data from 74 low and middle-income developing countries found that international migration has a strong statistical impact on reducing poverty; on average, a 10% increase in the share of international migrants in a country's population will lead to a 1.9% decline in the share of people living in poverty. Thus, international remittances strongly affect poverty and they tend to minimize the negative effects of economic shocks in an economy.

A number of studies carried so far on migrant remittances flow to Ghana have however been mainly focused on the uses to which these funds are put, with less emphasis on the assessment of its magnitude and impact on households, particularly in times of shocks. In a much earlier study of internal migration in Ghana, Caldwell (1969) found that migrants spent remittances to pay for schooling and wages of farm laborers, and to develop small businesses. Also, a survey conducted by the Sussex Centre for Migration Research in Ghana, particularly in the Ashanti Region in March 2003 identifies three main uses to which remittance flows are applied. First, remittances are used to satisfy individual needs such as satisfying consumption needs, organizing funerals and meeting other pressing social needs. The second motive is to support social projects in migrants' originating communities. The third motive identified to be less common but perhaps the most important for the promotion of economic development is for productive investments. Under this third category, the most common is for migrants to invest in businesses of their relations in their home country.

A more recent study by Litchfield and Waddington (2003) on Ghana also examined the welfare outcomes of migrants and non-migrants in Ghana using GLSS data and found that migrant households have statistically significantly higher living standards than non-migrants though there appears to have been a slight decline in the extent of migration over the decade. This study will try to fill the lacuna by specifically examining how

remittance flows have helped in minimizing the impact of macro volatility on the poor in Ghana, as observed during the 1990s.

In conclusion, despite the conflicting results of the impacts of remittance flows, an overwhelming amount of the empirical literature suggest remittances make a powerful contribution to reducing vulnerability at least at the household and local community levels. It is important to emphasize however that much of the effects are seen at the household level suggesting that remittances underpins the welfare of households. Thus as much as it is important to assess the impact of remittance flows at the national and community levels it is more important to consider the assessment of the impact at the household level to direct policy since it has the potential for reducing overall poverty and the vulnerability of the poor to macro economic volatility. In sum, the literature suggests that remittances have more positive than negative impacts.

However, the relationship between migrant workers' remittances, economic shocks and household welfare has not been empirically investigated in Ghana. It is common knowledge that households that receive remittances are able to withstand macroeconomic shocks since these inflows serve as a form of insurance on income shortfalls. This therefore raises the following research issues: Which group of households receives remittances? Are richer households less likely to receive remittances? Is the flow of remittances counter-cyclical? Does the impact of macroeconomic shock on household welfare vary according to land holdings? Is remittance receiving households better off in terms of higher average income and asset base than households that do not receive remittances? Does the impact of macroeconomic shocks on household consumption patterns vary according to age? Or size of the family conditioned on remittances?

These issues will be the focus of the study. It will also specifically examine the following:

- Ascertain whether the impact of macro-volatility on poor households in Ghana is minimized by migrant remittances

- Investigate whether remittance receiving households have better welfare or less poor than households who do not receive remittances
- Ascertain whether the flow of remittances to Ghana is counter-cyclical

3. METHODOLOGY

The principal hypothesis to be investigated by this study is that ‘migrant remittances reduce the impact of economic shocks on household welfare’. Two approaches will be followed. First, a descriptive approach will be followed where the broad developments in migrant remittances in Ghana will be discussed. The second approach will employ quantitative techniques to ascertain how household consumption patterns are influenced by remittances and macroeconomic shocks. This will basically involve formulating a consumption function which includes (in addition to the basic determinants) two other variables, namely, remittances and a proxy for macroeconomic shocks. We then compare how households’ consumption patterns are influenced by migrant remittances with or without economic shocks. However, the absence of earlier work on the impact of migrant remittances on households in periods of macro-volatility or shock presents a challenge to this study, as there are no existing results against which a comparison could be made.

3.1 The Model

In order to ascertain the impact migrant remittances on household welfare in periods of macro-volatility a linear model will be estimated. The estimation technique will involve a classical linear regression technique. A typical classical linear regression technique can be specified as

$$Y_i = \beta_0 + \beta_1 X_{i1} + \beta_2 X_{i2} + \beta_3 X_{i3} + \beta_4 X_{i4} + \dots \beta_k X_{ik} + \varepsilon_i$$

Y is the dependent variable and in this study ‘household consumption shares’, the Xs are the independent or explanatory variables, which would include income, level of education, and an index of macro-volatility, share of remittances in total income, and

other demographic variables. ε_1 is the error term which is assumed to be independent and normally distributed and it is white noise.

The dependent variable to be used is household consumption because a greater proportion of remittances are used to smooth out consumption expenditures, particularly in periods of macro-economic volatility. Consumption is preferable to income as a broad measure of household welfare. Microeconomic theory predicts that welfare level is typically determined by 'life cycle' or 'permanent' income and current consumption is a good approximation of such an income. Measured consumption is invariably less variable than measured income (Deaton, 2001). Besides, accurate information is less difficult to obtain for consumption than it is for income (Deaton, 1997; Ravallion, 2001; Srinivassan, 2001).

In constructing the consumption based on a living standards measure, three steps will be taken after defining the categories of consumption. First, make adjustments for cost of living differences across the enumeration areas or regions of Ghana. In this study, the Paasche price index will be used to weight the consumption expenditures, a method used in Deaton (1997). Second, adjustment would be made for household size and composition; this is necessary because most household data including the GLSS is obtained from an individual member of the household who may not report each individual household member's purchases accurately. Thus adjustments would have to be made of household size and composition. Deaton and Zardi (1999:49) proposed that all welfare indicators should be divided by the total number of household members.

3.2 Expected Determinants of Household Consumption (Welfare)

Consumption is influenced by income. The Keynesian Consumption function and the Permanent Income of Friedman postulate a positive relationship between consumption and income. According to the permanent income hypothesis, which distinguishes between permanent and transitory components of income, households will spend mainly the permanent income while the transitory income is channeled into savings with a marginal propensity to save from this income approaching unity. The positive relationship postulated by the Keynes and Friedman's permanent income hypothesis has

been confirmed by empirical studies (Rossi, 1988; Gupta, 1987; Koskela and Viren, 1982; Avery and Kannickel, 1991).

Access to foreign borrowing in international markets is expected to supplement domestic resources and help smoothing consumption. However, the ways remittances are used may vary with respect to the economic status of the migrants' households. Richer households are expected to invest the remitted earnings on various forms of enterprises (either productive or unproductive), while poorer households are expected to give priority to satisfy their basic consumption needs. Further, the use of remittances for immediate consumption implies the unsatisfied immediate needs of the migrant families. Thus, private remittances would be an important decision parameter for household consumption.

The life-cycle hypothesis postulates that demographic variables affect consumption (Ando and Modigliani, 1963). The dependency ratio⁶ is the most common demographic variable. The young and the elderly are expected to consume out of past savings while those within the working age are expected to accumulate savings. A developed capital market as well as the number of children in the family has been seen as alternative means of maintaining income in old age.

Generally, household education is likely to have a positive effect on household welfare (consumption). Since the mean level of education is expected to be significant this is likely to affect household welfare. A widely used measure of education is the maximum number of years of education per household member, the head of the household or the mother. It has been argued that the level of education of the mother is likely to have a positive impact on household food consumption than the level of education of the male head of household (Bruck, 2003:16). Household size is also likely to affect consumption since there may be synergies from larger household size both in production and in consumption. Working in groups can be more productive through improved supervision, pooling of tools and experience or higher motivation. Meanwhile, food preparation can

⁶ Defined as the share of the population under the age fifteen or over sixty five years of age

be less costly for larger groups. The amount of land holdings is another useful determinant of consumption; the proportion of land holding area has a proportional direct effect on household consumption. Households with large land areas are likely to have higher income than households with low land holdings. Even in situations where the household does not cultivate the land by himself, he could rent it out for a fee. Thus land holdings are expected to have a direct positive effect on consumption via income.

The number of livestock is another important determinant of welfare (consumption). It is expected that farmers or households with larger livestock units have higher income which bears a direct effect on consumption. Also, the sector of economic activity affects one's consumption. Households whose occupations fall within manufacturing, industry and services are better off than food crop farmers according to the Ghana Living Standards Survey (GLSS) report. In addition, households who have off-farm employment are likely to be better off than households without off-farm employment, particularly due to the seasonality of agriculture in Ghana.

3.3 Data Sources

The study will mainly use both micro and macro datasets. The micro dataset to be used is the Ghana Living Standards Survey (GLSS) waves III and IV available at the Ghana Statistical Service. The two Waves of the GLSS were pooled into a Pseudo Panel. The Pseudo Panel comprises households with characteristics varying by poverty status, region and location. The GLSS data was complemented with other secondary data on macro-economic shocks during the period covered by the data (1992-1999). These are available from the Bank of Ghana Statistical Release and would be supplemented with information from the Monetary Policy Committee of the Bank of Ghana. The GLSS contains information such as: whether individual household member receives remittances, the amount received, etc. It also has demographic information on households and this will be complemented with indexes of macro-volatility to ascertain the impact of remittances on household consumption patterns with or without remittances. The macro data used is the consumer price index for the two periods covered by GLSS 3 and 4.

4. DATA ANALYSIS AND FINDINGS

The study used waves 3 and 4 of the Ghana Living Standards to ascertain the impact of remittances on household welfare. The GLSS 3 and 4 comprises 4507 and 5992 households respectively and covers all the 10 regions of Ghana. The GLSS 3 survey data covered the period 1991/92 while the GLSS 4 data spanned the period 1998/99. 64.7% and 42.9% of the total sample in GLSS 3 and 4 respectively received remittances from a local or foreign source. Out of the total number of household members in the Ghana Living Standards Survey, 16.9% of those in GLSS 3 and 15.7% of those in GLSS 4 received migrant remittances from outside the country. In terms of households, 6.1% and 8.1% of households received remittances in 1991/92 and 1998/99 respectively. The proportion of household members who received remittances from relations in other African countries had declined over the two periods; it was 6.52% in GLSS 3 and 3.6% in GLSS 4 respectively. On the other hand, the proportion of household members receiving remittances from migrant family members living outside Africa had increased from 10.4% in 1991/92 to 12.1% in 1998/99.

Those who received remittances from their brothers/sisters form the majority (33.1% in GLSS3 and 33.5% in GLSS 4). A significant proportion of migrant's children received remittances (26.3% in GLSS 3 and 32.6% in GLSS 4). The proportion of spouses of migrants who received remittances accounted for 11.4% in GLSS 3 and 3.7% in GLSS 4. Also, quite a significant proportion of migrants' relatives also received remittances in the form of goods and money; 13.5% in GLSS 3 and 18.1% in GLSS 4. Only 2.7% of parents in the GLSS 3 sample and 5.3% in GLSS 4 received remittances. Thus, there has been an increase in the proportion of households who received remittances from the different types of relations except for spouses where the proportion declined over the two periods. A possible explanation to the significant decline in the proportion of migrants remitting their spouses is that migrants are gradually getting their spouses to join them. In terms of the two sexes, 60.2% and 64.7% migrant remittances went to males in 1991/92 and 1998/99 respectively. While the proportion of females who received migrant remittances decreased from 38.8% in 1991/92 to 35.3% in 1998/99. The decline in the proportion of females receiving remittances is not encouraging since it is well known that

transfers to female headed households tend to have higher impact on household welfare compared to their male counterparts. Another interesting revelation is that only a small proportion of migrant remittances were required to be paid back; 3.2% of households receiving remittances in 1991/92 and 3.6% of households that received remittances in 1998/99 period were required to repay.

Table 1: Regularity of Inflow of Remittances

Frequency	GLSS 3 (1991/92) (Percent)	GLSS 4 (1998/99) (Percent)
Weekly	1.8	0.2
Monthly	5.7	9.0
Quarterly	14.9	14.0
Annually	29.4	17.3
Not Regular	45.7	58.5
Other	2.4	1.1

Source: Computed from GLSS 3 and 4

The data also revealed that a significant proportion of households do not regularly receive remittances. 45.7% and 58.5% of households that received remittances in GLSS 3 and GLSS 4 respectively said they do not regularly receive remittances. Similarly, 29.4% and 17.3% of sampled households in GLSS 3 and 4 respectively received remittances annually. Meanwhile, 14.9% and 14.0% of the total sample in GLSS 3 and GLSS 4 respectively received remittances on a quarterly basis (Table 1). The high incidence of 'not regular' inflows of remittances (as evident in Table 1), clearly demonstrates the widespread view that remittances are used as a means of coping with unexpected economic shocks.

Another interesting revelation is that the maximum value of remittances received by households was ₵1.6million (US\$ 3661.3) in 1991/92 and ₵5.64 million (US\$ 21,307.1) in 1998/99⁷. Meanwhile, the mean value of remittances received by household members in 1991/92 was ₵20,616 and increased significantly to ₵203,949 in 1998/99. Interestingly, 1991/92 marked a period in Ghana when inflation was relatively low (about 10%) as compared to the about 16% rate of inflation recorded in 1998/99. Adjusting for the

⁷ The US\$ exchanges for ₵437 = \$1 in 1992 and ₵2647 = \$1 in 1999

inflationary effects in the mean value of remittances for the two periods will still show considerable growth in migrant remittances between the two periods. The mean value of remittances in real terms amounted to ₵108,163.7 in 1991 and ₵153310.5 in 1999, an increase of 41.74% over the two periods. The considerable growth in the amount of remittances in 1998/99 as compared that of 1991/92 goes to confirm the assertion that migrant remittances to Ghana are counter-cyclical – they increase in times of economic shocks and therefore they are less regular as indicated in Table 1.

Table 2: Mean Value of Remittances

Type	GLSS 3 (1991/92) ₵	GLSS 4 (1998/99) ₵
Cash	78,361	666,049
Food	2,813	12,187
Non-food	20,616	146,862

Source: Computed from GLSS 3 and 4

It is noteworthy that remittances are mostly in the form of cash and non-food items (Table 2).

Table 3: Level of Education and Mean Household Size

	GLSS 3 (1991/92) Percentage	GLSS 4 (1998/99) Percentage
No Education	28.3	20.0
Basic	1.3	31.9
Secondary	6.5	7.40
Post-secondary	1.7	2.6
Tertiary	0.5	3.4
Mean Household Size	4.5	4.3

Source: Computed from GLSS 3 and 4

An analysis of the demographic characteristics of households receiving remittances also shows interesting results. The majority of households receiving remittances in the two periods have no formal education – About 28% in 1991/92 and 20% in 1998/99. This is followed by those with secondary education, post-secondary education and basic education respectively (Table 3). Another interesting finding is that the average

household size for households receiving remittances decreased from 4.5 to 4.3; a slight decline in household size over the two period.

Regression Analysis

To determine the impact of remittances on household welfare, a pseudo-panel data using households that received remittances during the two survey periods would be constructed. The concept of ‘pseudo-panel’ was introduced by Deaton (1985) for the analysis of consumer demand systems. A Pseudo-panel is formed by grouping households into cohorts based on some common characteristics. Cohort variables are then computed as the average values for the households included. Our pseudo-panel was constructed based on the following characteristics: *poverty status, location and region*.⁸ Table 4 below gives a definition of variables used for the study. The index of macro-volatility is measured as the standard deviation of inflation over a given period. This is done by taking the standard deviation of inflation in the years 1986-1992 (6 data points) and then use it as the volatility index for 1992, and also take the standard deviation between 1993 and 1999 (6 data points) and then use it as index for 1999.

The empirical model is estimated using the pseudo panel data set where cohorts are defined by poverty status, location and region. This results in 60 cohorts and 117 observations. Panel data sets contain two kinds of information: cross-sectional information, which reflects differences between cases; and time-series information, which reflects changes within cases over time. Therefore using ordinary multiple regression technique may not be optimal, since this may result in omitted variable bias – a problem that arises when there is some unknown variable(s) that cannot be controlled for but can affect the dependent variable.

⁸ Poverty status defines households as very poor, poor, or non-poor based on poverty benchmarks determined by Ghana Statistical Service. Location is defined as either urban or rural, whereas Region captures the ten administrative regions of Ghana.

Table 4: Definition of Variables

Variable	Definition
<i>Lwelfare</i>	Log of per capita household consumption per adult equivalent
<i>Lpremit</i>	Log of per capita household remittance
<i>Inflation</i>	Macro-volatility – Standard Deviation of CPI 1986-1992 and 1993-1999
<i>Interact</i>	Interactive term: the product of <i>lpremit</i> and <i>inflation</i>
<i>Agehead</i>	Age of household head
<i>Hhsize</i>	Size of household
<i>Sexhead</i>	Gender of household head
<i>Noeduc</i>	Household head has no education
<i>Basic</i>	Head of household has basic education
<i>Secondary</i>	Head of household has secondary education
<i>Postsec</i>	Head of household has post-secondary education
<i>Tertiary</i>	Head of household has tertiary education
<i>Land</i>	Household does not own land
<i>ecozone2</i>	Household located in forest belt
<i>ecozone3</i>	Household located in savannah belt
<i>loc2</i>	Household located in rural area

For instance, we may want to control for omitted variables that differ between cases but are constant over time (fixed effects), or control for omitted variables that change overtime but are constant between cases (between effects), or a combination (weighted average) of the two (random effects). Statistically, fixed effects give consistent results but may not give efficient results. On the other hand, random effects give more efficient estimates. To choose the most appropriate model (fixed versus random) to run, we subjected the two models to the Hausman Test⁹. At the 5% significance level, we do not reject the Hausman test, implying that the more efficient random effects model also gives consistent results (See Appendix I for Hausman test results). Accordingly, we estimate our empirical model using the random effects technique.

Table 5 below presents the econometric results of the pseudo-panel random effects model. As can be seen from the table, the *interact* variable carries a negative sign but is insignificant. Thus, one may conclude that even though household consumption (welfare) is positively affected by remittances, economic shocks reduce its impact on household

⁹ The Hausman test tests the null hypothesis that the coefficients estimated by the efficient random effects estimator are the same as the ones estimated by the consistent fixed effects estimator.

welfare and the negative effect of the shock is not completely offset by the presence of remittances. In other words, remittances is one but not the only coping mechanism for economic shocks on household welfare.

Table 5: Random-Effects GLS Regression Model

Regressors	Coefficient	Standard Error	P-value
lpremit	.0241	.0112	0.031
Inflation	-.0019	.0027	0.483
interact	-.003	.0003	0.427
agehead	-.0004	.0073	0.955
hhsiz	-.1161	.020	0.000
sexhead	.0119	.179	0.947
noeduc	-.139	.216	0.519
basic	.278	.229	0.225
secondary	1.47	.363	0.000
post-sec	1.457	.804	0.050
tertiary	.946	.322	0.003
Land	-.303	.072	0.000
Ecological Zone	.058	.069	0.410
constant	14.4926	.462	0.000

R-Squared: Within = 0.160
 Between = 0.682
 Overall = 0.658

Observations = 117
 Wald chi2(10) = 86.1
 Prob > chi2 = 0.0000

The land variable in the pseudo model carries a negative sign and is significant. This shows that welfare is reduced for households without asset holdings. Education improves household welfare. Thus except for households headed by people with no education (where the coefficient had a negative sign), household welfare positively correlates with some level of education by the household head, and this is significant for households headed by people with secondary, post-secondary and tertiary education.

Age of household head is negatively correlated with welfare but is insignificant. Household size takes on a negative sign and is significant, implying that larger households have reduced welfare, especially in times of economic shocks. This means

that consumption synergies expected from larger household sizes may be absent. Households headed by females (*sexhead*) also have reduced welfare, but this is insignificant.

In addition to the pseudo model we also run a simpler model in which we pooled the data for the two periods, 1991/92 and 1998/99. We then run a model for the complete set of observations as well as seven sectoral regressions¹⁰. To ascertain whether there were any significant changes in household welfare between the two periods, we introduced a year dummy. Table 6 below¹¹ presents the results of the pooled regressions. Column 2 (model 1) presents the results for all the observations. Columns 3 (model 2) through 9 (model 8) produce results for the various socio-economic groupings are defined in footnote 3.

In model 1, the coefficient of the interaction term, *interact* unlike in the pseudo model, takes on a positive sign but is insignificant. Meaning, migrant remittances minimize the impact of economic shocks on household welfare but it is not significant. At the sectoral level, public sector workers (model 2), food crop farmers (model 6) and non-workers (model 8) the coefficient for the interaction term is also positive but is significant only for food crop farmers. This means that remittances receipts by these households may have been enough to mitigate any negative impact of shocks on their welfare. This has a very important policy implication; in the GLSS 3 and 4 reports, it was found that although poverty had reduced between the two periods, poverty increased for some groups of people and the majority was food crop farmers. Thus, it can be concluded that migrant remittances mitigate any impact of macro-volatility on the welfare of the poorest of the poor. For private formal sector workers (model 3), private informal sector workers (model 4), export crop farmers (model 5) and non-farm workers, the coefficient is negative but insignificant except for private formal sector workers.

¹⁰ The seven sectoral models to conform to the socio-economic groupings (seg) of households as categorized in the GLSS 3 and 4 as follows: (1) Public sector, (2) Private formal, (3) Private informal, (4) Export farmers, (5) Food crop farmers, (6) Non-farm workers and (7) Non-workers. Volatility in each sector is obtained from the GLSS data using the food CPI.

¹¹ See Appendix 2 for detailed regression results for the pooled model.

Table 6: Pooled Regression Results

Regressor	Full Sample	Public Sector	Private Formal	Private Informal	Export Farmers	Food Crop Farmers	Non-farm Workers	Non-workers
Lpremit	.114 (0.000)	.119 (0.020)	.482 (0.005)	.328 (0.033)	.175 (0.306)	-.0148 (.720)	.188 (0.000)	.125 (0.165)
Inflation	-.027 (0.016)	-.0228 (0.335)	.096 (0.041)	0.0523 (0.177)	.0652 (0.107)	-.0756 (0.000)	.0044 (0.716)	-.028 (0.368)
Interact	.0013 (0.135)	.0007 (0.733)	-.0095 (0.039)	-.0044 (0.227)	-.0056 (.234)	.007 (0.00)	-.0012 (0.296)	.0015 (0.574)
Hhsize	-.061 (0.000)	-.0869 (0.001)	.0534 (0.120)	.041 (0.355)	-.0345 (0.438)	-.049 (0.075)	-.077 (0.000)	-.0750 (0.003)
Agehead	.0001 (0.953)	.0037 (0.482)	-.0145 (0.013)	-.0312 (0.002)	-.0039 (0.600)	.0012 (0.676)	-.0009 (0.756)	.0048 (0.134)
Sexhead	-.108 (0.014)	-.118 (0.272)	.042 (0.803)	0.365 (0.242)	0.082 (0.769)	-.0522 (.507)	-.142 (0.054)	-.0028 (0.977)
Land	-.153 (0.030)	.0969 (0.536)	-.139 (0.476)	-.334 (0.058)	0.289 (0.324)	-.263 (0.003)	-.109 (0.204)	.456 (0.000)
Ecozone2	-.0446 (0.405)	.179 (0.077)	-0.089 (.597)	.0789 (0.719)	.551 (.074)	-.0715 (.462)	.087 (0.286)	-.051 (0.680)
Ecozone3	-.290 (0.002)	-.264 (0.131)	-.235 (0.350)	1.625 (0.004)	0.485 (0.934)	-0.279 (0.017)	-.305 (0.038)	-.395 (0.144)
Loc2	-.336 (0.000)	-.508 (0.000)	-.166 (0.340)	-.678 (0.020)	-0.774 (0.003)	-.185 (0.128)	-.238 (0.004)	-.0951 (0.479)
Noeduc	.0889 (0.221)	.172 (0.421)	-.392 (0.181)	-.181 (0.363)	-.162 (0.432)	.142 (0.211)	-.015 (0.905)	.318 (0.015)
Basic	.275 (0.005)	.618 (0.062)	-.557 (0.112)	-.262 (0.353)	.0264 (0.904)	.254 (0.062)	.046 (0.748)	.693 (0.000)
Secondary	.327 (0.000)	.236 (0.296)	-.258 (0.513)	0.429 (0.120)	0.389 (0.089)	1.08 (0.000)	.195 (0.211)	.262 (0.226)
Postsec	.293 (0.003)	.386 (0.119)	-.094 (0.756)	.962 (0.000)	.281 (.413)	.503 (0.012)	-.157 (0.322)	.217 (0.207)
Tertiary	.370 (0.001)	.525 (0.086)	-.629 (0.183)	---	---	.065 (0.669)	.336 (0.057)	.609 (0.000)
Constant	13.70 (0.000)	13.77 (0.000)	10.47 (0.00)	11.41 (0.000)	12.36 (0.00)	14.44 (0.000)	13.24 (0.000)	13.15 (0.000)
R-Squared	0.5011	0.494	0.495	0.76	.527	0.513	0.475	0.569
No. of Obs.	765	96	47	34	39	183	283	83
F ()	38.83	8.47	10.21	---	---	---	20.98	42.34
Prob > F	0.000	0.000	0.000	---	---	---	0.000	0.000

5. CONCLUSION

The study investigated how the impact of economic shocks on household welfare is minimized by migrant remittances. The study pooled the two most recent waves of the Ghana Living Standards Survey into a pseudo panel and a random effect model was estimated. The data presented very interesting findings. First it was found that, the flow

of migrant remittances to Ghana increases in times of economic shocks, hence, they are counter-cyclical. Second, economic shocks reduce household welfare but this is minimized by migrant remittances, particular for food crop farmers. Moreover, households that own land are able to withstand economic shocks and therefore tend to have better welfare than those without land. Whereas the level of education of the household head positively affects welfare, age of the head of the household negatively correlates with household welfare although this was not significant. The study also found that larger households have reduced welfare, an indication that there is the absence of consumption synergies within larger households. Finally, the proportion of males receiving migrant remittances exceeds that of females.

In conclusion, Ghana faced considerable economic shocks in 1998/99 as compared to the period 1991/92 but the effects of such economic shocks on households were minimized in households that received remittances, particularly with food crop farmers. Thus, remittances improve household welfare and have become an important source of income for consumption smoothing in Ghana. The study suggests that policies should be designed particularly for the poorest of the poor (food crop farmers) to ensure that the cost of transferring funds to relations in Ghana is reduced. Food crop farmers who receive remittances should be given a rebate (handling charges or higher conversion rate) to improve their welfare levels. Secondly, policies should be designed to ensure that migrants not only remit their relations but also can hold foreign currency denominated accounts with competitive interest rates. The central bank in 2004 outlawed the system whereby foreign account holders pay interest on their balances. However, banks have circumvented this by rather charging customers for withdrawals made on these accounts. If this is not checked, it will rather encourage the use of informal means of transferring funds to the country. Additionally, there are other informal means of sending remittances to Ghana and therefore the central bank should design a regulatory framework that will integrate the informal channels of sending migrant remittances into the formal. Finally, since remittances have become an important source of foreign exchange to the country, policies should be designed to ensure that remittance flows become sustainable.

APPENDIX

Table A1: Summary Statistics, GLSS 3

Variable	Observations	Mean	Std Deviation	Min	Max
Welfare	278	2065516	1854267	226233.7	1.42e+07
Remit	278	101045.2	186079.6	122	1600000
Agehead	278	45.3777	17.01999	18	99
HHsize	278	4.165468	2.919119	1	15
Sexhead	278	1.446043	.4979766	1	2
Seg	278	4.741007	1.96481	1	7
EcoZone	278	1.600719	.6377982	1	3
Loc2	278	1.410072	.4927335	1	2
Land	278	1.222222	.4164868	1	2

Table A2: Summary Statistics, GLSS 4

Variable	Observations	Mean	Std Deviation	Min	Max
Welfare	487	2160865	1844790	220032.5	2.01e+07
Remit	487	1066261	3059479	5000	5.73e+07
Agehead	487	48.80082	16.41487	20	97
HHsize	487	4.291581	2.371207	1	14
Sexhead	487	1.445585	.4975413	1	2
Seg	487	4.772074	1.834568	1	7
EcoZone	487	1.708419	.6295133	1	3
Loc2	487	1.441478	.497074	1	2
Land	487	1.258197	.4380918	1	2

Table A3: Summary Statistics, GLSS 3 & 4

Variable	Observations	Mean	Std Deviation	Min	Max
Welfare	765	2126216	1847596	220032.5	2.01e+07
Remit	765	715159.2	2485867	122	5.73e+07
Agehead	765	47.55686	16.70763	18	99
HHsize	765	4.245752	2.582614	1	15
Sexhead	765	1.445752	.4973736	1	2
Seg	765	4.760784	1.88172	1	7
EcoZone	765	1.669281	.6342412	1	3
Loc2	765	1.430065	.4954089	1	2
Land	765	1.245111	.4304336	1	2
Noeduc	765	0.2346806	.4240756	0	1
Basic	765	0.2268579	.4190732	0	1
Secondary	765	0.1277705	.334052	0	1
Postsec	765	0.0443286	.2059583	0	1
Tertiary	765	0.0378096	.1908601	0	1
Othereduc	765	0.0026076	.0510309	0	1
Inflation	765	26.05511	15.5127	5.61	37.81

TABLE A4: HAUSMAN SPECIFICATION TEST

Variables	COEFFICIENTS		
	Fixed Effects	Random Effects	Difference
lpremit	.001308	.0241165	-.0228085
agehead	.002302	-.0004102	.0027118
hhsz	-.018534	-.1161042	.0975706
sexhead	.0614397	.0118629	.0495768
noeduc	-.136495	-.1395552	.0030602
basic	.0755794	.2774778	-.2018984
secondary	.7266006	1.472279	-.7456783
postsec	.0069141	1.576489	-1.569575
tertiary	.1462136	.9464069	-.8001933
land	-.1258421	-.3023762	.1765341
ez	.0789304	.0576725	.0212579
inflation	-.0012816	-.0018735	.0005918
interact	.0001767	-.0002672	.0004439

Test: Ho: difference in coefficients not systematic
 $\chi^2(13) = (b-B)'[S^{(-1)}](b-B), S = (S_{fe} - S_{re})$
 = 5.17
 Prob>chi2 = 0.9713

References

- Adams, R. H. and Page, J., (2003) "Impact of International Migration and Remittances on Poverty". *A Paper Presented at the DFID/WB Conference on Migrant Remittances, London, October 9-10 2003.*
- Amuedo-Dorantes, C. and Pozo, S. (2002) "Workers' Remittances and the Real Exchange Rate: The Paradox of Gifts." <http://homepages.wmich.edu/~pozo/remit.real.feb6.pdf>
- Ando A and Modigliani F (1963), 'the Life-Cycle Hypothesis of Saving: Aggregate Implications and Tests', *American Economic Review*, March
- Azam J. and Gubert F., (2002), "Those in Kayes: The Impact of Remittances on Their Recipients in Africa". <http://www.nuff.ox.ac.uk/users/doornik/eswc2000/a/1762>
- Avery R.B and Kennickel A.B (1991), *Household Savings in the US*, *Review of Income and Wealth*, Series 37(4), December
- Bruck T (2003), *Household Coping Choices and the Determinants of Income and Consumption in Post-war Rural Mozambique*, A Paper Submitted at the European Economic Association Annual Meeting in Stockholm, February
- Buch C. M. and Kuckulenz A., (2004), "Worker Remittances and Capital Flows to Developing Countries"
- Caldwell, J.C., (1969), "African Rural-Urban Migration: The Movement to Ghana's Towns," Canberra: Australian National University Press.
- Chimhowu, A. Piesse J., and Pinder C. (2004) "The impact of remittances" *Enterprise Development Impact Assessment Information Service EDIAIS*, Issue 29, April 2004
- Clarke, K. and Drinkwater S (2001), "An Investigation of Household Remittance Behaviour", Manchester School of Economics Studies, *Discussion Paper Series*, http://fssl.man.ac.uk/ses/research/Discussion_Paper_01
- Deaton, A (1985), Panel data from time-series of cross-sections, *Journal of Econometrics* 30, 109-126
- Deaton A (2001), 'Counting the World's Poor: Problems and Possible Solution', *World Bank Research Paper* 3179, World Bank, Washington DC, December
- Deaton A and Zardi S (1999), *Guidelines for Constructing Consumption Aggregates for Welfare Analysis*, 2002, *Living Standards Measurement Study Working Paper*: 135. v. 104, pp. xi, Washington, D.C.: The World Bank
- Diatta, M. A., and Mbow, N., (1999), "Releasing the Development Potential of Return Migration: The Case of Senegal," *International Migration*, 37(1), pp 243-66.

- Edward, A. C. and Ureta M. (2001) "Income Transfers and Children's Schooling: Evidence from El Salvador." California State University, *Working Paper* <http://www.csulb.edu/~acoxedwa/rem0607.pdf>
- Faini R and Venturini A.(1994) *Migration and growth: The experience of Southern Europe*, Working paper CEPR no. 964
- Fernando N. A., (2003), "Workers' Remittances and Microfinance: The Neglected Nexus" *Regional and Sustainable Development Department, Asian Development Bank*, Third Anniversary Issue June 2003, Vol 4, No 2.
- Glytsos N. P., (2003) "The Role of Migrant Remittances in Development: Evidence from Mediterranean Countries" *International Migration*, March 2002, Vol 40, No 1, pp 5-26
- Gustafsson, B. and Makonnen, N., (1993), "Poverty and Remittances in Lesotho," *Journal of African Economics*, Vol 2, pp 49-73. Oxford University Press
- Gupta K.L (1987), Aggregate Savings, Financial Intermediation and Interest Rate, *Review of Economics and Statistics*, Vol 69(2)
- Happe N., Hussain M., and Redifer L., (2003) "Absorbing Shocks" *IMF WP, Finance and Development*, December 2003
- Hulme, D. Moore, K and Shepherd, A. (2001), "Chronic Poverty: Meanings and Analytical Frameworks", *CPRC Working Paper 2 IDPM*, University of Manchester.
- International Monetary Fund (2001) Public Information Notice (PIN) No. 01/97 September 21, 2001
- Kannan, K. P. and Hari K. S. (2002), "Kerala's Gulf Connection: Emigration, Remittances and their Macroeconomic Impact 1972-2000. *Centre for Development Studies Working Paper 328*. http://cds.edu/download_files/328.pdf
- Koc I. and Onan I., (2001), "The Impact of Remittances of International Migrants on The Standard of Living of the Left-Behind Families in Turkey"
- Koskela E and Viren M (1982), Savings and Inflation: Some International Evidence, *Economic Letters*, Vol 9(4)
- Litchfield, J, a. W., H. (2003) "Migration and Poverty in Ghana: Evidence from the Ghana Living Standards Survey. *University of Sussex, IDS Migration Working Paper Number 10*: http://www.central.sussex.ac.uk/Units/SCMR/working_pap
- Maimbo S (2003), 'The Money Exchange Dealers of Kabul: a study of the Hawala System in Afghanistan', Washington DC, The World Bank

- Ratha D (2003), Workers Remittances: An External and Stable Source of External Development Finance', in Global Development Finance, Washington DC, World Bank
- Ravallion M (2001), Measuring Aggregate Welfare in Developing Countries: How Well Do National Accounts and Surveys Agree? World Bank Working Paper 2665, World Bank, Washington DC
- Rossi, N (1988), Government Spending, the Real Interest Rate and the Behaviour of Liquidity Constrained Consumers in Developing Countries, IMF Staff Papers, Vol. 35 (1), March
- Russell et al (1990), "International Migration and Development in Sub-Saharan Africa," Vol 2, Country Analyses, *World Bank Discussion Papers*, No 102
- Salimano A (2003), Remittances by Emigrants: Issues and Evidence, WIDER Discussion Paper No. 2003/89, WIDER/UNU, Helsinki, Finland
- Sander C (2003), Migrant Remittances to Developing Countries: A Scoping Study, A Paper Prepared for DFID, Bannock Consulting, June
- Stark, O. (1991), *The Migration of Labor*. Cambridge, MA: Basil Blackwell
- Taylor, J. E., (1996), "International Migration and National Development," *Population Index*, Vol 62(2), pp 181-212.