THE ROLE OF REMITTANCES IN THE GROWTH OF DEVELOPING RECIPIENT ECONOMIES

by

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Abstract

International remittances are funds sent by individuals living and working in a foreign economy to their country of origin. This paper seeks to determine whether remittances contribute to the growth of developing countries by investigating how these fund flows affect consumption and investment behaviour of recipients in these economies. Using a panel of 40 developing countries covering the period 1975 to 2003, this paper finds that recipients save about 25-40% of their remittances. However, despite controlling for important factors such as economic openness and level of financial development, estimations on the relationship between remittance savings and domestic investment are inconclusive.

Keywords: Remittances; Consumption and Investment; Economic Growth; Developing Countries; Capital Flows

Para kay Adrian ---
at sa lahat ng Pilipino na di nakalimot lumingon sa pinanggalingan.

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I dedicate this paper to my husband Adrian and my family in Canada and the Philippines who have all waited patiently for me to finish this journey.

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1. Introduction

"Migrant remittances are not an anachronism....
They are safety nets for poor regions left behind by the agglomerative behavior of international capital, by the preoccupations of the international community with other matters, and by the indifference of their own governments."

- Richard C. Jones,
"Introduction: The Renewed Role of Remittances in the New World Order,"1998 [1]

The road to economic growth is paved with good intentions. While increasing global economic integration may have highlighted the great divide between rich and poor countries, it has also created more opportunities to bridge this gap through the smoother flow of goods, people and funds across borders. This has prompted economists to look for ways of using this greater permeability -- whether through freer trade, increased access to international capital markets or migration – to improve the standards of living in developing countries. As a result, a large body of work has accumulated on how disadvantaged countries can fast track themselves to economic growth and development. At the forefront of this search for the ultimate quick fix to growth are the voluminous flows of international remittances to developing countries.

[1] Journal article published in Economic Geography, Volume 74, Issue 1, January 1998, p. 4.

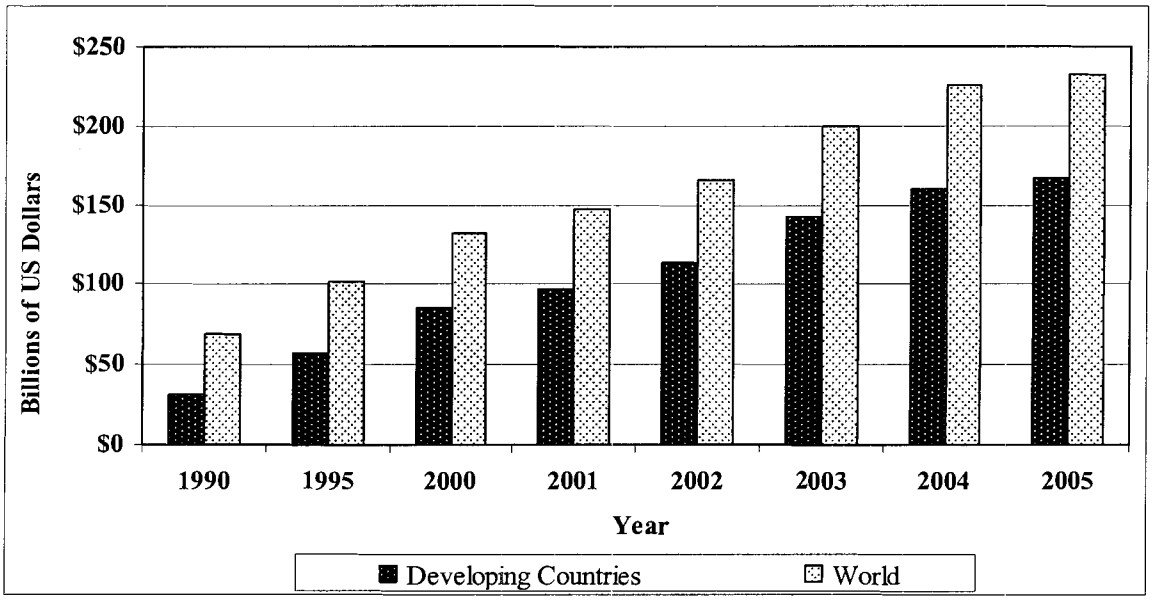
Remittances are funds sent by private individuals living and employed[2] in a foreign economy to persons, usually family members, in their country of origin (Adams, 2005, p. 2). Although remittances are most recognizable in the form of private transfers, they are measured in a country's Balance of Payments (BoP) accounts as the sum of three types of foreign exchange flows: wages and benefits earned by workers abroad; current transfers sent by individuals living as residents in a foreign economy; and the assets relocated by migrants from home to host country (Reinke and Patterson, 2005, p. 3).

There is no denying that remittances have become a major source of income in the developing world. The International Monetary Fund (IMF) estimates that as of 2005, total remittances to developing countries average about US $100 billion per year (Spatafora, Aggrawal and Cabugao, 2005, p.69). It is important to note that because a significant portion of remittances are still sent through informal channels, any approximation of the size of these inflows is generally considered an underestimation.[3] Figure 1 shows not only the magnitude by which remittances have grown from US $68.6 billion in 1990 to an estimated US $232.3 billion in 2005, but also how the bulk of these flows are increasingly heading towards developing countries. During the five-year period of 2000 to 2005, remittances to developing countries grew by almost 100% to about US $167 billion from US $86 billion (World Bank, 2006, p. 88).

[2] For purposes of BoP accounting, the International Monetary Fund classifies a migrant worker as a resident of the new economy if he or she has lived there for a year or longer (Reinke and Patterson, 2005, p.3).

[3] Freund and Spatafora (2005) find that official figures on remittances to developing countries are underestimated by as much as 35-75%.

Figure 1: Remittances to Developing Countries and the World, 1990 to 2005[4]



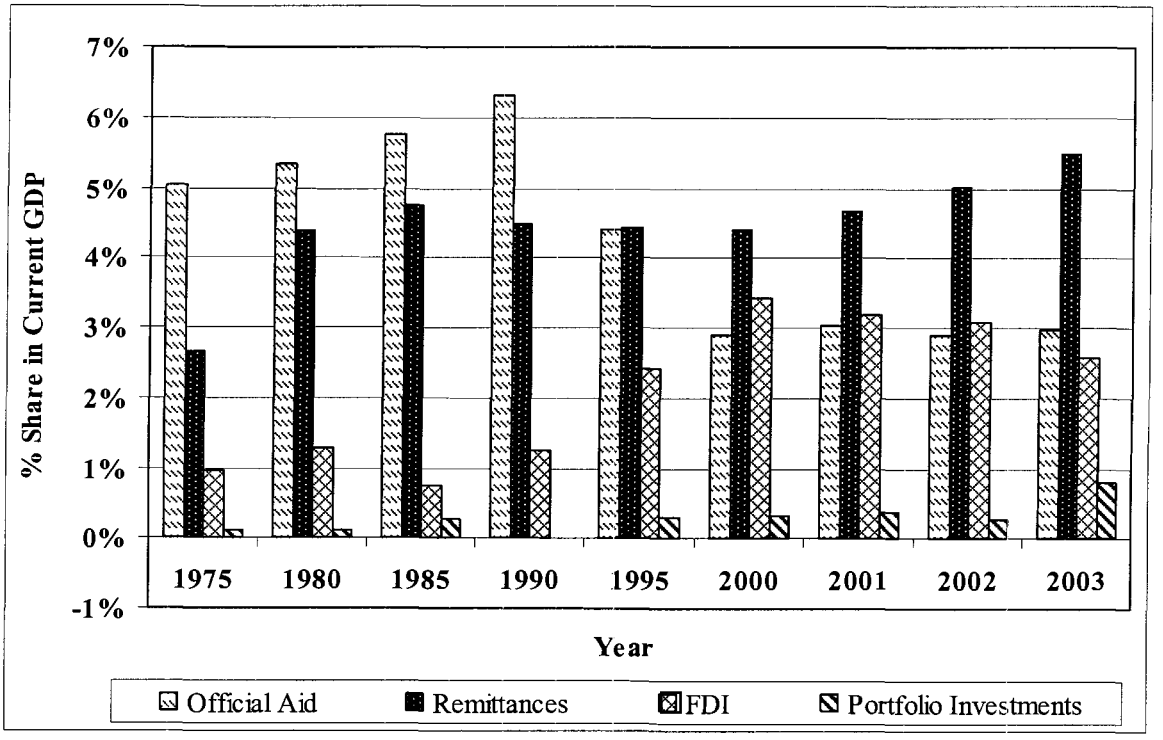
While the substantial growth may be attributed in part to a shift in the mode of transmission from informal to formal channels, the amounts received by a number of developing economies relative to their gross domestic product (GDP) are nonetheless sizeable and indicate a growing dependence on remittances. According to the IMF, the top five remittance recipients for the period 1990 to 2003 in terms of average shares of GDP include Lesotho with remittances from its migrant mine workers accounting for almost 40% of the country's total output. This was followed by Tonga, Lebanon, Samoa and Jordan, each raking in average annual remittance receipts equivalent to 20-25% of their aggregate income. In absolute US dollar terms, emerging market economies India, Mexico, the Philippines, Egypt and Turkey are the top five recipients of remittance flows. Average annual remittances to India is the largest for the period amounting to about US $7 billion closely followed by Mexico with a little over US $6 billion. Receipts for the

[4] Graph constructed using data from Table 4.1 of the World Bank's Global Economic Prospects 2006 edition (World Bank, 2006, p.88).

Philippines, Egypt and Turkey hover within the US $3.5-5 billion range (Spatafora, Aggrawal and Cabugao, 2005, pp.71-72). From the 1990s onwards, remittances to India surged not only because of the significant rise in the number of immigrants to industrialized countries such as the US, Canada and Australia, but also due to the easing of regulations on the flow of capital and the exchange rates (World Bank, 2006, p. 89).

Evidence on the increasing dependency on remittances is strengthened by the fact that after export earnings, remittance flows have become one of the largest and most stable sources of foreign exchange for developing countries. Since the 1990s, remittance flows have rivaled and often overtaken more traditional sources of external financing such as foreign direct investments (FDIs), portfolio investments and official aid. Moreover, because remittance arrangements are often based on personal rather than business ties, the flow of funds from sender to recipient tends to be more stable and long-term. Unlike FDIs, remittances have been shown to behave in a countercyclical manner even for developing countries with relatively mature financial sectors where more opportunities to insure against adverse economic shocks are available (Giuliano and Ruiz-Arranz, 2005, pp. 29-30). For this reason, multilateral funding agencies like the World Bank and various regional development banks as well as developing country governments have tried to eke out as much benefit from remittances as they can either through facilitating the use of remittance savings in small-scale loans commonly known as microfinancing arrangements, or allowing banks to securitize or issue bonds backed by foreign exchange earnings from remittance transactions (World Bank, 2006, pp. 94-104).

Figure 2: Foreign Exchange Flows to Developing Countries, 1975 to 2003[5]



Despite the significant size and stability of these inflows, economists find it difficult to determine the effects of remittances on the growth of recipient economies in the developing world. So far, empirical research on the relationship between remittances and economic growth has yielded mixed results. Spatafora, Aggrawal and Cabugao (2005) try to estimate the impact of remittances on real output per capita using the latest data from 101 countries covering the period 1970 to 2003. Even with the advantage of a larger and more comprehensive country sample compared to previous studies, they find no statistically significant relationship between remittance flows and per capita income. However, their study does show that remittance flows are associated with reduced

[5] Graph based on data from this study's sample of 40 developing countries. Larger samples used by the IMF have FDIs slightly higher than remittances during the years 2001 to 2003. A list of countries in this paper's sample as well as some of their summary statistics can be found in Appendix A.

volatility in aggregate output, consumption and investment (Spatafora, Aggrawal and Cabugao, 2005, pp. 73-77).

Prior to this, Chami, Fullenkamp and Jahjah (2003) presents evidence of a significant negative relationship between the growth rates of gross domestic product (GDP) and remittances. They argue that since remittances tend to compensate recipients for bad economic outcomes this creates incentives for recipients to be less productive and more dependent on these inflows. Because of this, they conclude that remittances, in their current use, are not a source of capital for growth (Chami, Fullenkamp and Jahjah, 2003, pp. 21-23).

In fact, the role of remittances in the growth of developing countries has been the subject of a protracted and still unresolved debate among economists. Conducting a comprehensive review of the theories on remittances spanning more than 30 years, Rapoport and Docquier (2005) outline the progress of this debate starting in the 1970s when a number of studies argued that remittances at best could only be used to overcome short-run liquidity constraints and had minimal long-term effects.[6] They noted some studies during this time even went as far as to assert that remittances financed "conspicuous consumption" or expenditures on luxuries. They added remittances were also purported to discourage labour supply and work effort among recipients which

[6] One example cited by Rapoport and Docquier is the 1978 article "The Role of Urban-Rural Remittances in Rural Development" by Henry Rempel and Richard A. Lobdell published in the Journal of Development Studies. Although this study focuses on urban-to-rural remittances within Kenya, it has been cited in international remittance discussions mainly because of its assertion that remittance funds have little effect on growth.

resulted in increased dependency, lower productivity and thus, delayed growth (Rapoport and Docquier, 2005, pp. 54-55).

By the 1990s, a more benign view of remittances had emerged with researchers disputing pessimistic theories on remittances by pointing out that growth benefits derived from these flows may be substantial but indirect. Stark (1991) notes that because remittances are mainly in the form of cash, they are fungible and could therefore be used to purchase both financial as well as physical assets. Such assets, in turn, can be used in productive activities such as farm investments and entrepreneurial formation (Stark, 1991, pp. 211-214). In this way, remittances act more as a catalyst for growth rather than a direct input to it.

But to settle the issue of whether or not remittances contribute to long-run growth, it is first important to determine how the money is being used across different remittance-receiving economies. The manner by which recipients allocate remittances between consumption and saving will decide if and what policies should be employed to harness remittances as a tool for growth.

This paper attempts to bridge the gap between data and ideas by investigating how developing recipient countries allocate their remittance income between consumption and investment. This study analyzes the remittances-consumption-investment relationship within the context of the Milton Friedman's Permanent Income Hypothesis (PIH) which maintains that all forms of measured income, including

remittances, consist of a permanent and a transitory component, with the former determining the level of consumption while the latter affecting savings and thus, the availability of investable funds (Friedman, 1957, pp. 25-29). This paper argues that remittances, regardless of purpose, have both a permanent and transitory component and therefore increase both consumption and saving/ investment. Moreover, this study asserts that remittances contribute to growth by not only adding to domestic investment through higher savings, but also through productive consumption[7] or the purchases of physical or human capital assets that may be used for productivity-enhancing activities.

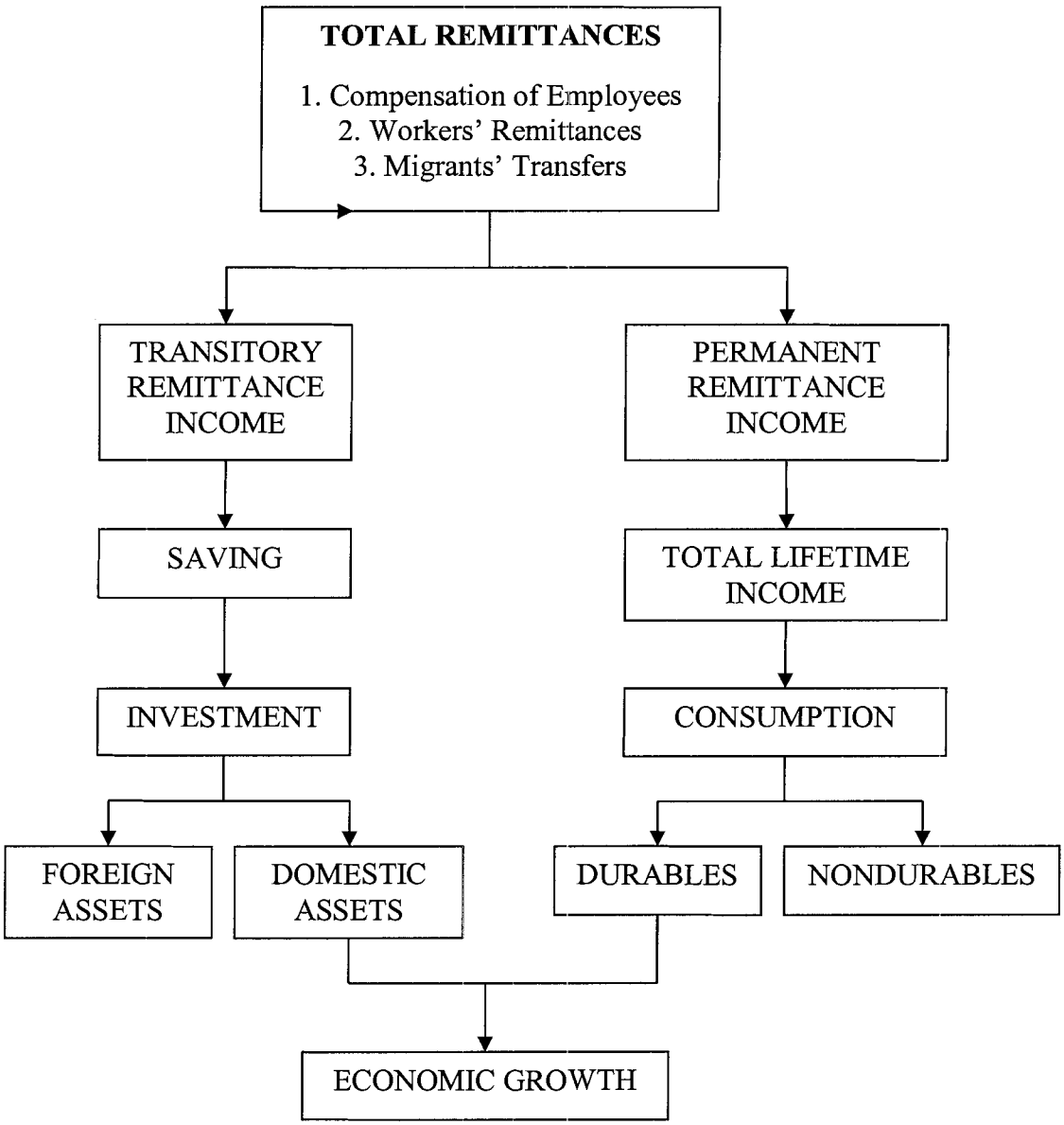
To test the validity of these arguments, this paper estimates an average recipient economy's marginal propensity to consume (MPC) from remittances using a modified Keynesian consumption function and an approximation of permanent remittance income. The resulting MPC is then used to calculate the remittance marginal propensity to save (MPS). The magnitudes of the MPC and MPS provide a measure of how a typical developing recipient economy decides to use each additional dollar of remittance inflows. This paper then investigates whether the amount of remittances saved by recipients have a positive impact on domestic investments and thus, on economic growth. This is done by applying instrumental variable estimation on a saving-investment model that incorporates remittances as a form of private saving.

Figure 3 outlines this paper's theoretical "road map" to economic growth for a typical remittance-receiving economy. The graph begins where remittances enter a

[7] Please see Steger (1997) for a more thorough discussion on productive consumption in developing countries.

recipient economy and ends at the point where these inflows are believed to actually produce growth.

Figure 3: Remittance Inflows and the Permanent Income Hypothesis



The remainder of this paper is as follows. Section 2 provides a review of the ongoing discussion in the literature on the impact of remittances on consumption and investment patterns in developing countries. Section 3 presents an application of the PIH model that incorporates remittances as an income source and formally presents predictions on the determination and effects of changes in remittances on consumption and investment behaviour. Section 4 describes the data and empirical techniques employed to estimate the relationships between remittances and aggregate consumption and investment as well as interpretations of the results. Section 5 presents the conclusions that may be gleaned from this paper and possible extensions for future work.

2. Remittances in Developing Recipient Economies: A Review of Emerging Patterns

"By the problem of economic development, I mean simply the problem of accounting for the observed pattern, across countries and across time, in levels and rates of growth in per capita income. This may seem too narrow a definition, and perhaps it is, but thinking about income patterns will necessarily involve us in thinking about many other aspects of societies too, so I would suggest that we withhold judgment on the scope of this definition until we have a clearer idea of where it leads us."

- Robert E. Lucas, Jr.,
"On the Mechanics of Economic Development,"1988[8]

Prior to the 1990s, the phenomenon of remittances was discussed in economic literature mainly as a by-product of migration. Although understanding of the depth and breadth of remittance flows has improved in later years, the lack of reliable data has limited the scope of research to mostly country and regional case studies. Nevertheless, the information gained from these cases provide clues to an overall pattern in the behaviour of remittance-receiving households across countries.

2.1 Remittances and Consumption

In a study of Mexican households, Zarate-Hoyos (2004) finds that those receiving remittances have lower average expenditures compared to non-recipients in most spending categories. He notes that remittance-receiving households have lower income elasticities for current consumption and spending on durables. Zarate-Hoyos estimates a

[8] Published in the Journal of Monetary Economics, Volume 22, Issue 1, July 1988, pp. 4-42. Quote is found on page 4.

typical recipient household receives remittances equivalent to the minimum wage salary in Mexico and lion's share of these amounts go to savings, equipment and housing-related purchases, and home improvements (Zarate-Hoyos, 2004, pp. 563-564).

On the other hand, Stahl and Arnold (1986) look at consumption patterns among Asian economies Bangladesh, India, Pakistan, the Philippines, Sri Lanka and Thailand and conclude that recipients in these countries spend most of their remittances on basic needs such as food and clothing, home construction/ improvements, and debt repayment. Although Stahl and Arnold believe remittances contribute to growth mainly via durable spending, they raise concern over possible inflation from increased demand in the recipient country (Stahl and Arnold, 1986, pp. 914-919).

Meanwhile, Adams' (2005) investigation into the effects of remittances on the spending patterns of Guatemalan households also shows that recipients tend to spend less compared to non-recipients but focus their funds on human capital investment, particularly secondary education. Adams finds that Guatemalans receiving international remittances spend about 58% more on education compared to non-receiving households (Adams, 2005, p. 20). In an earlier study, Adams (2002) estimates the marginal propensity to save (MPS) from remittance income among rural Pakistani households to be 0.907. Using a model of precautionary saving, Adams attributes this high MPS mainly to perceived uncertainties associated with remittance inflows (Adams, 2002, pp. 13-19).

For his part, Glytsos (2001) uses data from Egypt, Greece, Jordan, Morocco and Portugal to calculate the short- and long-run marginal propensities to consume (MPCs) from remittances among recipient countries in the Mediterranean region. He pegs short-run MPCs to be from 0.241 to 0.562, while long-run MPCs are in the range of 0.531 to 0.847. Among the countries in the sample, Jordan has the lowest short- and long-run MPCs. Like Adams, Glytsos attributes Jordan's low propensity to consume from remittances to the uncertainty of these flows since majority of senders to this country are temporary migrant workers in oil-rich Middle East economies (Glytsos, 2001, pp. 9-11).

2.2 Remittances and Investment

But even as experiences in individual countries indicate that a notable portion of remittances are being saved, the translation from savings to investment is barely imperceptible. So far, Giuliano and Ruiz-Arranz (2005) are among the few who are able to find a significant positive relationship between remittances and domestic investment by controlling for the level of financial development in a recipient economy. Using a sample of 73 developing countries, they show that the positive effects of remittances tend to die down the greater the maturity of an economy's financial sector. Giuliano and Ruiz-Arranz explain this is because remittances are used mainly to alleviate credit constraints and in the presence of more options, remittances are likely to be spent on consumption rather than investment (Giuliano and Ruiz-Arranz, 2005, pp. 17-23).

On the other hand, Buch, Kuckulenz and Le Manchec (2002) find a strong positive correlation between remittances and private capital flows such as foreign direct

and portfolio investments as well as foreign bank lending. They estimate a correlation coefficient of 0.78 and interpret this co-movement as an indication that investment increases with remittances. Buch et. al. argue this shows remittances are not only used to augment household incomes during economic downturns but also employed as an alternative source of capital (Buch, Kuckulenz and Le Manchec, 2002, pp. 16-18). However, these results may not be robust especially for developing countries since the sample used in the study consists of both industrialized and less developed economies. In fact, the authors note that when grouped separately, the correlation between remittances and private capital flows is weaker for developing countries at 0.44 compared to 0.58 for more developed countries (Buch, Kuckulenz and Le Manchec, 2002, p. 16).

Apart from varying levels of financial development and investment conditions, another possible reason why it is so difficult to estimate the relationship between remittances and domestic investment in developing countries may be due to the openness of these recipient economies. Using savings-investment correlations and movements in interest and exchange rates as measures of capital mobility, Montiel (1993) finds that a large number of developing countries are financially open and funds are relatively free flowing. Although data problems make it difficult to ascertain the specific degree to which each country is integrated with the global financial system, Montiel points out that majority of developing economies have already reached a minimum or "de facto" level of financial openness regardless whether they are actively participating in international markets or not (Montiel, 1993, p. 42). Following Feldstein and Horioka (1980), a high degree of economic openness can weaken the link between remittances saved and

domestic investment since capital is free to go where its marginal product is highest. This means that in fairly open developing countries, remittances may be used to buy assets abroad instead of financing investment at home. In this case, the overall gains to remittance-receiving economies will be lower since investors will have to pay taxes to foreign governments for their asset purchases (Feldstein and Horioka, 1980, pp. 314-315).

3. Theoretical Framework: Remittances and the Time Pattern of Income

"Will not a man who receives an unexpected windfall use at least some part of it in 'riotous living,' i.e. in consumption expenditures? Would he be likely to add the whole of it to his wealth? The answer to these questions depends greatly on how 'consumption' is defined."

- Milton Friedman,
"A Theory of the Consumption Function," 1957 [9]

In order to describe the macroeconomic effects of remittances, it is necessary to determine how recipient economies divide remittance income between consumption and savings. Among the existing theories on income allocation, Milton Friedman's Permanent Income Hypothesis (PIH) provides a suitable backdrop for analyzing the remittance-consumption-saving relationship not only because it allows for various measured income sources to be separately accounted for in one model, but it also dichotomizes each source into a permanent and a transitory component affecting consumption and investment respectively. Interestingly enough, Friedman himself does not draw a categorical dividing line between the permanent and transitory components of income. Consumer units may have a concept of the two components beforehand but the magnitude of these can only be estimated after the fact, after people have actually used

[9] Quote can be found on Chapter III, page 28.

their measured incomes. [10] Nonetheless, Friedman describes permanent income as a variable that determines an individual's or household's wealth or total lifetime income. Although changes in permanent income are not always expected, the possible sources of change are already known to the consumer unit and may even be taken into account when making current and future consumption decisions. These may include personal factors like age, education or ability, and external factors more related to the income source such as hazardousness of an occupation. On the other hand, the transitory component is the part of measured income which is affected by unexpected or out-of-the-norm occurrences that may also be caused by either individual factors like illness or even measurement error, or common factors such as natural disasters or a shock in a particular industry employing the consumer unit (Friedman, 1957, pp. 21-23).

The fact that remittances involve the transfer of funds from one private individual to another outside the context of any formal market-type of exchange makes it tempting to categorize this income source as purely transitory. This perception is reinforced by the often adopted assumption in remittance theory that these flows are driven mainly by altruistic motives. But as Friedman points out, permanence and transience depend on the way income is used.

Recent studies particularly that of Rapoport and Docquier (2005) have identified a wide range of other possible motives behind the sending of remittances which may not only determine the amounts remitted but also how the money is used by recipients.

[10] Friedman believed the determination of permanent and transitory incomes depended on the data involved thus making it difficult to predict the size of these components (Friedman, 1957).

Closely related but distinct from the altruistic motive is the theory that remittances are sent as part of a coinsurance arrangement between the sender and recipient. On the one hand, the remitter sends money intended to protect recipients from income volatilities particularly in rural communities where household incomes depend largely on agriculture. Later on, however, recipients may provide material assistance in case the sender becomes unemployed or retired and returns from working abroad (Rapoport and Docquier, 2005, p. 20).

Remittances may also be compensation to recipients in exchange for services performed under informal contracts such as management of assets or caring for relatives left behind. Under this arrangement, senders and recipients bargain the remittance amount to a level between the market price for such services and the recipient's opportunity cost. These types of remittance contracts are often associated with temporary migration (Rapoport and Docquier, 2005, pp. 13-14).

Another kind of exchange compensated through remittances involves the sender's pre-migration investments. Remittances may be a form of repayment for loans incurred from human capital investments made by recipients to facilitate the sender's migration (Rapoport and Docquier, 2005, pp. 28-29).

It is important to note that the various motives behind the sending of remittances are not mutually exclusive. It may be more realistic to think of remitters as guided by a combination of motives usually sending a regular amount for a main purpose but adding

or subtracting along the way depending on the situation at home or in the host country.[11] These various motives that drive both senders and recipients show that remittances are as multidimensional as any source of measured income and must therefore be evaluated based on its own permanent and transitory components.

Consider the relationship between a migrant I living in a foreign country remitting funds to a counterpart H at home.[12] Both I and H will live finite T years and for simplicity, it is assumed that each person's discount rate and the prevailing interest rates are zero.[13] Migrant I has only one income source, $\mathbf{Y_{It}}$, in the host country while H earns both a domestic income (i.e. wages from local employment or earnings from entrepreneurial activities), $\mathbf{Y_{Ht}^{D}}$ and receives remittances from I, $\mathbf{Y_{Ht}^{R}}$ such that,

$$\mathbf{Y_{Ht} = Y_{Ht}^{D} + Y_{Ht}^{R}} \qquad \mathbf{(1)}$$

where $\mathbf{Y_{Ht}}$ is H's total measured income.

According to the Permanent Income Hypothesis, both I's and H's measured incomes can be divided into permanent and transitory components of $\mathbf{P_{jt}}$ and $\mathbf{T_{jt}}$ where $\mathbf{j = I, H}$, respectively. Thus, for I,

$$\mathbf{Y_{It} = P_{It} + T_{It}} \qquad \mathbf{(2)}$$

[11] Please refer to paper by Vargas-Silva and Huang (2005) on tendency of remittances to be affected more by macroeconomic conditions of host rather than home country.
[12] This application of the Permanent Income Hypothesis was constructed based on Romer, 2001, pp. 331-336, Holbrook and Stafford, 1971, pp. 3-4 and Rapoport and Docquier, 2005, pp. 11-12.
[13] Romer makes the same assumptions in his interpretation of Friedman's hypothesis.

and for H,

$$Y_{Ht}{}^{D} = P_{Ht}{}^{D} + T_{Ht}{}^{D} \quad (3)$$

$$Y_{Ht}{}^{R} = P_{Ht}{}^{R} + T_{Ht}{}^{R} \quad (4)$$

For the sender I, the amounts remitted for each period t are determined through the lifetime utility maximization problem:[14]

$$\text{Max} \ \sum_{t=1\ldots T} [\, U_I (C_{It}) + U_H (C_{Ht}) \,]$$

$$\text{subject to} \ \sum_{t=1\ldots T} C_{It} + \sum_{t=1\ldots T} Y_{Ht}{}^{R} \leq E_I + \sum_{t=1\ldots T} Y_{It}$$

where,

E_I is I's initial wealth endowment;

C_{It} is I's consumption for period t;

C_{Ht} is H's consumption for period t;

and $U'(C) > 0$ and $U''(C) < 0$.

I's total utility for each period t is the sum of the utility he derives from his own consumption C_{It} and the utility attained by H.[15]

[14] This maximization problem assumes the migrant has committed to a remittance contract that covers his lifetime but he is not bound by a specific amount. Please see work by Devoretz and Vadean (2006) on the tendency of remittances to dissipate the longer a migrant stays in a host country like Canada.

[15] More recent models of remittances that use a similar framework often present the sender's total utility as a weighted sum of own and recipient utilities from individual consumption. An example of this can be found in Rapoport and Docquier (2005). Although this format is usually associated with altruism models, this is not necessarily assumed here. In the context of remittance relationships, total utility functions of this form may also reflect other motives. Senders may be concerned with recipients' utilities due to fears of social sanctions or inheritance loss if he fails to honor a remittance contract.

Since the Permanent Income Hypothesis asserts that current consumption is determined by permanent income, equations (2), (3) and (4) can be rearranged and used to express both I's and H's individual consumption amounts as

$$\begin{aligned} C_{It} &= P_{It} \\ &= Y_{It} - T_{It} \end{aligned} \tag{5}$$

$$\begin{aligned} C_{Ht} &= P_{Ht}^{\,D} + P_{Ht}^{\,R} \\ &= Y_{Ht}^{\,D} + Y_{Ht}^{\,R} - T_{Ht}^{\,D} - T_{Ht}^{\,R} \end{aligned} \tag{6}$$

Assuming I's liquidity constraint is binding, the Lagrangian for this maximization problem is

$$\begin{aligned} L = {} & \textstyle\sum_{t=1\ldots T} [\, U_I (C_{It}) + U_H (C_{Ht}) \,] \\ & + \lambda_I \, [\, E_I + \textstyle\sum_{t=1\ldots T} Y_{It} - \sum_{t=1\ldots T} C_{It} - \sum_{t=1\ldots T} Y_{Ht}^{\,R} \,] \end{aligned}$$

where λ_I is the Lagrangian multiplier.

The first order condition (FOC) with respect to C_{It} is

$$U_I\,'(C_{It}) = \lambda_I \tag{7}$$

Keeping in mind equations (5) and (6), the FOC with respect to the remittance amount $Y_{Ht}^{\,R}$ is

$$-\,U_I\,'(C_{It}) + U_H\,'(C_{Ht}) = \lambda_I \tag{8}$$

Assuming both utilities have the same quadratic form[16]

$$U(C) = C_0 - C^2/2 \text{ where } U'(C) = -C$$

and substituting equations (5) and (6) for C_{It} and C_{Ht} respectively, the remittance amount for each period t can be obtained by combining equations (7) and (8) to get

$$Y_{Ht}^{R} = \tfrac{1}{3} (Y_{It} - T_{It} - 2Y_{Ht}^{D} + 2T_{Ht}^{D} + 2T_{Ht}^{R}) \qquad (9)$$

Equation (9) then simplifies to

$$Y_{Ht}^{R} = \tfrac{1}{3} (P_{It} - 2P_{Ht}^{D} + 2T_{Ht}^{R}) \qquad (10)$$

Equation (10) shows that remittances come from a portion of the sender's permanent income and decreases as the recipient's permanent income from domestic sources increases. Since T_{Ht}^{R} is transitory remittance income and is saved by the recipient, its positive relationship with the total amount sent may be attributed to an investment or coinsurance arrangement between I and H.

Meanwhile, the recipient H's use of the remittance income is determined by his own utility maximization problem

$$\text{Max } \sum_{t=1...T} U_H (C_{Ht})$$

$$\text{subject to } \sum_{t=1...T} C_{Ht} \leq E_H + \sum_{t=1...T} (P_{Ht}^{D} + P_{Ht}^{R})$$

[16] The same results are obtained when U(C) = ln(C) is used.

where $\mathbf{E_H}$ is the recipient H's initial wealth endowment.

Although H depends on I for part of his total income, his utility may or may not be related to I's because his concern for I's well-being only extends as far as how I's consumption will affect the amount remitted to him. A simplifying assumption can be made that H's takes I's behavior as a variable that only affects his budget constraint through changes in his permanent remittance income $\mathbf{P_{Ht}}^{\mathbf{R}}$.

The Lagrangian for H's maximization problem is

$$\mathbf{L} = \sum_{t=1\ldots T} \mathbf{U_H}(\mathbf{C_{Ht}}) + \lambda_I \left[\mathbf{E_H} + \sum_{t=1\ldots T} (\mathbf{P_{Ht}}^{\mathbf{D}} + \mathbf{P_{Ht}}^{\mathbf{R}}) - \sum_{t=1\ldots T} \mathbf{C_{Ht}} \right]$$

and the FOC with respect to $\mathbf{C_{Ht}}$ is the familiar

$$\mathbf{U_H}'(\mathbf{C_{Ht}}) = \lambda_H \qquad (11)$$

Equation (11) indicates that the marginal utility of consumption is determined solely by the current level of consumption. Moreover, (11) shows that marginal utility is the same for each period t which means consumption is also constant across H's lifetime. This implication may be expressed in the following manner using H's budget constraint,

$$\mathbf{C_{Ht}} = 1/T \left[\mathbf{E_H} + \sum_{t=1\ldots T} (\mathbf{P_{Ht}}^{\mathbf{D}} + \mathbf{P_{Ht}}^{\mathbf{R}}) \right] \qquad (12)$$

Equation (12) is a restatement of the Permanent Income Hypothesis that incorporates remittance income. This version illustrates how a portion of remittance

income received during one's lifetime determines a recipient's current consumption. This means recipients' spending decisions will depend not just on the current level of remittances but also on future receivables from abroad. Therefore, consistent increases in remittances such as those observed in recent years will directly raise consumption levels in recipient countries.

On the other hand, the amount of income saved for each period t in the face of remittance flows can be determined by

$$S_{Ht} = Y_{Ht} - C_{Ht} \tag{13}$$

Substituting equation (12) into (13) yields

$$S_{Ht} = [Y_{Ht} - (1/T) \sum_{t=1...T} (P_{Ht}^{D} + P_{Ht}^{R})] - (1/T) E_H \tag{14}$$

Using (3) and (4), equation (14) can then be rewritten as

$$S_{Ht} = [(Y_{Ht}^{D} - (1/T) \sum_{t=1...T} P_{Ht}^{D}) + (Y_{Ht}^{R} - (1/T) \sum_{t=1...T} P_{Ht}^{R})] - (1/T) E_H \tag{15}$$

The difference between current incomes Y_{Ht}^{D} and Y_{Ht}^{R} and the average permanent incomes for domestic income and remittances respectively can be interpreted as estimates of transitory incomes from each source. Equation (15) implies that an increase in remittances will also increase saving via the rise in transitory remittance income.

Both equations (12) and (15) provide two simple theoretical predictions that can be tested. Equation (12) implies that an increase in remittance flows will raise

consumption because the permanent component of remittance income will add to the recipient's lifetime wealth. At the same time, equation (15) predicts that not all of the increases in remittance income will be spent. Recipients may use the transitory component of remittances in addition to savings from domestic income sources in order to smooth consumption in the long-run.

The next step is addressing the issue of relative magnitudes. If both consumption and saving rise due to a boost in remittances, the greater concern when it comes to economic growth is whether one type of increase dominates the other. Although it may be a given that a larger part of remittance income will go to consumption, the estimate of "how much more" will be useful in determining if developing countries are saving too little or just enough.

A simple Keynesian consumption function can be used to measure how recipients allocate remittance income between consumption and saving. Following the model above, the consumption function can be expressed as

$$C_{Ht} = \delta_0 + \delta_1 Y_{Ht}^{R} + \delta_2 Y_{Ht}^{D} + \epsilon_\delta \qquad (16)$$

Or, in the context of the PIH,

$$C_{Ht} = \beta_0 + \beta_1 P_{Ht}^{R} + \beta_2 P_{Ht}^{D} + \epsilon_\beta \qquad (17)$$

where δ_1 is the marginal propensity to consume (MPC) out of measured remittance income, β_1 is the MPC from permanent remittance income and the ϵ terms capture the unexpected changes in consumption. These unexpected changes are known in PIH literature as transitory consumption (Friedman, 1957, pp. 22-23).

In choosing between δ_1 and β_1, it is important to remember that according to the PIH permanent income should determine consumption. Therefore, β_1 is the more accurate measure of the MPC that should be estimated. The problem now lies in obtaining a good representation of permanent remittance and domestic incomes.

One such approach is an errors-in-variables method used by Holbrook and Stafford (1971) in their estimation of MPCs from different sources of income.[17] Following the Permanent Income Hypothesis, Holbrook and Stafford try to correct for the "error" in the measurement of permanent income when current or measured income is used in its place in estimations of a consumption function. The correction involves the calculation of an unexpected change between time periods variable using the following formula (Holbrook and Stafford, 1971, pp. 7-11):

$$\mathbf{U_{it}^{m} = (Y_{it}^{m} - Y_{it-1}^{m}) - [1/T\,(\sum_{t=1...T} Y_{it}^{m}) * g_t]} \qquad \mathbf{(18)}$$

where $\mathbf{m = R, D}$.

[17] Athough there are other ways of estimating the permanent and transitory components of income, most notably that of Hall and Mishkin (1982). This particular approach was chosen because it was used exactly for the same purpose of estimating the MPCs from different types of income including transfer income.

The first term on the right-hand side $(Y_{it}^{m} - Y_{it-1}^{m})$ is the actual change in measured remittance income for country i from period t to t-1 while the second term $[1/T\ (\sum_{t=1...T} Y_{AVE\ it}^{m}) * g_t]$ represents the expected change in remittance income. The expected change is a product of the average mean income for period t and the average annual growth rate of income for the total T years.

The unexpected changes in a particular income source for each country i at time period t are then subtracted from the corresponding measured incomes. The idea behind this is to estimate

$$C_{Ht} = \gamma_0 + \gamma_1 (Y_{Ht}^{R} - U_{Ht}^{R}) + \gamma_2 (Y_{Ht}^{D} - U_{Ht}^{D}) + \epsilon_\gamma \quad (19)$$

in place of equation (17).

The argument for consistency in the resulting coefficient estimates hinges on the assumption that $E[(Y_{Ht} - U_{Ht})^{T} \epsilon_\gamma] = \varnothing$ just as $E[P_{Ht}^{T} \epsilon_\beta] = \varnothing$ where Y_{Ht} refers to the measured income source vector $[Y_{Ht}^{R}\ Y_{Ht}^{D}]$ while U_{Ht} and P_{Ht} are its respective transitory and permanent counterparts. The disturbance terms ϵ_γ and ϵ_β also represent transitory consumption vectors where each element of each vector is associated with the different income sources R and D.

Friedman already assumes permanent consumption, which is determined by permanent income, is uncorrelated with transitory consumption represented by the disturbance term in the consumption function. Likewise, Holbrook and Stafford assert that if $\mathbf{P_{Ht}}$ could be estimated and plugged into equation (19), this would satisfy the requirements for Ordinary Least Squares (OLS) estimation, foremost of which is exogeneity where $\mathbf{E}\ [\mathbf{P_{Ht}}^{\mathbf{T}}\ \epsilon_\gamma\ ] = \varnothing$ (Holbrook and Stafford, 1971, p.4). Thus, the assumption $\mathbf{E[(Y_{Ht} - U_{Ht})}^{\mathbf{T}}\ \epsilon_\gamma] = \varnothing$ is merely a natural extension of these earlier premises. It states that measured income and transitory income are correlated to transitory consumption in exactly the same way since

$$\mathbf{E}\ [\mathbf{Y_{Ht}}^{\mathbf{T}}\ \epsilon_\gamma\ ] - \mathbf{E}\ [\mathbf{U_{Ht}}^{\mathbf{T}}\ \epsilon_\gamma\ ] = \varnothing \qquad \mathbf{(20)}$$

$$\mathbf{E}\ [(\mathbf{P_{Ht}} + \mathbf{U_{Ht}})^{\mathbf{T}}\ \epsilon_\gamma\ ] - \mathbf{E}\ [\mathbf{U_{Ht}}^{\mathbf{T}}\ \epsilon_\gamma\ ] = \varnothing \qquad \mathbf{(21)}$$

$$\mathbf{E}\ [\mathbf{P_{Ht}}^{\mathbf{T}}\ \epsilon_\gamma\ ] + \mathbf{E}\ [\mathbf{U_{Ht}}^{\mathbf{T}}\ \epsilon_\gamma\ ] - \mathbf{E}\ [\mathbf{U_{Ht}}^{\mathbf{T}}\ \epsilon_\gamma\ ] = \varnothing \qquad \mathbf{(22)}$$

In short, measured income only affects transitory consumption through unexpected change or fluctuations in transitory income.

4. Empirical Relationships between Remittances, Consumption and Investment

"The greatest of all gifts is the power to estimate things at their true worth."

- Francois La Rochefoucauld, 1747- 1827[18]

This paper aims to determine how developing recipient economies allocate remittances between consumption and domestic investment. Three steps are taken to achieve this goal. First, measures of the permanent and transitory components of different types of current income are calculated. Then, these components are employed in two separate sets of regressions with the permanent components used to estimate an average recipient country's consumption function, particularly its marginal propensity to consume (MPC) from permanent remittance income. The MPC indicates how much of each extra remittance dollar that adds to lifetime wealth goes to consumption. Finally, transitory remittance income is included in determinants of investment regressions to investigate how variations in the amounts of remittances saved affect domestic investment. These investment regressions treat transitory remittances as a proxy for private saving in developing recipient economies.

[18] Quote from "Mining Investment Analysis" by Donald W. Gentry and Thomas J. O'Neil 1984, p. 103.

4.1. Data

This study uses annual data from 1975 to 2003 covering a panel of 40 developing countries.[19] Because measurement error is a major issue not only for remittance data but also in the estimation of permanent and transitory incomes, almost all dependent and independent variables are expressed as shares of gross domestic product (GDP) in current US dollars. This is done to minimize possible rescaling errors that may arise from converting nominal statistics into real values.

The only inflation-adjusted data included are real GDP used in the calculation of transitory incomes, and real interest rates employed in the consumption regressions. Real interest rates are calculated by subtracting an estimate of the country's inflation rate from the nominal interest rate and dividing the difference by one plus the estimated inflation. In this case, the inflation rate is approximated using the GDP deflator (WDI, 2004, p. 281). Both real GDP and real interest rate data come from the World Bank and are deflated using year 2000 prices while the nominal GDP series used as denominator for all shares of income variables is from the IMF World Economic Outlook (WEO) dataset.

4.1.1. Dependent Variables

The two main dependent variables in all regressions are private household consumption and domestic investment. Private consumption is measured using household final consumption expenditure data in millions of current US dollars culled from the World Bank's World Development Indicators (WDI) database. Household final

[19] Please see Appendix A for a list of the countries included in the sample as well as some per-country summary statistics. Statistical highlights for the entire panel data can be found in table 1.

consumption expenditure represents the market value of all goods and services purchased by households including durable goods and fees paid to government authorities for licenses and permits (WDI, 2004, p. 221). As a dependent variable, private consumption is expressed as a share of current GDP and labeled CONSUME.

Meanwhile, domestic investment data is also obtained from the WDI as the series gross capital formation. Formerly known as gross domestic investment, gross capital formation includes expenses incurred from additions to a country's fixed assets as well as net changes in inventories and acquisition of valuables (WDI, 2004, p. 217). The series covers both government and private sector investments[20] with fixed assets ranging from plant machinery and equipment purchases to road and railway construction. It should be noted that data obtained from this series from 1975 to 1998 is originally reported in millions of US dollars and was subsequently divided by the IMF's current GDP statistics to match investment figures from 1999 to 2003 which were already expressed as shares of total income. The domestic investment-to-GDP ratio is known as GDI.

4.1.2. Remittances

Of all explanatory variables used in the estimations, remittances are the most important and also the most difficult to construct. Apart from having to calculate total remittances from three separate data series, the resulting total remittance figures are then recomputed to produce the permanent and transitory components of remittance income.

[20] Although various statistics on private investment may be available, this often results in a smaller sample size because less information is available for more specific data. More importantly, gross domestic investment includes data on fixed assets which provides a way of measuring how much of durable spending is actually productive consumption.

All remittance-related data are obtained from the IMF's Balance of Payments (BoP) Statistical Yearbook electronic and print versions already expressed in millions of US dollars. Since the main concern of this study is the effect of remittance inflows, only credit items are included. Following IMF guidelines for the calculation of remittances, total remittance inflows are obtained as the sum of the following BoP items (Reinke and Patterson, 2005, p. 3):

a.) **Compensation of Employees** – wages, salaries and other allowances paid to nonresident workers. This BoP item appears is included in the Current Account under Investment Income. It is also recorded in National Income Accounts as part of Net Factor Payments from Abroad in some developing countries.

b.) **Workers' Remittances** – current transfers made by migrants who are living and working as residents in the host country. This item is included in the Current Account as a Private Transfer.

c.) **Migrants' Transfers** – counter-entries to the flow of goods and changes in financial account items resulting from relocation of migrants' assets. This is recorded in the Capital Account as a Capital Transfer.

One important drawback to this method of calculating remittances is that variations in the total remittance data may be partly caused by specific measurement problems in the individual BoP items and have nothing to do with the true behavior of the these inflows. In short, calculating remittances as a sum of three separate data series can lead to cases where missing data gives the impression of a downtrend. For example, a country that otherwise receives a healthy dose of remittances but has missing data on migrants' transfers during the years 2000 to 2003 may appear as though it experiencing a decline in remittance inflows for that period. In this paper, it is assumed that these measurement problems are specific to an individual country such as differences in BoP

accounting systems or regime changes, and the effects on the dependent variable are captured by the country effects variables in the regressions.

In order to calculate permanent remittance income, the differences in total remittances between periods are first obtained for each country in the sample data. These differences represent the actual change in remittance levels for each country from one period to the next. Expected changes in remittance income are then calculated based on the second term of Holbrook and Stafford's formula in equation (18). In this case, the anticipated change in a country's remittance income is measured by the average remittance income for 1975 to 2003 multiplied by the mean annual growth rate of its real GDP for the same duration. Simply put, a country's remittance income is expected to grow by an amount equal to a fixed proportion of its mean value for a given period. This fixed proportion, in turn, is determined by the country's average annual growth rate for the same time interval.[21]

Having obtained the actual and expected changes in remittance levels, the latter is then subtracted from the former to get the unexpected change in remittance income or transitory remittance income. Permanent income is calculated by subtracting the unexpected change from total current remittance levels. Both are then divided by current GDP with transitory income is labeled TREMIT while permanent income is PREMIT.[22]

[21] Following the reasoning that remittances are more dependent on economic fluctuations in host rather than home country, a separate remittance consumption function was estimated with transitory remittance income calculated using average world GDP growth rate. These produced almost exactly the same results.
[22] The summary of formulas for this section can be seen in Appendix B.

4.1.3. Control Variables

Since remittances only account for one possible albeit foreign source of income, it is necessary that the consumption regressions include a control variable measuring all other income domestically received. In lieu of wage and household income data that is difficult to obtain across countries, a proxy is constructed based on the sum of the value added from each country's agricultural, industrial and services sectors. Sectoral value added is culled from World Bank estimates submitted to the United Nations statistical database and originally expressed in national currency units. These values are converted to US dollars using country official exchange rates and the resulting figures are then divided by same current GDP data as before. The label for this variable is DOMINC.

DOMINC provides a measure of household income from domestic sources. Its use assumes that each worker in an economy is receives a wage equal to their marginal product. But it is important to note that at best, DOMINC represents income from participating in the formal sector of the economy. Nonetheless, the contribution of income earned from participating in the underground economy to private consumption will be captured in the intercept. DOMINC also does not include income from returns to saving. The permanent component of DOMINC is calculated the same way as PREMIT and is included in the consumption regressions as PDOMINC.

Other control variables constructed for this study include two measures of financial development. These consist of BANKCRED, which is the ratio of domestic lending provided by banking sector to current GDP, and QMONEY which refers to quasi-money represented by the sum of demand, savings, time and foreign currency

deposits also expressed as a share of total income. Domestic bank lending data was obtained from the WDI while various deposit figures come from the IMF International Financial Statistics (IFS) database.

BANKCRED measures the growth of a financial system because it shows how much of a country's savings are financial. It includes both private sector and government loans (WDI, 2004, p. 273). On the other hand, QMONEY shows the principal liabilities of a country's financial system (IFS, 2006, p. xvii).

Finally, regressions in the paper also utilized measures of economic openness, government saving and the user cost of capital. Openness of the economy or OPEN is represented by the sum of exports and imports divided by current GDP. Meanwhile, government saving is first converted from data in national currency units estimated by the World Bank into US dollars using official country exchange rates. Converted values are then divided values by nominal GDP and the resulting variable is called SG.

Apart from the real interest rate variable or REAL, lending interest rates are also employed for the investment regressions. In keeping with the scale of ratios used in the other variables, lending and real interest rate values are expressed as proportions instead of percentages. Lending rates are labeled LENDING. Exports and imports data as well as lending rate figures are also taken from the WDI.

4.1.4. Statistical Highlights

Table 1 outlines statistics describing this study's panel data set. Countries in the sample are generally open with total trade averaging about 68% of total output. The lowest total trade-to-GDP ratio of 4.6% was recorded for Ghana in 1982. Since then, Ghana's trade-to-GDP ratio has grown to 109% as of 2003. The most open economy in the sample is Malaysia with its combined exports and imports reaching an equivalent of more than double the country's total income during the years 2000 to 2003.

In terms of financial development, mean values for QMONEY and BANKCRED indicate that activities of the financial sectors in these sample countries, whether in the form of loans or deposits, are equivalent to 32-46% of current GDP. The minimum value for BANKCRED refers to Botswana which has experienced negative domestic bank lending since 1983. Because BANKCRED includes net credits to central governments, a negative domestic bank lending-to-GDP ratio indicates an excess of government deposits over claims in the banking system (WDI, 2004, p. 281).

Another interesting feature of the data set are the extreme values of real interest and lending rates. A negative real interest rate means a loss in purchasing power of the nominal rate (WDI, 2004, p. 281). The minimum real interest rate of -97.8% for this sample refers to Bolivia during its hyperinflation crisis in 1985. At the time, Bolivia's inflation rate skyrocketed to 117.5% (WDI CD-ROM, 2001). During the same year, Israel also grappled with its own hyperinflation problems[23] with consumer price increases

[23] For a more thorough discussion on this issue, please see article by Patinkin (1993).

averaging almost 500%. This resulted in unusually high nominal interest rates including lending rates reaching 823% and real interest rates at 88%.

Table 1: Descriptive Statistics of Main Variables[24]

Variable	Mean	Median	Standard Deviation	Max	Min
Remittances as a Share of GDP (REMIT)	0.0446607	0.0197633	0.0934841	0.8687356	0
Private Consumption as Share of GDP (CONSUME)	0.6921513	0.6914337	0.1543055	1.415908	0.0201774
Gross Domestic Investment as Share of GDP (GDI)	0.2283311	0.221733	0.0825363	0.8160999	0.0041154
Domestic Formal Sector Income as a Share of GDP (DOMINC)	1.094552	1.092683	0.1102877	1.608696	0.4488806
Domestic Bank Lending as a Share of GDP (BANKCRED)	0.4598245	0.3972054	0.3487302	2.3208	-0.7850868
Bank Deposits as a Share of GDP (QMONEY)	0.3201558	0.2620069	0.2424563	2.243165	0.0000000684
Total Trade as a Share of GDP (OPEN)	0.6818687	0.6188887	0.3613695	2.276982	0.0461234
Real Interest Rates (REAL)	5.99431%	5.98503%	0.1154007	88.11353%	-97.81217%
Domestic Lending Rates (LENDING)	20.19032%	15%	0.3707235	823.0333%	0%
Current Fiscal Balance as a Share of GDP (SG)	-0.0379679	-0.0310731	0.0608929	0.2595977	-0.6616061

Meanwhile, tables 2 and 3 provide a comparison of countries with the highest average shares of permanent and transitory remittances in total output and their varying

[24] As before, all figures in table 1 except standard deviations and interest rates are expressed as shares of current GDP.

degrees of openness and levels of financial development. It is important to clarify that averages presented in tables 2 and 3 are calculated using the absolute values of permanent and transitory remittance shares. This is done because transitory remittances are computed as the difference between actual and expected changes in measured income and there are cases where its value is negative. The use of absolute values prevents shares with opposite signs from canceling out and yielding underestimated averages.

Table 2: Top Five Countries with Highest Average Permanent Remittance Income Shares in Total Output

Country	Permanent Remittances to Current GDP	Transitory Remittances to Current GDP	Openness	Financial Development	
				BankCred	QMoney
Lesotho	0.5726078	0.0716302	1.27023	0.156164	0.3080228
Jordan	0.1912386	0.0257132	1.182992	0.8084877	0.7500969
Swaziland	0.078299	0.0111862	1.641026	0.088912	0.2744228
El Salvador	0.0662752	0.0091699	0.5622836	0.4149445	0.064938
Egypt	0.0653746	0.0123147	0.4595437	0.9540209	0.5537436

Interestingly, the four countries with the highest average shares of permanent remittances in total output also have the largest transitory remittance-to-GDP ratios. These are Lesotho, Jordan, Swaziland and Egypt. Lesotho has the highest shares in both permanent and transitory remittances with 57% and 7.2% respectively, and is relatively more open compared to other countries in the sample. The same is true for Jordan which has the second largest average shares for both components of remittance income at 19% and 2.6%. However, the similarities end there. Lesotho lags behind Jordan in terms of financial development with domestic bank lending activities equivalent to only 15% of current GDP compared to the latter's 81%. Although Lesotho's average QMONEY

levels are close to the sample mean at 30% of total income, it is still much lower than Jordan's 75% deposit-to-GDP ratio.

Table 3: Top Five Countries with Highest Average Transitory Remittance Income Shares in Total Output

Country	Transitory Remittances to Current GDP	Permanent Remittances to Current GDP	Openness	Financial Development	
				BankCred	QMoney
Lesotho	0.0716302	0.5726078	1.27023	0.156164	0.3080228
Jordan	0.0257132	0.1912386	1.182992	0.8084877	0.7500969
Syria	0.0140455	0.0371908	0.5365105	0.5616071	0.7120085
Egypt	0.0123147	0.0653746	0.4595437	0.9540209	0.5537436
Swaziland	0.0111862	0.078299	1.641026	0.088912	0.2744228

Like Lesotho, Swaziland is also a fairly open economy but with lower than average financial development. On the other hand, Egypt and Syria both have above average financial development but relatively closed economies. El Salvador is both financially underdeveloped and less open compared to other countries in the sample.

4.2. Estimation and Results

All regressions for this paper were run using Stata version 8.2. Standard errors are enclosed in parentheses and represent Serial Correlation-Robust standard errors[25] which are not only adjusted for heteroskedasticity but also for possible autocorrelations in the errors of time series observations that belong to the same country group. [26] Asterisks

[25] Please see online article by Kohler and Rodgers (2001) entitled "DF-Analyses of Heritability with Double-Entry Twin Data: Asymptotic Standard Errors and Efficient Estimation" at http://www.ssc.upenn.edu/~hpkohler/data-and-programs/twdfeff/twdfeffprograms.html#x1-50004.

[26] All estimated equations for the consumption and investment regressions are checked for heteroskedasticity via inspection of residual plots and for serial correlation by regression of model residuals on its lagged values. Plot inspections show correlation of residuals with PREMIT in some regressions but inconclusive results were obtained for serial correlation. Nonetheless, robust standard errors that assume both problems exist are used.

(*) beside a coefficient estimate represent the significance levels at which the null hypothesis that a coefficient is zero is rejected. Three asterisks denote 10% significance while two refer to 5%. One asterisk means the null hypothesis is rejected at the 1% level of significance.

4.2.1. The Remittance Consumption Function

To investigate the effect of remittances on consumption behavior, the marginal propensity to consume (MPC) from permanent remittance income is estimated by applying Ordinary Least Squares (OLS) on the following modified consumption function:

$$\begin{aligned} \mathbf{CONSUME_{it}} &= \mathbf{a_0 + a_1\, PREMIT_{it} + a_2\, PDOMINC_{it}} \\ &\quad \mathbf{+ a_3\, REAL_{it} + a_4\, FD_{it} + a_5\, PREMIT_{it} * FD_{it}} \\ &\quad \mathbf{+ a_6\, COUNTRY_i + a_7\, TIME_t + e_{it}} \end{aligned}$$

where $\mathbf{e_{it}}$ captures the unobserved effects on private consumption while $\mathbf{FD_{it}}$ indicates the level of financial development. As mentioned in section 4.1, all regressions in this study use BANKCRED or QMONEY as two separate measures of financial development. Country and time effects are also included.

Although real interest rates were assumed to be zero in section 3 for purposes of discussion, these must be accounted for in the regressions since they represent the price of current consumption in terms of future consumption. Thus, an increase in real rates can either induce a substitution effect with people reducing present consumption because its price has increased or an income effect where individuals increase current spending because they feel richer from the rise in returns from their existing savings (Abel, Bernanke and Smith, 2003, p. 110).

The interaction between permanent remittance income and level of financial development accounts for the use of remittances as an alternative source of credit especially in countries where financial markets are underdeveloped. However, the effect on consumption may be ambiguous since individuals can save more to loan out money and earn interest, or use the funds to increase their own current consumption.

Table 4 presents the results of baseline OLS regressions comparing the partial effects of measured versus permanent component versions of remittances and domestic income. On the other hand, table 5 shows the OLS estimations using permanent income components as well as interactions between PREMIT and FD.

Models (A) and (B) in table 4 involve the regression of consumption on measured remittance and domestic source incomes. The MPCs from remittances and domestic income are about 0.82 and 0.02, respectively. Treating this as a case of classical errors-in-variables OLS estimation where the measurement error or transitory income is assumed under the Permanent Income Hypothesis to be uncorrelated with permanent income, the coefficient estimates from (B) should be considered attenuated with 0.82 and 0.02 underestimating the true MPCs from permanent remittance and domestic source income.

Table 4: Baseline Remittance Consumption Functions without Interaction Effects

Variables	Model (A)	Model (B)	Model (C)	Model (D)
Current Remittances as a Share of GDP (REMIT)		0.817406*** (0.0904696)		
Domestic Formal Sector Income as a Share of GDP (DOMINC)	0.0201333 (0.0285734)	0.0189376 (0.0277107)		
Permanent Remittance Income (PREMIT)			0.7764358*** (0.0862757)	0.652143*** (0.0487908)
Permanent Domestic Formal Sector Income (PDOMINC)			0.027902 (0.0260889)	0.0755321*** (0.0226497)
Real Interest Rates (REAL)				0.1945317*** (0.0539415)
INTERCEPT	0.8256399*** (0.0404333)	0.8248583*** (0.0382701)	0.7632817*** (0.0347667)	0.7469865*** (0.0480135)
Linear Restriction P-Values (Ho: $a_1 = a_2$)		0.0000	0.0000	0.0000
R-Squared	59.43%	63.65%	64.77%	74.56%
Number of Observations	1102	1100	1061	762

Models (A) to (D) show that domestic permanent income sources contribute only a small portion to the increases in private consumption. In fact, estimated MPCs from all consumption regressions reveal that measured and permanent versions of domestic income add only about .02 to .08 percentage points to the consumption-to-GDP ratio. Furthermore, linear restriction tests were performed for both baseline and interaction effects regressions to see whether remittances and domestic income sources lead to the same partial effect on consumption and the null is rejected at 1-5% levels of significance in all cases (Wooldridge, 2003, p. 139).

One possible explanation for the weak effect of domestic income is the relatively high rates of unemployment among countries in the sample. In fact, almost half of the countries experienced double-digit unemployment rates in the last two years of the data set with South Africa being the highest at 29.5% for the period 2000 to 2002 (WDI, 2004, pp. 50-53). High unemployment makes people view income from this source as more transitory and so even large chunks of permanent domestic income are saved. Moreover, the results also indicate that people may be financing their consumption through participation in the underground economy. Both tables 4 and 5 show that even with no remittances and no formal income, the consumption-to-GDP ratio continues to increase significantly by 75 to 83 percentage points.

Table 5 outlines the results from OLS regressions using two versions of the interaction between permanent remittances and financial development variables. The first set uses general interaction terms which allow for any level of PREMIT and financial development. The other set utilizes centered interactions where PREMIT and financial development variables are transformed by subtracting country averages from the data. Centered interactions have the advantage of minimizing multicollinearity which is a common problem for regressions with interacted variables.[27]

[27] Please refer to web article by Preacher (2004) entitled "A Primer on Interaction Effects in Multiple Linear Regression" at http://www.unc.edu/~preacher/interact/interactions.htm.

Table 5: Remittance Consumption Functions Based on Permanent Income Sources with General and Centered Interaction Effects

Variables	General Interactions		Centered Interactions	
	BANKCRED	QMONEY	BANKCRED	QMONEY
Permanent Remittance Income (PREMIT)	0.216482 (0.1475112)	0.3518086 (0.3575023)	0.7520401*** (0.079831)	0.7754838*** (0.0865087)
Permanent Domestic Formal Sector Income (PDOMINC)	0.080752*** (0.0237585)	0.0779019*** (0.0218624)	0.0767123*** (0.0235763)	0.0768525*** (0.0222611)
Financial Development (FD)	-0.0783381** (0.0375396)	-0.0753725 (0.0662878)	-0.0582811** (0.0385982)	-0.0622336 (0.0594233)
Interaction of Permanent Remittance Income and Financial Development (PREMIT*FD)	0.8414922*** (0.258752)	0.7128504 (0.7668646)	-1.415399* (0.7536775)	-2.215752 (1.119875)
Real Interest Rates (REAL)	0.2042014*** (0.0557349)	0.1970714*** (0.0561153)	0.1994165*** (0.0573236)	0.1919779*** (0.05684)
INTERCEPT	0.7489741*** (0.0489224)	0.7523094*** (0.0452576)	0.7500816*** (0.0476944)	0.7523377*** (0.0446642)
Joint Significance P-Values (Ho: $a_1 = 0$; $a_5 = 0$)	0.0000	0.0000	0.0000	0.0000
Linear Restriction P-Values (Ho: $a_1 + a_5 = a_2$)	0.0000	0.0000	0.0227	0.0000
R-Squared	75.41%	74.95%	75.15%	75.04%
Number of Observations	758	756	758	756

Using two types of interaction terms allows for interesting interpretations of these regression results. It is important to note that with the use of interaction terms, the marginal effect of PREMIT on private consumption in not only the coefficient a_1, but the sum $a_1 + a_5*FD_{it}$. Thus, tests of joint significance were conducted on a_1 and a_5 which resulted in a rejection of the null at 1% for all consumption regressions (Wooldridge, 2003, pp. 194-196).

In order to get a more informative interpretation of the partial effect of remittances form the general interaction regressions, overall sample mean values of the financial development variables such as 46% for BANKCRED and 32% for QMONEY were plugged into $a_1 + a_5*FD_{it}$. Both mean values for financial development yielded an estimated MPC of about 0.60.

For centered interactions, the coefficient a_1 is interpreted as the partial effect of PREMIT when a particular country is at its mean level of financial development (Wooldridge, 2003, pp. 194-195). In this case, the remittance MPC is 0.75 to 0.77. This implies that when a developing country does not experience any shocks to its financial sector, recipients will choose to earmark 75-77% of each additional remittance dollar that adds to lifetime wealth for current consumption.

All in all estimations of the consumption function find a remittance MPC that is between 0.60 to 0.77 which cover values that are actually lower than the supposedly attenuated measured income MPC of 0.84. However, a more important implication of these results is that the marginal propensity to save (MPS) from permanent remittance income is 0.25 to 0.40. This means recipients are saving significant amounts of permanent remittances on top of their transitory income.

4.2.2. Remittances and the Determinants of Investment

Having shown that remittances not only increase consumption but also savings, the next question to ask is whether the amount of remittance income saved is enough to

increase domestic investment. Obtaining the answer requires the estimation of a determinants of investment model that not only includes transitory remittance income as a measure of private saving, but also incorporates the ceteris paribus and interaction effects of an individual country's economic openness and level of financial development. Such a model can be characterized as:[28]

$$\begin{aligned} GDI_{it} &= b_0 + b_1\, GDI_{it-1} + b_2\, TREMIT_{it} + b_3\, OPEN_{it} + b_4\, FD_{it} \\ &\quad + b_5\, LENDING_{it} + b_6\, SG_{it} + b_7\, OPEN_{it} * FD_{it} \\ &\quad + b_8\, TREMIT_{it} * FD_{it} + b_9\, TREMIT_{it} * OPEN_{it} \\ &\quad + b_{10}\, OPEN_{it} * TREMIT_{it} * FD_{it} \\ &\quad + b_{11}\, COUNTRY_i + b_{12}\, TIME_t + e_{it} \end{aligned}$$

To obtain parameter estimates that apply to long-run trends and minimize the effects of various business cycles occurring worldwide as well as within individual countries, all annual data were merged into averages of separate five-year intervals, except for the period 2000 to 2003 which only covers four calendar years.

Because the main concern of this section is to determine whether remittance savings contribute to long-run growth through changes in domestic investment, it is necessary to add dynamics to the investment model through the inclusion of a lagged dependent variable. Here, coefficient estimates of the other independent variables are interpreted to be the effect of new information (Greene, 2003, pp. 307-308). The estimates indicate what impact an explanatory variable has on the investment-to-GDP ratio given the past behaviour of the dependent and independent variables.

[28] Interaction variables based on web article by Preacher (2004). Please see http://www.unc.edu/~preacher/interact/interactions.htm

Meanwhile, interaction terms are included to account for the possibility that effects of remittance savings on investment will vary depending on a country's degree of openness and level of financial development. A three-way interaction term between transitory remittances, openness and financial development is also incorporated in the model to control for interrelationships between these three variables. In particular, the likelihood that remittances may have little effect on investment for very open and financially developed economies.[29]

However, as with all models containing a lagged dependent variable, the question of endogeneity arises. This suspicion is strengthened by the possibility that both transitory remittances and financial development may also be correlated with unobserved factors that affect domestic investment. On the one hand, transitory remittances being the unexpected change in remittance flows may respond to economic and political shocks that affect domestic investment such as financial or currency crises and armed conflict. Likewise, the inclusion of a financial development variable raises the issue of reverse causality: is domestic investment increasing because of a high level of financial development or does a country have a mature financial sector because it enjoys a healthy boost of investments? Thus, the investment model is saddled with seven endogenous explanatory variables out of the total 10 right-hand side variables excluding country and time effects.

[29] Please see section 2.2 for a more detailed discussion on the interrelationships between economic openness, financial development, remittances and domestic investment.

Because it is difficult to find at least one external instrument for each of the endogenous independent variables, this study adopts the technique pioneered by Arellano and Bover (1995) for regression models with lagged dependent variables. Arellano and Bover recommend that equations in levels that include a predetermined variable can best be instrumented by higher order differences of the endogenous as well as remaining exogenous variables. By differencing out the instruments, this ensures that they are uncorrelated with the individual effects of the level model (Arellano and Bover, 1995, p. 48). For this paper, the instruments are selected as follows: the third difference of lagged domestic investment variable; the second differences of transitory remittances and the financial development variables; the interactions between the first difference of openness and lending rates, and government saving and lending; the first difference of government saving; the interaction between the second differences of transitory remittances and openness; and the three-way interaction between the second differences of transitory remittances, openness and the government saving and lending rates interaction term.[30]

Since the endogeneity problem already rules out the possibility of unbiased estimators, an attempt is made to obtain consistent estimates of the determinants of investment model using Two-Stage Least Squares (TSLS) regression.[31] However, the use of higher order lags combined with the collapse of annual data into five-year averages means a substantial loss of observations. In fact, the sample shrank to almost half its original size from 137 observations to only 70. Because of this, OLS estimates are also obtained to compare the performance of the two approaches and decide what tradeoffs

[30] Second differences refer to the subtraction of (Xt-1 – Xt-2) while third differences refer to (Xt-2 – Xt-3).
[31] Because there are seven endogenous variables involved, this could be more accurately referred to as seven-stage least squares.

between variance and bias should be made. The results of both sets of regressions are outlined in table 6.[32]

Table 6: Ordinary and Two-Stage Least Squares Estimations of the Determinants of Investment Model

Variables	OLS		TSLS	
	BANKCRED	**QMONEY**	**BANKCRED**	**QMONEY**
Transitory Remittance Income as a Share of GDP (TREMIT)	-0.5607052 (1.448797)	-0.2159011 (0.9666632)	-7.144737 (19.36105)	-5.615794 (10.34459)
Total Trade as a Share of GDP (OPEN)	0.1124117** (0.0540708)	0.1364028* (0.0766672)	-0.8349745 (2.219472)	-0.9111108 (1.903467)
Interaction of Transitory Remittances and Openness (TREMIT*OPEN)	1.218181 (1.137893)	1.575528 (1.00668)	5.413679 (14.83629)	4.459253 (17.39426)
Financial Development (FD)	-0.0179275 (0.0543352)	0.0479148 (0.1183334)	0.0601695 (0.6996236)	-1.093434 (1.645178)
Interaction of Transitory Remittances and Financial Development (TREMIT*FD)	1.700716 (1.999866)	0.669792 2.025126	8.789872 (40.04708)	9.332747 34.23903
Interaction of Openness and Financial Development (OPEN*FD)	-0.0459285 (0.051493)	-0.1494481 (0.1086351)	0.3433358 1.58275	1.124601 (2.005825)
Interaction of Openness, Financial Development and Transitory Remittances (OPEN*FD*TREMIT)	-2.327423 (1.664912)	-2.783924 (2.155499)	0.0944196 (46.48452)	-5.182613 (86.91402)
Lagged Domestic Investment-to-GDP Ratio (GDI t-1)	0.2753547** (0.1151495)	0.2913498 (0.13334)	1.477989 (4.466238)	-0.4322082 (2.086748)
Domestic Lending Rates (LENDING)	0.0210165 (0.0129975)	0.0241377 (0.0168314)	-0.1479966 (0.9545702)	0.2115126 (0.9344955)
Current Fiscal Balance as a Share of GDP (SG)	0.1565295*** (0.0467617)	0.1487365 (0.0391805)	1.001241 (1.103014)	1.110235 (0.8443032)
INTERCEPT	0.1113742*** (0.034264)	0.0967953 (0.0396691)	1.30417 (3.063576)	1.592386 (2.393721)
Joint Significance P-Values for TREMIT (Ho: $b_2 = 0$; $b_8 = 0$; $b_9 = 0$; $b_{10} = 0$)	0.0001	0.0000	0.4315	0.7205
R- Squared	88.04%	88.75%	37.58%	77.4%
Number of Observations	137	137	70	70

[32] A complete table of investment estimation results including first stage regressions for TSLS can be found in Appendix D.

Although transitory remittance coefficients are jointly significant for OLS and they may still be interpreted as long as the direction of their bias is known, this is difficult in this case because this would require the assumption that TREMIT and its interactions are uncorrelated with all the other regressors. Thus, marginal effect of transitory remittances cannot be accurately discerned.

Despite its shortcomings, TSLS remains the better alternative since there are feasible solutions to its problems. For one, the use of a larger data set can address micronumerosity issues such as multicollinearity from interaction terms as well as the lack of total sample variation among regressors (Wooldridge, 2003, pp. 97-99). Furthermore, continued improvements in depth and variety of cross-country data may allow for the replacement of exogenous but not-so-relevant internal instruments with external instruments that are based more on theory and correct economic reasoning.

In an ideal world where all desired data are available, interest rates from microfinance loans using remittances or yields from bonds backed by future remittance receivables would make exogenous and valid external instruments.

A third option that may be explored is instrumental variable estimation using generalized method of moments (GMM). While this form of instrumental variable estimation is relatively new and not yet as popular as TSLS, it is effective in conserving degrees of freedom when using Arellano and Bover's higher-order difference instruments (Greene, 2003, p. 308).

5. Conclusion

"What are the conditions under which remittances improve the local economy? How is the internal marshaling of resources related to the successful absorption and recycling of this external income in the local economy? These depend on such factors as local economic organization, cultural and physical constraints, and who controls the spending of remittances."

- Richard C. Jones,
"Introduction: The Renewed Role of Remittances in the New World Order," 1998[33]

This project set out to determine whether remittances contribute to the growth of developing countries by identifying consumption and investment behaviour patterns among remittance recipients. This paper finds that recipients allocate about 60-77% of their permanent remittance income for consumption while the remaining 20-40% is saved along with transitory income.

At the very least, these results debunk the argument that remittances are only used for current consumption. The high marginal saving rates from remittances may also indicate productive consumption since spending on durables and human capital investments require a certain amount of savings.

[33] Journal article published in Economic Geography, Volume 74, Issue 1, January 1998, p. 4.

Nonetheless, the apparent disconnect between remittance savings and domestic investment indicates the need for specific policy interventions given a recipient country's degree of openness and level of financial development.

Fairly open economies that have average to high financial development may benefit more from remittance securitization because they not only have the architecture to withstand fluctuations in international capital markets where most remittance bonds are sold, but they also have financial sectors that are large enough to meet demands for credit at home. On the other hand, microfinancing programs may contribute more to the growth of open but les financially developed recipient countries because their grassroots nature provides an easy way for underground financial arrangements involving remittances to be incorporated into the mainstream economy.

This paper has only taken a first step in still largely uncharted territory. Whereas before the relationship between remittances and consumption and investment were determined on a per country basis, the availability of new data and estimation techniques make it increasingly possible to look at the effects of remittances on a wider scale.

In the end, remittances --- regardless of the individual motives --- are gifts to a developing country. The continued research on the economic effects of remittances will help recipient countries identify more productive uses of these gifts and allow them to reap more enduring benefits.

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Appendices

Appendix A

Per Country Mean Values of Selected Variables

Country	Permanent Remittances-to-GDP Ratio (PREMIT)*	Transitory Remittances-to-GDP Ratio (TREMIT)*	Total Trade-to-GDP Ratio (OPEN)	Domestic Bank Lending-to-GDP Ratio (BANKCRED)	Total Deposits-to-GDP Ratio (QMONEY)
Bangladesh	0.0276047	0.0032425	0.2279116	0.2457459	0.1950282
Benin	0.0413935	0.0078514	0.5886537	0.1761446	0.1625141
Bolivia	0.0037383	0.0009679	0.4368491	0.3937374	0.2191562
Botswana	0.0391837	0.0071594	1.122378	-0.3000709	0.23913
Brazil	0.0016477	0.0005898	0.2228729	0.6791732	0.2797601
Colombia	0.0104269	0.0029423	0.3477622	0.3152683	0.1781246
Costa Rica	0.004197	0.0010187	0.7611556	0.3528398	0.3234218
Cyprus	0.0348007	0.0075475	1.070698	1.034219	0.7090933
Dominican Republic	0.0465076	0.0052267	0.6704006	0.3754392	0.2000507
Egypt	0.0653746	0.0123147	0.4595437	0.9540209	0.5537436
El Salvador	0.0662752	0.0091699	0.5622836	0.4149445	0.064938
Ghana	0.0025096	0.0006536	0.4634587	0.2444857	0.1248215
Guatemala	0.0146274	0.0047457	0.4191267	0.1998241	0.1999187
Honduras	0.0057115	0.0027203	0.7467365	0.3676216	0.2576737
India	0.0151865	0.0024643	0.197853	0.445868	0.349286
Israel	0.0105603	0.0029658	0.787813	1.145029	0.7242492
Jamaica	0.0592391	0.0103502	0.9673097	0.467466	0.3485203
Jordan	0.1912386	0.0257132	1.182992	0.8084877	0.7500969
Kenya	0.0284408	0.0057635	0.5980689	0.4629804	0.2907163
Republic of Korea	0.0024257	0.0004803	0.6916838	0.6170548	0.4019698
Lesotho	0.5726078	0.0716302	1.27023	0.156164	0.3080228
Malaysia	0.0057401	0.0012882	1.449043	0.9162	0.6142796
Mali	0.0376926	0.0066011	0.5224658	0.2339663	0.1149473
Mexico	0.0100062	0.0012349	0.4338774	0.4226862	0.249261
Morocco	0.0650228	0.0083725	0.5597498	0.5621146	0.3818018
Nepal	0.0222908	0.0066633	0.412454	0.2807878	0.2163402
Nigeria	0.0121288	0.0043458	0.7221806	0.25492	0.2735243
Pakistan	0.0463922	0.0080819	0.3400576	0.4871818	0.2832178
Paraguay	0.0154818	0.0029512	0.6306753	0.2213923	0.201916
Philippines	0.0442565	0.0075417	0.6751188	0.4393567	0.3340134
Senegal	0.0228864	0.0046667	0.7040118	0.3496444	0.1831816
South Africa	0.0016256	0.0005105	0.5102988	1.131955	0.527238
Sri Lanka	0.0492729	0.0043899	0.6979718	0.3863302	0.2412241
Swaziland	0.078299	0.0111862	1.641026	0.088912	0.2744228
Syria	0.0371908	0.0140455	0.5365105	0.5616071	0.7120085
Thailand	0.0126535	0.0014888	0.7543485	0.9436915	0.6045327
Togo	0.0166223	0.0057817	0.9244105	0.2449189	0.0002224
Trinidad and Tobago	0.0024363	0.0007625	0.8380352	0.3872914	0.3853539
Tunisia	0.0406187	0.0040873	0.8293785	0.5766215	0.3624887
Turkey	0.0224976	0.0043889	0.358598	0.3888175	2.55e-07

*** Note: Uses absolute values in mean calculations.**

Appendix B

Formulas for Calculating Permanent and Transitory Components of Income:

1) ACTUAL CHANGE in Remittances
   = Total Remittances in Period t – Total Remittances in Period t-1

2) EXPECTED CHANGE in Remittances
   = (Average Remittance Income from 1975 to 2003) *
   (Average Annual Growth Rate of Remittances from 1975 to 2003 in Proportion Form)

3) UNEXPECTED CHANGE in Remittances
   = ACTUAL CHANGE – EXPECTED CHANGE
   = TRANSITORY REMITTANCE INCOME

4) PERMANENT REMITTANCE INCOME
   = TOTAL REMITTANCES – UNEXPECTED CHANGE

Appendix C

Raw Regression Output for Modified Consumption Function:

A. Baseline Ordinary Least Squares Regressions

1. Model (A)

```
. xi: reg consume dominc i.country i.year, robust cluster(country_1);
i.country       _Icountry_1-40      (_Icountry_1 for cou~y==Bangladesh omitted)
i.year          _Iyear_1975-2003    (naturally coded; _Iyear_1975 omitted)

Regression with robust standard errors                Number of obs =    1102
                                                      F( 28,     38) =       .
                                                      Prob > F      =       .
                                                      R-squared     =  0.5943
Number of clusters (country_1) = 39                   Root MSE      =  .10026
------------------------------------------------------------------------------
             |               Robust
     consume |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      dominc |   .0201333   .0285734     0.70   0.485    -.0377105    .0779771
 _Icountry_2 |  -.0127224   .0003766   -33.78   0.000    -.0134848     -.01196
 _Icountry_3 |  -.1338173   .0041947   -31.90   0.000     -.142309    -.1253256
 _Icountry_4 |  -.4138569   .0030874  -134.05   0.000     -.420107    -.4076068
 _Icountry_5 |  -.2143924   .0090567   -23.67   0.000    -.2327267    -.1960581
 _Icountry_6 |  -.0701141   .0039296   -17.84   0.000    -.0780693     -.062159
 _Icountry_7 |  -.2534737   .0003535  -717.09   0.000    -.2541893    -.2527582
 _Icountry_8 |  -.1845028   .0058092   -31.76   0.000    -.1962629    -.1727427
 _Icountry_9 |  -.0779508   .0021343   -36.52   0.000    -.0822715    -.0736301
_Icountry_10 |  -.2448553   .0006609  -370.46   0.000    -.2461933    -.2435173
_Icountry_11 |  -.0548218   .0037858   -14.48   0.000    -.0624859    -.0471578
_Icountry_12 |  -.2290632   .0005548  -412.84   0.000    -.2301865     -.22794
_Icountry_13 |  -.0024518   .0024924    -0.98   0.331    -.0074973     .0025938
_Icountry_14 |  -.1480247    .001666   -88.85   0.000    -.1513975     -.144652
_Icountry_15 |  -.1285454   .0000631 -2036.58   0.000    -.1286732    -.1284176
_Icountry_16 |  (dropped)
_Icountry_17 |   -.268791   .0014378  -186.95   0.000    -.2717016    -.2658803
_Icountry_18 |  -.0716405   .0026922   -26.61   0.000    -.0770905    -.0661905
_Icountry_19 |  -.1829755   .0032737   -55.89   0.000    -.1896027    -.1763483
_Icountry_20 |   -.269862   .0064576   -41.79   0.000    -.2829347    -.2567892
_Icountry_21 |   .2275955   .0047474    47.94   0.000     .2179849     .2372061
_Icountry_22 |  -.3757969   .0046355   -81.07   0.000    -.3851809    -.3664129
_Icountry_23 |  -.0175377   .0034095    -5.14   0.000      -.02444    -.0106355
_Icountry_24 |   -.162163   .0005937  -273.12   0.000     -.163365    -.1609611
_Icountry_25 |  -.1630831   .0025005   -65.22   0.000    -.1681451     -.158021
_Icountry_26 |   .0060024   .0014114     4.25   0.000     .0031452     .0088597
_Icountry_27 |  -.2200529   .0234495    -9.38   0.000    -.2675239    -.1725819
_Icountry_28 |  -.1150625   .0021069   -54.61   0.000    -.1193276    -.1107973
_Icountry_29 |  -.1344715   .0019188   -70.08   0.000    -.1383558    -.1305871
_Icountry_30 |   -.149451   .0046407   -32.20   0.000    -.1588456    -.1400564
_Icountry_31 |  -.0431515   .0007797   -55.35   0.000    -.0447299    -.0415731
_Icountry_32 |  -.2299157   .0010793  -213.01   0.000    -.2321007    -.2277307
_Icountry_33 |  -.0863892   .0008375  -103.15   0.000    -.0880847    -.0846938
_Icountry_34 |  -.2118914   .0025448   -83.26   0.000    -.2170431    -.2067397
_Icountry_35 |  -.2464717   .0416325    -5.92   0.000    -.3307522    -.1621911
_Icountry_36 |  -.2393944    .005643   -42.42   0.000    -.2508181    -.2279708
_Icountry_37 |  -.1117177   .0003658  -305.42   0.000    -.1124582    -.1109772
_Icountry_38 |  -.2571497   .0006374  -403.44   0.000     -.25844    -.2558593
_Icountry_39 |  -.2341733   .0019756  -118.53   0.000    -.2381727    -.2301739
```

consume	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
_Icountry_40	-.1947631	.0001293	-1506.81	0.000	-.1950248	-.1945014
_Iyear_1976	-.0115912	.0155862	-0.74	0.462	-.0431438	.0199615
_Iyear_1977	-.0262618	.0249417	-1.05	0.299	-.0767536	.0242299
_Iyear_1978	-.0312408	.0211719	-1.48	0.148	-.0741011	.0116195
_Iyear_1979	-.0128721	.024132	-0.53	0.597	-.0617247	.0359805
_Iyear_1980	-.0068279	.0251559	-0.27	0.788	-.0577533	.0440976
_Iyear_1981	.0119394	.0302806	0.39	0.696	-.0493604	.0732392
_Iyear_1982	.0100024	.0299682	0.33	0.740	-.0506651	.0706698
_Iyear_1983	.0121184	.0342542	0.35	0.725	-.0572256	.0814624
_Iyear_1984	-.0001681	.0319293	-0.01	0.996	-.0648055	.0644693
_Iyear_1985	-.0007728	.032395	-0.02	0.981	-.066353	.0648075
_Iyear_1986	-.0139497	.0337115	-0.41	0.681	-.082195	.0542957
_Iyear_1987	-.0216083	.0344602	-0.63	0.534	-.0913693	.0481528
_Iyear_1988	-.0227073	.0352872	-0.64	0.524	-.0941424	.0487279
_Iyear_1989	-.0105584	.0331241	-0.32	0.752	-.0776146	.0564978
_Iyear_1990	-.0090943	.0295305	-0.31	0.760	-.0688757	.0506871
_Iyear_1991	-.0044529	.0297815	-0.15	0.882	-.0647423	.0558365
_Iyear_1992	-.0004616	.0302016	-0.02	0.988	-.0616016	.0606785
_Iyear_1993	-.0044152	.0308719	-0.14	0.887	-.0669122	.0580818
_Iyear_1994	-.0307039	.0302435	-1.02	0.316	-.0919286	.0305208
_Iyear_1995	-.0216673	.0309011	-0.70	0.487	-.0842233	.0408887
_Iyear_1996	-.0252635	.0318808	-0.79	0.433	-.0898029	.0392759
_Iyear_1997	-.0254603	.0299516	-0.85	0.401	-.0860941	.0351735
_Iyear_1998	.0023407	.0324207	0.07	0.943	-.0632916	.067973
_Iyear_1999	.0057393	.0347602	0.17	0.870	-.0646291	.0761076
_Iyear_2000	.0067891	.0326618	0.21	0.836	-.0593312	.0729093
_Iyear_2001	.0051858	.0333329	0.16	0.877	-.062293	.0726646
_Iyear_2002	.0043031	.0342257	0.13	0.901	-.0649832	.0735895
_Iyear_2003	.03338	.0379704	0.88	0.385	-.0434871	.1102471
_cons	.8256399	.0404333	20.42	0.000	.743787	.9074928

2. Model (B)

```
. xi: reg consume remit dominc i.country i.year, robust cluster(country_1);
i.country         _Icountry_1-40      (_Icountry_1 for cou~y==Bangladesh omitted)
i.year            _Iyear_1975-2003    (naturally coded; _Iyear_1975 omitted)

Regression with robust standard errors                Number of obs =    1100
                                                      F( 29,    38) =       .
                                                      Prob > F      =       .
                                                      R-squared     =  0.6365
Number of clusters (country_1) = 39                   Root MSE      =  .09497
```

consume	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
remit	.817406	.0904696	9.04	0.000	.63426	1.000552
dominc	.0189376	.0277107	0.68	0.498	-.0371598	.0750349
_Icountry_2	-.0221952	.0012209	-18.18	0.000	-.0246667	-.0197237
_Icountry_3	-.1126279	.0048066	-23.43	0.000	-.1223584	-.1028974
_Icountry_4	-.4238319	.0035192	-120.43	0.000	-.4309561	-.4167077
_Icountry_5	-.1922039	.0082832	-23.20	0.000	-.2089723	-.1754354
_Icountry_6	-.0559247	.0045804	-12.21	0.000	-.0651972	-.0466521
_Icountry_7	-.2338552	.0023096	-101.26	0.000	-.2385307	-.2291798
_Icountry_8	-.2018585	.0054657	-36.93	0.000	-.2129233	-.1907937
_Icountry_9	-.0938752	.0022172	-42.34	0.000	-.0983637	-.0893867
_Icountry_10	-.2741951	.0035155	-78.00	0.000	-.2813118	-.2670784
_Icountry_11	-.0726314	.0047227	-15.38	0.000	-.0821921	-.0630708

consume	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
_Icountry_12	-.2080922	.0021985	-94.65	0.000	-.2125429	-.2036416
_Icountry_13	.0064165	.0028961	2.22	0.033	.0005537	.0122793
_Icountry_14	-.1292446	.002158	-59.89	0.000	-.1336133	-.1248759
_Icountry_15	-.1181489	.0011315	-104.42	0.000	-.1204395	-.1158584
_Icountry_16	(dropped)					
_Icountry_17	-.2984406	.0031016	-96.22	0.000	-.3047195	-.2921616
_Icountry_18	-.206682	.0159018	-13.00	0.000	-.2388735	-.1744906
_Icountry_19	-.1836944	.0031974	-57.45	0.000	-.1901673	-.1772216
_Icountry_20	-.2482305	.0074121	-33.49	0.000	-.2632356	-.2332255
_Icountry_21	-.1908539	.0480615	-3.97	0.000	-.2881492	-.0935585
_Icountry_22	-.3568863	.0055562	-64.23	0.000	-.3681343	-.3456383
_Icountry_23	-.0251974	.0036753	-6.86	0.000	-.0326376	-.0177571
_Icountry_24	-.1474514	.0019011	-77.56	0.000	-.1513	-.1436028
_Icountry_25	-.1939088	.0034526	-56.16	0.000	-.2008983	-.1869193
_Icountry_26	.0085059	.0012994	6.55	0.000	.0058754	.0111364
_Icountry_27	-.2063148	.0232623	-8.87	0.000	-.2534069	-.1592228
_Icountry_28	-.1302905	.0030537	-42.67	0.000	-.1364723	-.1241086
_Icountry_29	-.123859	.0025111	-49.33	0.000	-.1289424	-.1187756
_Icountry_30	-.1631653	.0042291	-38.58	0.000	-.1717267	-.1546039
_Icountry_31	-.0401686	.0009205	-43.64	0.000	-.042032	-.0383052
_Icountry_32	-.2079937	.0029483	-70.55	0.000	-.2139621	-.2020252
_Icountry_33	-.1038818	.0023381	-44.43	0.000	-.108615	-.0991486
_Icountry_34	-.2531879	.0057603	-43.95	0.000	-.264849	-.2415269
_Icountry_35	-.2520712	.0401048	-6.29	0.000	-.3332591	-.1708832
_Icountry_36	-.2259432	.006129	-36.86	0.000	-.2383507	-.2135357
_Icountry_37	-.1045623	.0009706	-107.73	0.000	-.1065273	-.1025974
_Icountry_38	-.2361	.0026039	-90.67	0.000	-.2413713	-.2308288
_Icountry_39	-.2444401	.0018659	-131.00	0.000	-.2482174	-.2406627
_Icountry_40	-.1893518	.000569	-332.80	0.000	-.1905036	-.1882
_Iyear_1976	-.0200074	.0155226	-1.29	0.205	-.0514312	.0114164
_Iyear_1977	-.0450556	.0224706	-2.01	0.052	-.090545	.0004338
_Iyear_1978	-.048751	.0204252	-2.39	0.022	-.0900996	-.0074024
_Iyear_1979	-.032447	.0228259	-1.42	0.163	-.0786557	.0137617
_Iyear_1980	-.0271955	.0236133	-1.15	0.257	-.0749981	.0206071
_Iyear_1981	-.0102244	.0282747	-0.36	0.720	-.0674636	.0470148
_Iyear_1982	-.0159451	.0266579	-0.60	0.553	-.0699111	.0380209
_Iyear_1983	-.0154771	.0294897	-0.52	0.603	-.0751759	.0442216
_Iyear_1984	-.0257759	.0273291	-0.94	0.352	-.0811007	.029549
_Iyear_1985	-.0245602	.0285226	-0.86	0.395	-.0823012	.0331807
_Iyear_1986	-.0364279	.0306563	-1.19	0.242	-.0984884	.0256326
_Iyear_1987	-.0442764	.0313097	-1.41	0.165	-.1076595	.0191068
_Iyear_1988	-.0444679	.0314948	-1.41	0.166	-.1082257	.0192899
_Iyear_1989	-.0317591	.0295386	-1.08	0.289	-.0915569	.0280387
_Iyear_1990	-.0306227	.0260603	-1.18	0.247	-.083379	.0221335
_Iyear_1991	-.0252481	.0268133	-0.94	0.352	-.0795288	.0290325
_Iyear_1992	-.0235545	.0273961	-0.86	0.395	-.0790149	.031906
_Iyear_1993	-.027049	.0290429	-0.93	0.358	-.0858433	.0317453
_Iyear_1994	-.0500812	.0287199	-1.74	0.089	-.1082216	.0080593
_Iyear_1995	-.0435075	.0295462	-1.47	0.149	-.1033206	.0163057
_Iyear_1996	-.046342	.0306807	-1.51	0.139	-.1084519	.0157679
_Iyear_1997	-.0472603	.0293238	-1.61	0.115	-.1066232	.0121026
_Iyear_1998	-.0177856	.0329174	-0.54	0.592	-.0844234	.0488521
_Iyear_1999	-.0144104	.0356059	-0.40	0.688	-.0864908	.0576701
_Iyear_2000	-.015098	.0331375	-0.46	0.651	-.0821814	.0519854
_Iyear_2001	-.0188683	.0330051	-0.57	0.571	-.0856837	.0479472
_Iyear_2002	-.0229147	.0337256	-0.68	0.501	-.0911887	.0453592
_Iyear_2003	.002241	.0386494	0.06	0.954	-.0760007	.0804827
_cons	.8248583	.0382701	21.55	0.000	.7473845	.902332

```
. test remit=dominc;

 ( 1)  remit - dominc = 0

       F(  1,    38) =   59.76
            Prob > F =    0.0000
```

3. Model (C)

```
. xi: reg consume premit pdominc i.country i.year, robust cluster(country_1);
i.country   _Icountry_1-40  (_Icountry_1 for cou~y==Bangladesh omitted)
i.year      _Iyear_1975-2003    (naturally coded; _Iyear_1975 omitted)

Regression with robust standard errors                Number of obs =    1061
                                                      F( 28,    38) =       .
                                                      Prob > F      =       .
                                                      R-squared     =  0.6477
Number of clusters (country_1) = 39                   Root MSE      =  .09306
------------------------------------------------------------------------------
             |               Robust
     consume |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      premit |   .7764358   .0862757     9.00   0.000     .6017797    .9510918
     pdominc |    .027902   .0260889     1.07   0.292    -.0249122    .0807162
  _Icountry_2 |  -.0022082   .0012789    -1.73   0.092    -.0047971    .0003807
  _Icountry_3 |  -.0974244   .0042379   -22.99   0.000    -.1060037   -.0888452
  _Icountry_4 |  -.4117826   .0019973  -206.17   0.000    -.4158259   -.4077394
  _Icountry_5 |   -.176382    .007669   -23.00   0.000    -.1919071   -.1608569
  _Icountry_6 |  -.0401758   .0038104   -10.54   0.000    -.0478896   -.0324621
  _Icountry_7 |  -.2224367   .0020433  -108.86   0.000    -.2265732   -.2183002
  _Icountry_8 |  -.1873615   .0048442   -38.68   0.000     -.197168    -.177555
  _Icountry_9 |  -.0761092    .002312   -32.92   0.000    -.0807896   -.0714289
 _Icountry_10 |  -.2536785    .003287   -77.18   0.000    -.2603327   -.2470243
 _Icountry_11 |  -.0423612   .0039845   -10.63   0.000    -.0504273   -.0342951
 _Icountry_12 |   -.187915   .0026739   -70.28   0.000     -.193328    -.182502
 _Icountry_13 |   .0269943   .0020214    13.35   0.000     .0229021    .0310865
 _Icountry_14 |  -.1139043   .0023476   -48.52   0.000    -.1186568   -.1091518
 _Icountry_15 |  -.1004192   .0010679   -94.03   0.000    -.1025811   -.0982574
 _Icountry_16 |  (dropped)
 _Icountry_17 |  -.2758751   .0026491  -104.14   0.000    -.2812379   -.2705122
 _Icountry_18 |  -.1808176   .0148999   -12.14   0.000    -.2109808   -.1506544
 _Icountry_19 |  -.1644973    .003347   -49.15   0.000     -.171273   -.1577216
 _Icountry_20 |  -.2402903   .0080836   -29.73   0.000    -.2566547   -.2239259
 _Icountry_21 |  -.1672753   .0480829    -3.48   0.001    -.2646139   -.0699366
 _Icountry_22 |  -.3446222   .0055879   -61.67   0.000    -.3559344   -.3333101
 _Icountry_23 |  -.0038203    .003616    -1.06   0.297    -.0111404    .0034998
 _Icountry_24 |   -.129081   .0016508   -78.19   0.000    -.1324229   -.1257392
 _Icountry_25 |  -.1751958   .0033478   -52.33   0.000     -.181973   -.1684185
 _Icountry_26 |   .0224982   .0013826    16.27   0.000     .0196993     .025297
 _Icountry_27 |   -.206237   .0229252    -9.00   0.000    -.2526467   -.1598274
 _Icountry_28 |  -.1105935   .0029464   -37.54   0.000    -.1165581   -.1046289
 _Icountry_29 |  -.1152835   .0020893   -55.18   0.000    -.1195129    -.111054
 _Icountry_30 |  -.1432218   .0035474   -40.37   0.000    -.1504031   -.1360405
 _Icountry_31 |  -.0214754   .0008087   -26.55   0.000    -.0231126   -.0198383
 _Icountry_32 |  -.1923276   .0023323   -82.46   0.000    -.1970491    -.187606
 _Icountry_33 |  -.0831417   .0019761   -42.07   0.000     -.087142   -.0791413
 _Icountry_34 |  -.2371684    .005535   -42.85   0.000    -.2483734   -.2259635
 _Icountry_35 |  -.2529691   .0358517    -7.06   0.000    -.3255471   -.1803912
 _Icountry_36 |  -.2172282   .0062922   -34.52   0.000    -.2299661   -.2044903
 _Icountry_37 |  -.0828754    .000987   -83.97   0.000    -.0848735   -.0808774
 _Icountry_38 |  -.2143194    .002179   -98.36   0.000    -.2187304   -.2099083
 _Icountry_39 |  -.2274667   .0016627  -136.81   0.000    -.2308326   -.2241007
 _Icountry_40 |  -.1724386   .0004499  -383.28   0.000    -.1733494   -.1715278
```

consume	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
_Iyear_1976	.0192084	.0134795	1.43	0.162	-.0080794	.0464963
_Iyear_1977	(dropped)					
_Iyear_1978	-.0082628	.0111753	-0.74	0.464	-.030886	.0143604
_Iyear_1979	.0097967	.0139206	0.70	0.486	-.0183841	.0379775
_Iyear_1980	.0171649	.0166611	1.03	0.309	-.0165636	.0508935
_Iyear_1981	.0253998	.0190683	1.33	0.191	-.0132019	.0640015
_Iyear_1982	.0194028	.0161067	1.20	0.236	-.0132034	.0520091
_Iyear_1983	.0207201	.0166624	1.24	0.221	-.0130112	.0544515
_Iyear_1984	.0026237	.0170652	0.15	0.879	-.0319231	.0371705
_Iyear_1985	-.0009083	.0214966	-0.04	0.967	-.0444258	.0426093
_Iyear_1986	.0004907	.022363	0.02	0.983	-.0447809	.0457623
_Iyear_1987	-.0010282	.0260489	-0.04	0.969	-.0537614	.051705
_Iyear_1988	-.0059964	.0247596	-0.24	0.810	-.0561196	.0441268
_Iyear_1989	.0028884	.0226587	0.13	0.899	-.0429817	.0487585
_Iyear_1990	.0105537	.0199655	0.53	0.600	-.0298643	.0509718
_Iyear_1991	.01082	.0221878	0.49	0.629	-.0340969	.0557369
_Iyear_1992	.0191693	.0239829	0.80	0.429	-.0293816	.0677202
_Iyear_1993	.0085923	.0245652	0.35	0.728	-.0411373	.0583218
_Iyear_1994	-.0155691	.0241144	-0.65	0.522	-.0643863	.033248
_Iyear_1995	.0008267	.026149	0.03	0.975	-.0521092	.0537625
_Iyear_1996	-.0079021	.0276942	-0.29	0.777	-.0639662	.048162
_Iyear_1997	-.0098234	.0271183	-0.36	0.719	-.0647215	.0450748
_Iyear_1998	.0125537	.0263662	0.48	0.637	-.0408219	.0659293
_Iyear_1999	.0191621	.028746	0.67	0.509	-.039031	.0773553
_Iyear_2000	.0174172	.023967	0.73	0.472	-.0311014	.0659358
_Iyear_2001	.0168315	.0259835	0.65	0.521	-.0357694	.0694324
_Iyear_2002	.0184203	.0281089	0.66	0.516	-.0384833	.0753238
_Iyear_2003	.0381829	.0308407	1.24	0.223	-.0242509	.1006167
_cons	.7632817	.0347667	21.95	0.000	.6929002	.8336632

```
. test premit=pdominc;

 ( 1)  premit - pdominc = 0

       F(  1,    38) =   60.78
            Prob > F =    0.0000
```

4. Model (D)

```
. xi: reg consume premit pdominc reali i.country i.year, robust
cluster(country_1);
i.country     _Icountry_1-40      (_Icountry_1 for cou~y==Bangladesh omitted)
i.year        _Iyear_1975-2003    (naturally coded; _Iyear_1975 omitted)

Regression with robust standard errors                Number of obs =     762
                                                      F( 29,    36) =       .
                                                      Prob > F      =       .
                                                      R-squared     =  0.7456
Number of clusters (country_1) = 37                   Root MSE      =  .08481
```

consume	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
premit	.652143	.0487908	13.37	0.000	.5531907	.7510952
pdominc	.0755321	.0226497	3.33	0.002	.0295965	.1214678
reali	.1945317	.0539415	3.61	0.001	.0851332	.3039301
_Icountry_2	.0037298	.0061462	0.61	0.548	-.0087353	.0161949
_Icountry_3	-.0994416	.0033406	-29.77	0.000	-.1062166	-.0926665

consume	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
_Icountry_4	-.4149362	.0043264	-95.91	0.000	-.4237105	-.4061619
_Icountry_5	-.2789674	.0264328	-10.55	0.000	-.3325756	-.2253592
_Icountry_6	-.1226801	.0069897	-17.55	0.000	-.1368559	-.1085043
_Icountry_7	-.2394425	.0032882	-72.82	0.000	-.2461112	-.2327738
_Icountry_8	-.1807292	.0057382	-31.50	0.000	-.1923667	-.1690916
_Icountry_9	-.1013058	.0112359	-9.02	0.000	-.1240932	-.0785184
_Icountry_10	-.2380998	.0031328	-76.00	0.000	-.2444534	-.2317462
_Icountry_11	-.0055358	.0062668	-0.88	0.383	-.0182455	.0071739
_Icountry_12	-.3473287	.0148801	-23.34	0.000	-.3775069	-.3171505
_Icountry_13	.0335814	.0023106	14.53	0.000	.0288952	.0382675
_Icountry_14	-.1152114	.0034102	-33.78	0.000	-.1221276	-.1082953
_Icountry_15	-.1046745	.0016506	-63.41	0.000	-.1080221	-.1013268
_Icountry_16	(dropped)					
_Icountry_17	-.2700827	.0017846	-151.34	0.000	-.2737021	-.2664633
_Icountry_18	-.1798423	.0132253	-13.60	0.000	-.2066644	-.1530202
_Icountry_19	-.1565349	.0031857	-49.14	0.000	-.1629958	-.1500739
_Icountry_20	-.2534607	.006302	-40.22	0.000	-.2662417	-.2406797
_Icountry_21	-.0912717	.0272065	-3.35	0.002	-.146449	-.0360944
_Icountry_22	-.3489967	.003515	-99.29	0.000	-.3561254	-.341868
_Icountry_23	.0232704	.0066172	3.52	0.001	.0098501	.0366906
_Icountry_24	-.1065848	.0102309	-10.42	0.000	-.127334	-.0858356
_Icountry_25	-.1726588	.004026	-42.89	0.000	-.1808239	-.1644936
_Icountry_26	.0199915	.0034787	5.75	0.000	.0129363	.0270466
_Icountry_27	-.2305385	.0152065	-15.16	0.000	-.2613788	-.1996982
_Icountry_28	(dropped)					
_Icountry_29	-.0879528	.0099165	-8.87	0.000	-.1080644	-.0678413
_Icountry_30	-.142114	.0028463	-49.93	0.000	-.1478865	-.1363414
_Icountry_31	-.0140879	.0067006	-2.10	0.043	-.0276773	-.0004985
_Icountry_32	-.1877844	.0025132	-74.72	0.000	-.1928814	-.1826875
_Icountry_33	-.0659304	.0033189	-19.87	0.000	-.0726614	-.0591995
_Icountry_34	-.2186787	.0047051	-46.48	0.000	-.228221	-.2091363
_Icountry_35	-.5337704	.0915994	-5.83	0.000	-.7195426	-.3479981
_Icountry_36	-.228806	.0049005	-46.69	0.000	-.2387447	-.2188674
_Icountry_37	-.1458176	.0071179	-20.49	0.000	-.1602533	-.1313819
_Icountry_38	-.2018978	.0027787	-72.66	0.000	-.2075333	-.1962624
_Icountry_39	-.225204	.0086601	-26.00	0.000	-.2427675	-.2076405
_Icountry_40	(dropped)					
_Iyear_1976	(dropped)					
_Iyear_1977	-.0510432	.0231615	-2.20	0.034	-.098017	-.0040694
_Iyear_1978	-.0567498	.0311995	-1.82	0.077	-.1200253	.0065257
_Iyear_1979	-.0264843	.035044	-0.76	0.455	-.097557	.0445883
_Iyear_1980	-.0085188	.0390829	-0.22	0.829	-.0877826	.0707449
_Iyear_1981	-.0184025	.0325125	-0.57	0.575	-.084341	.0475359
_Iyear_1982	-.0284245	.029741	-0.96	0.346	-.088742	.0318931
_Iyear_1983	-.0202949	.0283844	-0.72	0.479	-.077861	.0372713
_Iyear_1984	-.0388106	.0301221	-1.29	0.206	-.0999011	.0222799
_Iyear_1985	-.0365306	.032232	-1.13	0.265	-.1019002	.028839
_Iyear_1986	-.0231899	.0333033	-0.70	0.491	-.0907322	.0443524
_Iyear_1987	-.0243415	.0293365	-0.83	0.412	-.0838386	.0351556
_Iyear_1988	-.0296854	.0292956	-1.01	0.318	-.0890997	.0297288
_Iyear_1989	-.0463686	.0264955	-1.75	0.089	-.1001039	.0073668
_Iyear_1990	-.0419736	.0287745	-1.46	0.153	-.1003311	.0163839
_Iyear_1991	-.0433814	.0315558	-1.37	0.178	-.1073796	.0206168
_Iyear_1992	-.0316844	.0323579	-0.98	0.334	-.0973091	.0339404
_Iyear_1993	-.0547676	.0331237	-1.65	0.107	-.1219457	.0124105
_Iyear_1994	-.0687339	.035519	-1.94	0.061	-.1407698	.003302
_Iyear_1995	-.0551809	.035111	-1.57	0.125	-.1263893	.0160275
_Iyear_1996	-.0774866	.0392445	-1.97	0.056	-.1570782	.0021049
_Iyear_1997	-.0783643	.0380745	-2.06	0.047	-.1555829	-.0011457

consume	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
_Iyear_1998	-.053195	.0386217	-1.38	0.177	-.1315235	.0251335
_Iyear_1999	-.0490679	.0441955	-1.11	0.274	-.1387006	.0405648
_Iyear_2000	-.0351444	.038181	-0.92	0.363	-.1125791	.0422903
_Iyear_2001	-.0405205	.0394911	-1.03	0.312	-.1206122	.0395712
_Iyear_2002	-.0325963	.0395229	-0.82	0.415	-.1127524	.0475597
_Iyear_2003	-.0210003	.0405306	-0.52	0.608	-.1032002	.0611995
_cons	.7469865	.0480135	15.56	0.000	.6496106	.8443623

```
. test premit=pdominc;

 ( 1)  premit - pdominc = 0

       F(  1,    36) =  126.76
            Prob > F =    0.0000
```

B. Ordinary Least Squares with Interaction Effects

1. Ordinary Least Squares with General Interaction Terms

a. Using BANKCRED

```
. xi: reg consume premit pdominc prembank bankcred reali i.country i.year,
robust cluster(country_1);
i.country      _Icountry_1-40      (_Icountry_1 for cou~y==Bangladesh omitted)
i.year         _Iyear_1975-2003    (naturally coded; _Iyear_1975 omitted)

Regression with robust standard errors                Number of obs =     758
                                                      F( 31,    36) =       .
                                                      Prob > F      =       .
                                                      R-squared     =  0.7541
Number of clusters (country_1) = 37                   Root MSE      =  .08373
```

consume	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
premit	.216482	.1475112	1.47	0.151	-.0826847	.5156487
pdominc	.080752	.0237585	3.40	0.002	.0325675	.1289365
prembank	.8414922	.258752	3.25	0.002	.3167188	1.366266
bankcred	-.0783381	.0375396	-2.09	0.044	-.1544719	-.0022042
reali	.2042014	.0557349	3.66	0.001	.0911658	.3172369
_Icountry_2	.0116497	.0066693	1.75	0.089	-.0018762	.0251756
_Icountry_3	-.0934827	.0059863	-15.62	0.000	-.1056236	-.0813419
_Icountry_4	-.4536493	.0228861	-19.82	0.000	-.5000646	-.4072341
_Icountry_5	-.2701085	.025334	-10.66	0.000	-.3214881	-.2187289
_Icountry_6	-.1243743	.0074277	-16.74	0.000	-.1394383	-.1093103
_Icountry_7	-.2407695	.0037169	-64.78	0.000	-.2483078	-.2332311
_Icountry_8	-.1412535	.0280636	-5.03	0.000	-.1981691	-.084338
_Icountry_9	-.0992749	.0109603	-9.06	0.000	-.1215034	-.0770464
_Icountry_10	-.2110284	.0254114	-8.30	0.000	-.2625651	-.1594916
_Icountry_11	.0057046	.005938	0.96	0.343	-.0063381	.0177474
_Icountry_12	-.3484665	.0160208	-21.75	0.000	-.3809583	-.3159748
_Icountry_13	.0277325	.0034304	8.08	0.000	.0207755	.0346896
_Icountry_14	-.1129347	.0043487	-25.97	0.000	-.1217542	-.1041152
_Icountry_15	-.0935006	.0074947	-12.48	0.000	-.1087006	-.0783005
_Icountry_16	(dropped)					
_Icountry_17	-.2535908	.0076016	-33.36	0.000	-.2690076	-.2381741
_Icountry_18	-.1958749	.0211885	-9.24	0.000	-.2388472	-.1529027

consume	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
_Icountry_19	-.1434084	.0092674	-15.47	0.000	-.1622035	-.1246132
_Icountry_20	-.2297491	.0147638	-15.56	0.000	-.2596914	-.1998067
_Icountry_21	.0448746	.0544241	0.82	0.415	-.0655026	.1552518
_Icountry_22	-.3042867	.0258169	-11.79	0.000	-.3566458	-.2519276
_Icountry_23	.0308504	.0075816	4.07	0.000	.0154743	.0462265
_Icountry_24	-.1105701	.0098318	-11.25	0.000	-.1305099	-.0906303
_Icountry_25	-.1559058	.0121351	-12.85	0.000	-.180517	-.1312946
_Icountry_26	.0297946	.0048489	6.14	0.000	.0199605	.0396286
_Icountry_27	-.2347098	.016125	-14.56	0.000	-.2674128	-.2020068
_Icountry_28	(dropped)					
_Icountry_29	-.094165	.010952	-8.60	0.000	-.1163766	-.0719533
_Icountry_30	-.1331043	.0068799	-19.35	0.000	-.1470574	-.1191513
_Icountry_31	-.0002831	.0120782	-0.02	0.981	-.0247788	.0242125
_Icountry_32	-.125272	.0346062	-3.62	0.001	-.1954567	-.0550873
_Icountry_33	-.0552265	.0057272	-9.64	0.000	-.0668418	-.0436112
_Icountry_34	-.2071843	.0090686	-22.85	0.000	-.2255762	-.1887925
_Icountry_35	-.5622125	.0967021	-5.81	0.000	-.7583335	-.3660915
_Icountry_36	-.1843874	.025783	-7.15	0.000	-.2366778	-.132097
_Icountry_37	-.1436495	.007783	-18.46	0.000	-.1594342	-.1278648
_Icountry_38	-.1918302	.0072416	-26.49	0.000	-.2065167	-.1771436
_Icountry_39	-.2039817	.0177395	-11.50	0.000	-.2399591	-.1680044
_Icountry_40	(dropped)					
_Iyear_1976	(dropped)					
_Iyear_1977	-.047464	.0231353	-2.05	0.048	-.0943845	-.0005435
_Iyear_1978	-.0491632	.0319933	-1.54	0.133	-.1140487	.0157222
_Iyear_1979	-.0188185	.0360007	-0.52	0.604	-.0918313	.0541944
_Iyear_1980	.000792	.0409772	0.02	0.985	-.0823137	.0838976
_Iyear_1981	-.0085476	.0345016	-0.25	0.806	-.07852	.0614248
_Iyear_1982	-.0142627	.0327292	-0.44	0.666	-.0806405	.0521151
_Iyear_1983	-.0045905	.0312156	-0.15	0.884	-.0678986	.0587176
_Iyear_1984	-.0225437	.0332269	-0.68	0.502	-.0899309	.0448436
_Iyear_1985	-.0205474	.0343969	-0.60	0.554	-.0903076	.0492128
_Iyear_1986	-.0097676	.0362742	-0.27	0.789	-.083335	.0637999
_Iyear_1987	-.0114981	.0315473	-0.36	0.718	-.0754791	.0524828
_Iyear_1988	-.0161809	.0307975	-0.53	0.603	-.0786412	.0462794
_Iyear_1989	-.0324591	.0282767	-1.15	0.259	-.089807	.0248888
_Iyear_1990	-.0275802	.031895	-0.86	0.393	-.0922663	.0371059
_Iyear_1991	-.0278355	.0349479	-0.80	0.431	-.0987131	.043042
_Iyear_1992	-.0120112	.036312	-0.33	0.743	-.0856554	.061633
_Iyear_1993	-.0313416	.0372852	-0.84	0.406	-.1069595	.0442763
_Iyear_1994	-.0455819	.0406064	-1.12	0.269	-.1279355	.0367716
_Iyear_1995	-.0339133	.0403777	-0.84	0.407	-.1158031	.0479765
_Iyear_1996	-.0533731	.0451013	-1.18	0.244	-.1448427	.0380965
_Iyear_1997	-.0538925	.0441794	-1.22	0.230	-.1434925	.0357076
_Iyear_1998	-.0267232	.0435483	-0.61	0.543	-.1150433	.0615969
_Iyear_1999	-.0259518	.0455785	-0.57	0.573	-.1183893	.0664857
_Iyear_2000	-.0123932	.0429305	-0.29	0.774	-.0994603	.074674
_Iyear_2001	-.017832	.0438165	-0.41	0.686	-.106696	.0710319
_Iyear_2002	-.0096461	.0446151	-0.22	0.830	-.1001296	.0808375
_Iyear_2003	.0106494	.043794	0.24	0.809	-.078169	.0994677
_cons	.7489741	.0489224	15.31	0.000	.6497549	.8481933

```
. test premit prembank;

 ( 1)  premit = 0
 ( 2)  prembank = 0

       F(  2,    36) =   88.11
            Prob > F =    0.0000

. test premit=pdominc;

 ( 1)  premit - pdominc = 0

       F(  1,    36) =    0.86
            Prob > F =    0.3596
```

b. Using QMONEY

```
. xi: reg consume premit pdominc premqm qmoney reali i.country i.year, robust
cluster(country_1);
i.country         _Icountry_1-40      (_Icountry_1 for cou~y==Bangladesh omitted)
i.year            _Iyear_1975-2003    (naturally coded; _Iyear_1975 omitted)

Regression with robust standard errors                Number of obs =     756
                                                      F( 31,    36) =       .
                                                      Prob > F      =       .
                                                      R-squared     =  0.7495
Number of clusters (country_1) = 37                   Root MSE      =  .08462
------------------------------------------------------------------------------
             |               Robust
     consume |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      premit |   .3518086   .3575023     0.98   0.332    -.3732398    1.076857
     pdominc |   .0779019   .0218624     3.56   0.001     .0335628    .1222409
      premqm |   .7128504   .7668646     0.93   0.359    -.8424231    2.268124
      qmoney |  -.0753725   .0662878    -1.14   0.263    -.2098104    .0590655
       reali |   .1970714   .0561153     3.51   0.001     .0832643    .3108786
 _Icountry_2 |   .0083698   .0092204     0.91   0.370    -.0103301    .0270697
 _Icountry_3 |  -.1012412   .0055416   -18.27   0.000    -.1124802   -.0900022
 _Icountry_4 |  -.4130826   .0051054   -80.91   0.000    -.4234367   -.4027284
 _Icountry_5 |  -.2939445   .0311291    -9.44   0.000    -.3570773   -.2308117
 _Icountry_6 |  -.1293807   .0105968   -12.21   0.000     -.150872   -.1078894
 _Icountry_7 |  -.2356493   .0073425   -32.09   0.000    -.2505406    -.220758
 _Icountry_8 |  -.1532677   .0303797    -5.05   0.000    -.2148805   -.0916549
 _Icountry_9 |  -.1006558   .0110887    -9.08   0.000    -.1231447   -.0781669
_Icountry_10 |  -.2214879   .0220335   -10.05   0.000    -.2661739   -.1768019
_Icountry_11 |   -.001463   .0183314    -0.08   0.937    -.0386407    .0357147
_Icountry_12 |  -.3560117   .0151725   -23.46   0.000    -.3867829   -.3252405
_Icountry_13 |   .0311878   .0036621     8.52   0.000     .0237607    .0386148
_Icountry_14 |  -.1135282   .0057142   -19.87   0.000     -.125117   -.1019393
_Icountry_15 |  -.0962236    .010117    -9.51   0.000    -.1167418   -.0757055
_Icountry_16 |  (dropped)
_Icountry_17 |  -.2601583   .0095261   -27.31   0.000    -.2794781   -.2408384
_Icountry_18 |  -.1950474   .0601725    -3.24   0.003    -.3170829   -.0730119
_Icountry_19 |  -.1509553   .0072277   -20.89   0.000    -.1656138   -.1362969
_Icountry_20 |  -.2417129   .0142402   -16.97   0.000    -.2705932   -.2128325
_Icountry_21 |  -.0549899   .0559245    -0.98   0.332    -.1684101    .0584303
_Icountry_22 |  -.3221953   .0265522   -12.13   0.000    -.3760457    -.268345
_Icountry_23 |    .022811   .0088744     2.57   0.014     .0048129    .0408092
_Icountry_24 |  -.1095538   .0113003    -9.69   0.000    -.1324718   -.0866358
_Icountry_25 |  -.1610848   .0127468   -12.64   0.000    -.1869365   -.1352331
_Icountry_26 |   .0399325   .0055364     7.21   0.000     .0287041     .051161
_Icountry_27 |  -.2285821   .0152748   -14.96   0.000    -.2595608   -.1976033
_Icountry_28 |  (dropped)
```

consume	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
_Icountry_29	-.0906371	.0106836	-8.48	0.000	-.1123045	-.0689697
_Icountry_30	-.1355027	.0083222	-16.28	0.000	-.1523808	-.1186246
_Icountry_31	-.0122576	.0065872	-1.86	0.071	-.025617	.0011018
_Icountry_32	-.1682064	.0216418	-7.77	0.000	-.212098	-.1243148
_Icountry_33	-.060185	.0064332	-9.36	0.000	-.0732321	-.0471379
_Icountry_34	-.208106	.0111192	-18.72	0.000	-.2306568	-.1855551
_Icountry_35	-.4311604	.1254183	-3.44	0.001	-.6855205	-.1768002
_Icountry_36	-.2035019	.0247697	-8.22	0.000	-.2537373	-.1532666
_Icountry_37	-.1574164	.012342	-12.75	0.000	-.1824471	-.1323856
_Icountry_38	-.191488	.0121505	-15.76	0.000	-.2161305	-.1668455
_Icountry_39	-.2127758	.0156211	-13.62	0.000	-.2444569	-.1810948
_Icountry_40	(dropped)					
_Iyear_1976	(dropped)					
_Iyear_1977	-.0488854	.023185	-2.11	0.042	-.0959067	-.001864
_Iyear_1978	-.0529564	.0314663	-1.68	0.101	-.1167732	.0108603
_Iyear_1979	-.0223298	.0355562	-0.63	0.534	-.0944411	.0497815
_Iyear_1980	-.0030748	.0396708	-0.08	0.939	-.0835308	.0773813
_Iyear_1981	-.0121953	.0330056	-0.37	0.714	-.0791338	.0547433
_Iyear_1982	-.0210644	.0303831	-0.69	0.493	-.0826842	.0405554
_Iyear_1983	-.0126743	.0287	-0.44	0.661	-.0708806	.0455321
_Iyear_1984	-.0310608	.0310059	-1.00	0.323	-.0939436	.031822
_Iyear_1985	-.0295459	.0334129	-0.88	0.382	-.0973104	.0382186
_Iyear_1986	-.0154802	.0351603	-0.44	0.662	-.0867887	.0558282
_Iyear_1987	-.0159845	.0309639	-0.52	0.609	-.0787823	.0468133
_Iyear_1988	-.0211282	.0307139	-0.69	0.496	-.083419	.0411626
_Iyear_1989	-.0374269	.0274366	-1.36	0.181	-.093071	.0182172
_Iyear_1990	-.0326558	.0302545	-1.08	0.288	-.0940147	.0287031
_Iyear_1991	-.0334444	.0339738	-0.98	0.331	-.1023464	.0354576
_Iyear_1992	-.0188537	.0359429	-0.52	0.603	-.0917493	.0540418
_Iyear_1993	-.0416352	.036154	-1.15	0.257	-.1149588	.0316884
_Iyear_1994	-.0557825	.0388771	-1.43	0.160	-.134629	.023064
_Iyear_1995	-.041976	.0384951	-1.09	0.283	-.1200477	.0360957
_Iyear_1996	-.0637643	.0437571	-1.46	0.154	-.1525078	.0249791
_Iyear_1997	-.0641464	.0424445	-1.51	0.139	-.1502278	.0219351
_Iyear_1998	-.0378258	.0418311	-0.90	0.372	-.1226632	.0470117
_Iyear_1999	-.0323228	.0439068	-0.74	0.466	-.12137	.0567244
_Iyear_2000	-.019832	.0400335	-0.50	0.623	-.1010237	.0613597
_Iyear_2001	-.0199432	.0410144	-0.49	0.630	-.1031243	.063238
_Iyear_2002	-.0095932	.0429911	-0.22	0.825	-.0967831	.0775968
_Iyear_2003	.0047	.0434292	0.11	0.914	-.0833785	.0927785
_cons	.7523094	.0452576	16.62	0.000	.6605228	.844096

```
. test premit premqm;

 ( 1)  premit = 0
 ( 2)  premqm = 0

       F(  2,    36) =   84.22
            Prob > F =    0.0000

. test premit=pdominc;

 ( 1)  premit - pdominc = 0

       F(  1,    36) =    0.58
            Prob > F =    0.4510
```

2. Ordinary Least Squares with Centered Interaction Terms

a. Using BANKCRED

```
. xi: reg consume premit cordinc aveprembank bankcred reali i.country i.year,
robust cluster(country_1);
i.country      _Icountry_1-40      (_Icountry_1 for cou~y==Bangladesh omitted)
i.year         _Iyear_1975-2003    (naturally coded; _Iyear_1975 omitted)

Regression with robust standard errors                Number of obs =     758
                                                      F( 31,    36) =       .
                                                      Prob > F      =       .
                                                      R-squared     =  0.7515
Number of clusters (country_1) = 37                   Root MSE      =  .08418
------------------------------------------------------------------------------
             |               Robust
     consume |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      premit |   .7520401    .079831     9.42   0.000     .5901353     .913945
     pdominc |   .0767123   .0235763     3.25   0.002     .0288973    .1245273
 aveprembank |  -1.415399   .7536775    -1.88   0.069    -2.943928    .1131297
    bankcred |  -.0582811   .0385982    -1.51   0.140    -.1365619    .0199997
       reali |   .1994165   .0573236     3.48   0.001     .0831588    .3156742
 _Icountry_2 |   .0029008   .0058504     0.50   0.623    -.0089644     .014766
 _Icountry_3 |  -.0880928   .0065026   -13.55   0.000    -.1012806    -.074905
 _Icountry_4 |  -.4450227   .0237495   -18.74   0.000     -.493189   -.3968565
 _Icountry_5 |  -.2666808   .0253896   -10.50   0.000    -.3181732   -.2151883
 _Icountry_6 |  -.1201915    .007125   -16.87   0.000    -.1346416   -.1057413
 _Icountry_7 |  -.2352298   .0033996   -69.19   0.000    -.2421245    -.228335
 _Icountry_8 |  -.1526416   .0292302    -5.22   0.000    -.2119233   -.0933599
 _Icountry_9 |  -.1042384    .011797    -8.84   0.000    -.1281638   -.0803131
_Icountry_10 |   -.202195   .0272757    -7.41   0.000    -.2575127   -.1468774
_Icountry_11 |  -.0036251     .00748    -0.48   0.631    -.0187953    .0115452
_Icountry_12 |  -.3435761   .0168319   -20.41   0.000    -.3777128   -.3094395
_Icountry_13 |   .0296793   .0034864     8.51   0.000     .0226085    .0367502
_Icountry_14 |  -.1092069   .0043613   -25.04   0.000    -.1180522   -.1003617
_Icountry_15 |  -.0919757   .0081214   -11.33   0.000    -.1084466   -.0755047
_Icountry_16 |  (dropped)
_Icountry_17 |  -.2658064   .0082698   -32.14   0.000    -.2825784   -.2490344
_Icountry_18 |  -.1626723    .020626    -7.89   0.000    -.2045037   -.1208409
_Icountry_19 |  -.1443657   .0097355   -14.83   0.000    -.1641102   -.1246212
_Icountry_20 |  -.2292417   .0156944   -14.61   0.000    -.2610715   -.1974119
_Icountry_21 |  -.1119369   .0388048    -2.88   0.007    -.1906367   -.0332372
_Icountry_22 |  -.3064077   .0275167   -11.14   0.000    -.3622141   -.2506013
_Icountry_23 |   .0231519   .0069322     3.34   0.002     .0090928     .037211
_Icountry_24 |  -.1062783   .0095772   -11.10   0.000    -.1257017   -.0868548
_Icountry_25 |  -.1585084   .0130773   -12.12   0.000    -.1850304   -.1319863
_Icountry_26 |   .0294927   .0049057     6.01   0.000     .0195435     .039442
_Icountry_27 |  -.2300647   .0162276   -14.18   0.000    -.2629757   -.1971537
_Icountry_28 |  (dropped)
_Icountry_29 |  -.0904211   .0110298    -8.20   0.000    -.1127906   -.0680517
_Icountry_30 |  -.1288454   .0076301   -16.89   0.000    -.1443199   -.1133709
_Icountry_31 |   -.001009   .0126113    -0.08   0.937    -.0265859    .0245679
_Icountry_32 |  -.1353732   .0364136    -3.72   0.001    -.2092235   -.0615229
_Icountry_33 |  -.0607924   .0061029    -9.96   0.000    -.0731697    -.048415
_Icountry_34 |   -.232244   .0079326   -29.28   0.000    -.2483322   -.2161559
_Icountry_35 |  -.5348847   .0933271    -5.73   0.000    -.7241609   -.3456085
_Icountry_36 |  -.1871491    .027307    -6.85   0.000    -.2425304   -.1317678
_Icountry_37 |  -.1422176   .0078651   -18.08   0.000    -.1581687   -.1262664
_Icountry_38 |   -.188491   .0078901   -23.89   0.000    -.2044928   -.1724892
_Icountry_39 |   -.207318   .0186768   -11.10   0.000    -.2451962   -.1694397
_Icountry_40 |  (dropped)
 _Iyear_1976 |  (dropped)
```

consume	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
_Iyear_1977	-.0505077	.0227407	-2.22	0.033	-.0966279	-.0043875
_Iyear_1978	-.0538232	.0314949	-1.71	0.096	-.1176978	.0100514
_Iyear_1979	-.0246378	.0350378	-0.70	0.486	-.0956978	.0464221
_Iyear_1980	-.0068676	.0399285	-0.17	0.864	-.0878464	.0741111
_Iyear_1981	-.0150553	.0342567	-0.44	0.663	-.0845312	.0544206
_Iyear_1982	-.0215973	.032328	-0.67	0.508	-.0871614	.0439669
_Iyear_1983	-.0117779	.0305924	-0.38	0.703	-.0738221	.0502664
_Iyear_1984	-.0308642	.0327626	-0.94	0.352	-.0973097	.0355813
_Iyear_1985	-.0272631	.0343948	-0.79	0.433	-.0970191	.0424928
_Iyear_1986	-.0150984	.0352316	-0.43	0.671	-.0865513	.0563545
_Iyear_1987	-.0180153	.0296766	-0.61	0.548	-.0782021	.0421716
_Iyear_1988	-.022404	.0296437	-0.76	0.455	-.0825243	.0377163
_Iyear_1989	-.0398058	.0268629	-1.48	0.147	-.0942862	.0146746
_Iyear_1990	-.0360036	.0308707	-1.17	0.251	-.0986123	.0266051
_Iyear_1991	-.0398715	.0334867	-1.19	0.242	-.1077857	.0280427
_Iyear_1992	-.0260004	.0347017	-0.75	0.459	-.0963788	.044378
_Iyear_1993	-.047438	.035967	-1.32	0.196	-.1203824	.0255064
_Iyear_1994	-.0589342	.0400043	-1.47	0.149	-.1400667	.0221983
_Iyear_1995	-.0433522	.0393929	-1.10	0.278	-.1232447	.0365402
_Iyear_1996	-.067012	.0448565	-1.49	0.144	-.1579852	.0239611
_Iyear_1997	-.0640473	.0443537	-1.44	0.157	-.1540007	.0259061
_Iyear_1998	-.0384904	.0423078	-0.91	0.369	-.1242946	.0473139
_Iyear_1999	-.0342999	.045565	-0.75	0.456	-.1267101	.0581102
_Iyear_2000	-.0211739	.0424583	-0.50	0.621	-.1072834	.0649356
_Iyear_2001	-.0281584	.0424507	-0.66	0.511	-.1142524	.0579356
_Iyear_2002	-.0184246	.0433415	-0.43	0.673	-.1063252	.069476
_Iyear_2003	-.0018891	.042354	-0.04	0.965	-.0877869	.0840087
_cons	.7500816	.0476944	15.73	0.000	.6533529	.8468103

```
. test premit aveprembank;

 ( 1)  premit = 0
 ( 2)  aveprembank = 0

       F(  2,    36) =   54.03

            Prob > F =    0.0000

. test premit=pdominc;

 ( 1)  premit - pdominc = 0

       F(  1,    36) =   77.10
            Prob > F =    0.0000
```

b. Using QMONEY

```
. xi: reg consume premit pdominc avepremqm qmoney reali i.country i.year,
robust cluster(country_1);
i.country   _Icountry_1-40      (_Icountry_1 for cou~y==Bangladesh omitted)
i.year      _Iyear_1975-2003    (naturally coded; _Iyear_1975 omitted)

Regression with robust standard errors                Number of obs =     756
                                                      F( 31,    36) =       .
                                                      Prob > F      =       .
                                                      R-squared     =  0.7504
Number of clusters (country_1) = 37                   Root MSE      =  .08447
------------------------------------------------------------------------------
             |               Robust
     consume |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      premit |   .7754838   .0865087     8.96   0.000      .600036    .9509316
     pdominc |   .0768525   .0222611     3.45   0.001     .0317049        .122
   avepremqm |  -2.215752   1.119875    -1.98   0.056    -4.486963    .0554597
      qmoney |  -.0622336   .0594233    -1.05   0.302    -.1827496    .0582823
       reali |   .1919779    .05684     3.38   0.002      .076701    .3072547
 _Icountry_2 |   .0012196   .0062754     0.19   0.847    -.0115074    .0139466
 _Icountry_3 |  -.0965989   .0036387   -26.55   0.000    -.1039786   -.0892192
 _Icountry_4 |  -.4153783    .005039   -82.43   0.000    -.4255979   -.4051588
 _Icountry_5 |  -.2886091   .0297635    -9.70   0.000    -.3489723    -.228246
 _Icountry_6 |  -.1262402   .0091027   -13.87   0.000    -.1447014    -.107779
 _Icountry_7 |   -.232191   .0072102   -32.20   0.000    -.2468139   -.2175681
 _Icountry_8 |  -.1587893   .0295511    -5.37   0.000    -.2187218   -.0988568
 _Icountry_9 |  -.1060479   .0121905    -8.70   0.000    -.1307714   -.0813245
_Icountry_10 |  -.2196835   .0221215    -9.93   0.000     -.264548   -.1748191
_Icountry_11 |  -.0249482   .0150176    -1.66   0.105    -.0554053     .005509
_Icountry_12 |  -.3499867    .015117   -23.15   0.000    -.3806455    -.319328
_Icountry_13 |   .0344136   .0021317    16.14   0.000     .0300904    .0387369
_Icountry_14 |  -.1109344   .0053068   -20.90   0.000    -.1216972   -.1001717
_Icountry_15 |  -.0939145   .0101903    -9.22   0.000    -.1145814   -.0732476
_Icountry_16 |  (dropped)
_Icountry_17 |  -.2641041   .0087245   -30.27   0.000    -.2817983     -.24641
_Icountry_18 |  -.1657719   .0385241    -4.30   0.000    -.2439024   -.0876414
_Icountry_19 |  -.1503857    .007351   -20.46   0.000    -.1652942   -.1354772
_Icountry_20 |  -.2390337   .0140463   -17.02   0.000    -.2675209   -.2105466
_Icountry_21 |  -.1322574   .0377228    -3.51   0.001    -.2087627   -.055752
_Icountry_22 |  -.3207987   .0259228   -12.38   0.000    -.3733727   -.2682248
_Icountry_23 |   .0178293   .0074378     2.40   0.022     .0027448    .0329139
_Icountry_24 |    -.10749   .0101423   -10.60   0.000    -.1280596   -.0869204
_Icountry_25 |  -.1689502   .0115468   -14.63   0.000    -.1923682   -.1455321
_Icountry_26 |   .0400114   .0055449     7.22   0.000     .0287658    .0512571
_Icountry_27 |  -.2268426   .0153806   -14.75   0.000     -.258036   -.1956493
_Icountry_28 |  (dropped)
_Icountry_29 |  -.0885802   .0100784    -8.79   0.000    -.1090201   -.0681403
_Icountry_30 |   -.129565   .0087998   -14.72   0.000    -.1474118   -.1117182
_Icountry_31 |  -.0118705   .0067593    -1.76   0.088     -.025579     .001838
_Icountry_32 |  -.1673066   .0213208    -7.85   0.000    -.2105472    -.124066
_Icountry_33 |  -.0668699   .0048977   -13.65   0.000    -.0768029    -.056937
_Icountry_34 |  -.2203234   .0064143   -34.35   0.000    -.2333322   -.2073146
_Icountry_35 |  -.5018484    .131733    -3.81   0.001    -.7690154   -.2346815
_Icountry_36 |  -.2029883   .0241166    -8.42   0.000    -.2518991   -.1540775
_Icountry_37 |  -.1542783   .0120187   -12.84   0.000    -.1786533   -.1299033
_Icountry_38 |   -.188293   .0122351   -15.39   0.000     -.213107    -.163479
_Icountry_39 |  -.2172451    .014122   -15.38   0.000    -.2458857   -.1886045
_Icountry_40 |  (dropped)
 _Iyear_1976 |  (dropped)
 _Iyear_1977 |  -.0513304   .0226909    -2.26   0.030    -.0973498    -.005311
```

consume	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
_Iyear_1978	-.0567006	.0306625	-1.85	0.073	-.1188871	.0054859
_Iyear_1979	-.0288739	.0331174	-0.87	0.389	-.0960392	.0382914
_Iyear_1980	-.0109069	.0371263	-0.29	0.771	-.0862025	.0643886
_Iyear_1981	-.0214223	.0308468	-0.69	0.492	-.0839826	.0411379
_Iyear_1982	-.0294093	.0283046	-1.04	0.306	-.0868138	.0279952
_Iyear_1983	-.0194722	.0271923	-0.72	0.479	-.0746208	.0356764
_Iyear_1984	-.0379673	.0293205	-1.29	0.204	-.0974319	.0214973
_Iyear_1985	-.0338965	.0316997	-1.07	0.292	-.0981864	.0303935
_Iyear_1986	-.0208816	.0334371	-0.62	0.536	-.0886952	.0469319
_Iyear_1987	-.0225924	.0288292	-0.78	0.438	-.0810608	.035876
_Iyear_1988	-.0282068	.0290283	-0.97	0.338	-.0870789	.0306653
_Iyear_1989	-.0447153	.0260275	-1.72	0.094	-.0975016	.008071
_Iyear_1990	-.0399484	.0285512	-1.40	0.170	-.0978528	.0179561
_Iyear_1991	-.043387	.0308015	-1.41	0.168	-.1058554	.0190813
_Iyear_1992	-.0285203	.0323949	-0.88	0.384	-.0942202	.0371795
_Iyear_1993	-.0500686	.0336611	-1.49	0.146	-.1183365	.0181994
_Iyear_1994	-.063357	.0366342	-1.73	0.092	-.1376546	.0109406
_Iyear_1995	-.0495686	.0352851	-1.40	0.169	-.1211301	.0219929
_Iyear_1996	-.0724228	.0407057	-1.78	0.084	-.1549778	.0101323
_Iyear_1997	-.0714205	.0396275	-1.80	0.080	-.1517887	.0089477
_Iyear_1998	-.0449137	.0388922	-1.15	0.256	-.1237909	.0339634
_Iyear_1999	-.040381	.0414305	-0.97	0.336	-.124406	.0436439
_Iyear_2000	-.0249908	.0387886	-0.64	0.523	-.1036577	.0536761
_Iyear_2001	-.0237954	.0390723	-0.61	0.546	-.1030378	.0554469
_Iyear_2002	-.0158683	.0392828	-0.40	0.689	-.0955375	.0638009
_Iyear_2003	-.0022878	.0417263	-0.05	0.957	-.0869126	.082337
_cons	.7523377	.0446642	16.84	0.000	.6617546	.8429209

```
. test premit avepremqm;

 ( 1)  premit = 0
 ( 2)  avepremqm = 0

       F(  2,    36) =   85.26
            Prob > F =    0.0000


. test premit=pdominc;

 ( 1)  premit - pdominc = 0

       F(  1,    36) =   76.42
            Prob > F =    0.0000
```

Appendix D

Raw Regression Output for Determinants of Investment Model:

A. Ordinary Least Squares Regressions

1. Using BANKCRED

```
. xi: reg gdi open lending sg  gdi1 tremit opentrem bankcred bctrem openbc
openbctr i.country i.yearave, robust cluster (country_1);
i.country_1       _Icountry_1_1-40    (naturally coded; _Icountry_1_1 omitted)
i.yearave         _Iyearave_1-6       (naturally coded; _Iyearave_1 omitted)

Regression with robust standard errors                Number of obs =     137
                                                      F( 13,    33) =       .
                                                      Prob > F      =       .
                                                      R-squared     =  0.8804

Number of clusters (country_1) = 34                   Root MSE      =  .03581
------------------------------------------------------------------------------
             |               Robust
         gdi |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
        open |   .1124117   .0540708     2.08   0.045     .0024038    .2224197
     lending |   .0210165   .0129975     1.62   0.115    -.0054272    .0474602
          sg |   .1565295   .0467617     3.35   0.002      .061392    .2516669
        gdi1 |   .2753547   .1151495     2.39   0.023     .0410812    .5096282
      tremit |  -.5607052   1.448797    -0.39   0.701    -3.508305    2.386895
    opentrem |   1.218181   1.137893     1.07   0.292     -1.09688    3.533243
    bankcred |  -.0179275   .0543352    -0.33   0.744    -.1284733    .0926184
      bctrem |   1.700716   1.999866     0.85   0.401    -2.368043    5.769475
       openbc |  -.0459285    .051493    -0.89   0.379    -.1506918    .0588348
    openbctr |  -2.327423   1.664912    -1.40   0.171    -5.714712    1.059867
_Icountry~_2 |  (dropped)
_Icountry~_3 |  -.0434608   .0214045    -2.03   0.050    -.0870085     .000087
_Icountry~_4 |  -.0923329   .0552878    -1.67   0.104    -.2048168    .0201511
_Icountry~_5 |  (dropped)
_Icountry~_6 |   -.018358   .0200835    -0.91   0.367    -.0592183    .0225022
_Icountry~_7 |  -.0395967   .0290399    -1.36   0.182    -.0986788    .0194853
_Icountry~_8 |   .0269131   .0325338     0.83   0.414    -.0392774    .0931036
_Icountry~_9 |  -.0573027   .0321648    -1.78   0.084    -.1227425     .008137
_Icountry~10 |  -.0071562    .026476    -0.27   0.789     -.061022    .0467096
_Icountry~11 |  -.0758641   .0198917    -3.81   0.001     -.116334   -.0353943
_Icountry~12 |  -.0998765   .0192577    -5.19   0.000    -.1390565   -.0606964
_Icountry~13 |  -.0649384   .0140248    -4.63   0.000     -.093472   -.0364048
_Icountry~14 |  -.0052551   .0284859    -0.18   0.855    -.0632101    .0526998
_Icountry~15 |   .0358433   .0157828     2.27   0.030     .0037329    .0679537
_Icountry~16 |  -.0083051   .0267397    -0.31   0.758    -.0627074    .0460972
_Icountry~17 |  -.0268428    .037029    -0.72   0.474    -.1021789    .0484932
_Icountry~18 |  -.0035131   .0355095    -0.10   0.922    -.0757576    .0687315
_Icountry~19 |  -.0569066   .0203813    -2.79   0.009    -.0983726   -.0154406
_Icountry~20 |   .0542817   .0249957     2.17   0.037     .0034276    .1051358
_Icountry~21 |   .1699772   .0580933     2.93   0.006     .0517855    .2881688
_Icountry~22 |     .04224    .043984     0.96   0.344    -.0472461    .1317261
_Icountry~23 |   -.030274    .017492    -1.73   0.093    -.0658617    .0053136
_Icountry~24 |  -.0181158   .0229824    -0.79   0.436    -.0648737    .0286422
_Icountry~25 |   .0019191   .0197023     0.10   0.923    -.0381654    .0420037
_Icountry~26 |   .0034502   .0151955     0.23   0.822    -.0274652    .0343656
_Icountry~27 |  -.0586506   .0277088    -2.12   0.042    -.1150245   -.0022767
_Icountry~28 |  (dropped)
```

```
------------------------------------------------------------------------------
             |               Robust
         gdi |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
_Icountry~29 |    -.060279   .0357878    -1.68   0.102    -.1330898    .0125318
_Icountry~30 |   -.0393918   .0228978    -1.72   0.095    -.0859778    .0071941
_Icountry~31 |   -.1178609   .0320084    -3.68   0.001    -.1829824   -.0527394
_Icountry~32 |   -.0164402   .0316423    -0.52   0.607    -.0808169    .0479365
_Icountry~33 |   -.0026677   .0257283    -0.10   0.918    -.0550122    .0496768
_Icountry~34 |   -.1624949   .0738216    -2.20   0.035     -.312686   -.0123037
_Icountry~35 |  (dropped)
_Icountry~36 |    .0587115   .0248291     2.36   0.024     .0081962    .1092268
_Icountry~37 |   -.1128097   .0355922    -3.17   0.003    -.1852227   -.0403968
_Icountry~38 |  (dropped)
_Icountry~39 |     .017929   .0263625     0.68   0.501    -.0357058    .0715638
_Icountry~40 |  (dropped)
 _Iyearave_2 |    .0290035   .0168977     1.72   0.095     -.005375    .0633821
 _Iyearave_3 |    .0034397   .0146033     0.24   0.815    -.0262709    .0331503
 _Iyearave_4 |    .0351709   .0120864     2.91   0.006     .0105809    .0597608
 _Iyearave_5 |    .0213507   .0110334     1.94   0.062     -.001097    .0437983
 _Iyearave_6 |  (dropped)
       _cons |    .1113742    .034264     3.25   0.003     .0416636    .1810849
------------------------------------------------------------------------------

. test open tremit opentrem bankcred bctrem openbc openbctr;

 ( 1)  open = 0
 ( 2)  tremit = 0
 ( 3)  opentrem = 0
 ( 4)  bankcred = 0
 ( 5)  bctrem = 0
 ( 6)  openbc = 0
 ( 7)  openbctr = 0

       F(  7,    33) =    7.07
            Prob > F =    0.0000

. test tremit opentrem bctrem openbctr;

 ( 1)  tremit = 0
 ( 2)  opentrem = 0
 ( 3)  bctrem = 0
 ( 4)  openbctr = 0

       F(  4,    33) =    8.52
            Prob > F =    0.0001

. test open opentrem openbc openbctr;

 ( 1)  open = 0
 ( 2)  opentrem = 0
 ( 3)  openbc = 0
 ( 4)  openbctr = 0

       F(  4,    33) =    2.05
            Prob > F =    0.1103

. test bankcred bctrem openbc openbctr;

 ( 1)  bankcred = 0
 ( 2)  bctrem = 0
 ( 3)  openbc = 0
 ( 4)  openbctr = 0
```

```
       F(  4,     33) =     2.85
            Prob > F =     0.0393
```

2. Using QMONEY

```
. xi: reg gdi open lending sg gdi1 tremit opentrem qmoney qmtrem openqm
openqmtr i.country i.yearave, robust cluster (country_1);
i.country_1       _Icountry_1_1-40    (naturally coded; _Icountry_1_1 omitted)
i.yearave         _Iyearave_1-6       (naturally coded; _Iyearave_1 omitted)

Regression with robust standard errors                Number of obs =     137
                                                      F( 13,    33) =       .
                                                      Prob > F      =       .
                                                      R-squared     =  0.8875
Number of clusters (country_1) = 34                   Root MSE      =  .03473
------------------------------------------------------------------------------
             |               Robust
         gdi |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
        open |   .1364028   .0766672     1.78   0.084    -.0195778    .2923834
     lending |   .0241377   .0168314     1.43   0.161    -.0101061    .0583814
          sg |   .1487365   .0391805     3.80   0.001     .0690232    .2284499
        gdi1 |   .2913498     .13334     2.19   0.036     .0200676    .5626321
      tremit |  -.2159011   .9666632    -0.22   0.825    -2.182592     1.75079
    opentrem |   1.575528    1.00668     1.57   0.127    -.4725785    3.623634
      qmoney |   .0479148   .1183334     0.40   0.688    -.1928363    .2886659
      qmtrem |    .669792   2.025126     0.33   0.743    -3.450359    4.789943
      openqm |  -.1494481   .1086351    -1.38   0.178    -.3704679    .0715718
    openqmtr |  -2.783924   2.155499    -1.29   0.205     -7.16932    1.601472
_Icountry~_2 |  (dropped)
_Icountry~_3 |  -.0535574   .0233221    -2.30   0.028    -.1010066   -.0061083
_Icountry~_4 |  -.0544633   .0486653    -1.12   0.271    -.1534735     .044547
_Icountry~_5 |  (dropped)
_Icountry~_6 |  -.0251497   .0214858    -1.17   0.250    -.0688629    .0185635
_Icountry~_7 |   -.041615   .0347673    -1.20   0.240    -.1123497    .0291196
_Icountry~_8 |   .0224582   .0443155     0.51   0.616    -.0677024    .1126187
_Icountry~_9 |  -.0750287   .0393576    -1.91   0.065    -.1551022    .0050449
_Icountry~10 |  -.0282297   .0375668    -0.75   0.458      -.10466    .0482005
_Icountry~11 |  -.1056744   .0241573    -4.37   0.000    -.1548228    -.056526
_Icountry~12 |  -.0936124   .0231922    -4.04   0.000    -.1407974   -.0464274
_Icountry~13 |   -.067406   .0168425    -4.00   0.000    -.1016724   -.0331397
_Icountry~14 |  -.0086493   .0329766    -0.26   0.795    -.0757407    .0584421
_Icountry~15 |   .0261545   .0219769     1.19   0.243    -.0185579    .0708669
_Icountry~16 |  -.0121053   .0442713    -0.27   0.786    -.1021759    .0779653
_Icountry~17 |    -.03859   .0476204    -0.81   0.424    -.1354745    .0582945
_Icountry~18 |    .048531   .0416593     1.16   0.252    -.0362255    .1332874
_Icountry~19 |  -.0674352   .0260232    -2.59   0.014    -.1203798   -.0144907
_Icountry~20 |   .0417347   .0315492     1.32   0.195    -.0224527    .1059221
_Icountry~21 |   .1863633   .0597208     3.12   0.004     .0648604    .3078662
_Icountry~22 |   .0429006   .0485284     0.88   0.383    -.0558313    .1416324
_Icountry~23 |  -.0376117   .0215439    -1.75   0.090    -.0814432    .0062197
_Icountry~24 |  -.0239514   .0252576    -0.95   0.350    -.0753383    .0274355
_Icountry~25 |  -.0081017   .0277034    -0.29   0.772    -.0644646    .0482613
_Icountry~26 |  -.0014233   .0181055    -0.08   0.938    -.0382592    .0354127
_Icountry~27 |   -.063009   .0329766    -1.91   0.065    -.1301003    .0040824
_Icountry~28 |  (dropped)
_Icountry~29 |  -.0656763   .0415851    -1.58   0.124    -.1502818    .0189291
_Icountry~30 |  -.0422192   .0285544    -1.48   0.149    -.1003136    .0158751
_Icountry~31 |  -.1388534   .0426062    -3.26   0.003    -.2255364   -.0521703
_Icountry~32 |  -.0486888   .0335176    -1.45   0.156    -.1168809    .0195033
_Icountry~33 |  -.0169211   .0316199    -0.54   0.596    -.0812522      .04741
_Icountry~34 |  -.1452243   .0784358    -1.85   0.073    -.3048031    .0143545
```

```
------------------------------------------------------------------------------
             |               Robust
         gdi |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
_Icountry~35 |  (dropped)
_Icountry~36 |   .0500718   .0364088     1.38   0.178    -.0240024     .124146
_Icountry~37 |  -.1387139   .0490066    -2.83   0.008    -.2384185   -.0390092
_Icountry~38 |  (dropped)
_Icountry~39 |   .0022866   .0344775     0.07   0.948    -.0678584    .0724316
_Icountry~40 |  (dropped)
 _Iyearave_2 |   .0245272   .0190572     1.29   0.207    -.0142449    .0632993
 _Iyearave_3 |  -.0007808   .0172387    -0.05   0.964    -.0358533    .0342917
 _Iyearave_4 |   .0306883   .0125788     2.44   0.020     .0050966    .0562801
 _Iyearave_5 |   .0161199   .0110219     1.46   0.153    -.0063043    .0385441
 _Iyearave_6 |  (dropped)
       _cons |   .0967953   .0396691     2.44   0.020      .016088    .1775026
------------------------------------------------------------------------------

. test open tremit opentrem qmoney qmtrem openqm openqmtr;

 ( 1)  open = 0
 ( 2)  tremit = 0
 ( 3)  opentrem = 0
 ( 4)  qmoney = 0
 ( 5)  qmtrem = 0
 ( 6)  openqm = 0
 ( 7)  openqmtr = 0

       F(  7,    33) =    8.19
            Prob > F =    0.0000

. test tremit opentrem qmtrem openqmtr;

 ( 1)  tremit = 0
 ( 2)  opentrem = 0
 ( 3)  qmtrem = 0
 ( 4)  openqmtr = 0

       F(  4,    33) =    9.68
            Prob > F =    0.0000

. test open opentrem openqm openqmtr;

 ( 1)  open = 0
 ( 2)  opentrem = 0
 ( 3)  openqm = 0
 ( 4)  openqmtr = 0

       F(  4,    33) =    2.71
            Prob > F =    0.0467

. test qmoney qmtrem openqm openqmtr;

 ( 1)  qmoney = 0
 ( 2)  qmtrem = 0
 ( 3)  openqm = 0
 ( 4)  openqmtr = 0

       F(  4,    33) =    9.64
            Prob > F =    0.0000
```

B. Two-Stage Least Squares Regressions

1. Using BANKCRED

```
. xi: ivreg gdi open lending sg i.country i.yearave (gdi1 tremit opentrem
bankcred bctrem openbc openbctr = gdifd2 tremfd1 opldiff opendiff tropfd
sgldiff tropsglfd sgdiff), robust cluster (country_1) first;
i.country_1       _Icountry_1_1-40    (naturally coded; _Icountry_1_1 omitted)
i.yearave         _Iyearave_1-6       (naturally coded; _Iyearave_1 omitted)

First-stage regressions
-----------------------
```

Source	SS	df	MS	Number of obs =	70
				F(41, 28) =	13.66
Model	.575965099	41	.014047929	Prob > F =	0.0000
Residual	.028803231	28	.001028687	R-squared =	0.9524
				Adj R-squared =	0.8826
Total	.604768331	69	.008764758	Root MSE =	.03207

gdi1	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
open	.0539171	.0759772	0.71	0.484	-.1017151	.2095492
lending	-.0069331	.1451651	-0.05	0.962	-.3042903	.2904242
sg	-.0331451	.3122577	-0.11	0.916	-.672776	.6064858
_Icountry~_2	(dropped)					
_Icountry~_3	-.0602256	.1232389	-0.49	0.629	-.3126691	.1922179
_Icountry~_4	.0248319	.0717402	0.35	0.732	-.1221212	.1717851
_Icountry~_5	(dropped)					
_Icountry~_6	.0123705	.1262972	0.10	0.923	-.2463377	.2710786
_Icountry~_7	-.0110726	.0884645	-0.13	0.901	-.192284	.1701388
_Icountry~_8	.029592	.0745542	0.40	0.694	-.1231254	.1823093
_Icountry~_9	.0014104	.1032496	0.01	0.989	-.2100869	.2129076
_Icountry~10	-.0314002	.1158162	-0.27	0.788	-.2686389	.2058385
_Icountry~11	-.0692258	.0984415	-0.70	0.488	-.2708741	.1324224
_Icountry~12	(dropped)					
_Icountry~13	-.0753958	.1080321	-0.70	0.491	-.2966895	.1458978
_Icountry~14	-.002219	.0808406	-0.03	0.978	-.1678135	.1633755
_Icountry~15	.026811	.1249877	0.21	0.832	-.2292147	.2828367
_Icountry~16	-.0119822	.0927646	-0.13	0.898	-.202002	.1780375
_Icountry~17	(dropped)					
_Icountry~18	-.009923	.0752085	-0.13	0.896	-.1639806	.1441346
_Icountry~19	-.0491319	.0997347	-0.49	0.626	-.2534291	.1551653
_Icountry~20	.1132631	.0928867	1.22	0.233	-.0770068	.3035329
_Icountry~21	.365418	.0597534	6.12	0.000	.2430187	.4878173
_Icountry~22	(dropped)					
_Icountry~23	-.0194374	.1010218	-0.19	0.849	-.2263712	.1874964
_Icountry~24	-.0048424	.1041722	-0.05	0.963	-.2182296	.2085447
_Icountry~25	-.0027832	.0967606	-0.03	0.977	-.2009882	.1954218
_Icountry~26	-.0027445	.1046437	-0.03	0.979	-.2170975	.2116085
_Icountry~27	-.0554069	.0953276	-0.58	0.566	-.2506766	.1398628
_Icountry~28	(dropped)					
_Icountry~29	-.0052194	.1049663	-0.05	0.961	-.2202331	.2097943
_Icountry~30	-.0308153	.0822317	-0.37	0.711	-.1992594	.1376287
_Icountry~31	(dropped)					
_Icountry~32	-.0680704	.1079926	-0.63	0.534	-.2892833	.1531425
_Icountry~33	.0003513	.0921199	0.00	0.997	-.1883479	.1890504
_Icountry~34	-.0408652	.0422298	-0.97	0.341	-.1273691	.0456386
_Icountry~35	(dropped)					
_Icountry~36	.0797833	.0650742	1.23	0.230	-.0535152	.2130818
_Icountry~37	-.0316623	.082902	-0.38	0.705	-.2014793	.1381547

gdi1	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
_Icountry~38	(dropped)					
_Icountry~39	(dropped)					
_Icountry~40	(dropped)					
_Iyearave_2	(dropped)					
_Iyearave_3	(dropped)					
_Iyearave_4	-.0209039	.0172018	-1.22	0.234	-.0561403	.0143324
_Iyearave_5	(dropped)					
_Iyearave_6	-.0224804	.0166863	-1.35	0.189	-.0566607	.0116999
gdifd2	.1533038	.1103594	1.39	0.176	-.0727573	.3793648
tremfd1	-.0579936	.1621371	-0.36	0.723	-.3901164	.2741292
opldiff	.2295635	.3667025	0.63	0.536	-.5215924	.9807195
opendiff	.0636232	.0642629	0.99	0.331	-.0680135	.1952599
tropfd	-1.623744	2.491064	-0.65	0.520	-6.726458	3.478969
sgldiff	.1640356	.4462657	0.37	0.716	-.7500982	1.078169
tropsglfd	-18.54107	2340.393	-0.01	0.994	-4812.619	4775.537
sgdiff	.0107649	.1055021	0.10	0.919	-.2053464	.2268762
_cons	.2085837	.1415014	1.47	0.152	-.0812687	.4984361

Source	SS	df	MS		
Model	.053627455	41	.001307987	Number of obs	= 70
Residual	.005026692	28	.000179525	F(41, 28)	= 7.29
				Prob > F	= 0.0000
				R-squared	= 0.9143
				Adj R-squared	= 0.7888
Total	.058654147	69	.00085006	Root MSE	= .0134

tremit	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
open	.0074439	.0317398	0.23	0.816	-.057572	.0724599
lending	-.0123459	.0606433	-0.20	0.840	-.1365681	.1118762
sg	.2304106	.1304469	1.77	0.088	-.0367977	.497619
_Icountry~_2	(dropped)					
_Icountry~_3	-.000607	.0514835	-0.01	0.991	-.1060663	.1048522
_Icountry~_4	-.0408823	.0299698	-1.36	0.183	-.1022725	.020508
_Icountry~_5	(dropped)					
_Icountry~_6	-.003151	.0527612	-0.06	0.953	-.1112274	.1049253
_Icountry~_7	-.009313	.0369564	-0.25	0.803	-.0850148	.0663888
_Icountry~_8	-.0221509	.0311453	-0.71	0.483	-.0859492	.0416474
_Icountry~_9	-.0060415	.0431329	-0.14	0.890	-.0943953	.0823123
_Icountry~10	-.0146087	.0483827	-0.30	0.765	-.1137161	.0844987
_Icountry~11	.0360768	.0411243	0.88	0.388	-.0481626	.1203161
_Icountry~12	(dropped)					
_Icountry~13	.0068109	.0451308	0.15	0.881	-.0856354	.0992572
_Icountry~14	-.0064459	.0337715	-0.19	0.850	-.0756237	.0627318
_Icountry~15	.0043679	.0522141	0.08	0.934	-.1025879	.1113236
_Icountry~16	-.0253171	.0387528	-0.65	0.519	-.1046985	.0540644
_Icountry~17	(dropped)					
_Icountry~18	.0241718	.0314186	0.77	0.448	-.0401863	.08853
_Icountry~19	.0010962	.0416646	0.03	0.979	-.0842498	.0864421
_Icountry~20	-.0233681	.0388038	-0.60	0.552	-.1028541	.0561179
_Icountry~21	-.1442182	.0249622	-5.78	0.000	-.1953509	-.0930854
_Icountry~22	(dropped)					
_Icountry~23	.0057172	.0422023	0.14	0.893	-.0807302	.0921646
_Icountry~24	-.0020258	.0435184	-0.05	0.963	-.0911691	.0871175
_Icountry~25	.0032178	.0404221	0.08	0.937	-.0795831	.0860187
_Icountry~26	.0174306	.0437153	0.40	0.693	-.0721162	.1069774
_Icountry~27	-.006283	.0398235	-0.16	0.876	-.0878576	.0752917
_Icountry~28	(dropped)					
_Icountry~29	-.0275074	.0438501	-0.63	0.536	-.1173302	.0623155

tremit	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
_Icountry~30	.0095066	.0343526	0.28	0.784	-.0608616	.0798747
_Icountry~31	(dropped)					
_Icountry~32	-.0158707	.0451143	-0.35	0.728	-.1082833	.0765418
_Icountry~33	.015269	.0384835	0.40	0.695	-.0635608	.0940988
_Icountry~34	-.027027	.0176417	-1.53	0.137	-.0631643	.0091104
_Icountry~35	(dropped)					
_Icountry~36	-.0081492	.027185	-0.30	0.767	-.0638352	.0475368
_Icountry~37	-.0428104	.0346326	-1.24	0.227	-.1137521	.0281313
_Icountry~38	(dropped)					
_Icountry~39	(dropped)					
_Icountry~40	(dropped)					
_Iyearave_2	(dropped)					
_Iyearave_3	(dropped)					
_Iyearave_4	.0011775	.0071861	0.16	0.871	-.0135426	.0158976
_Iyearave_5	(dropped)					
_Iyearave_6	.0119934	.0069708	1.72	0.096	-.0022856	.0262723
gdifd2	-.0696327	.0461031	-1.51	0.142	-.1640706	.0248052
tremfd1	.2744751	.0677334	4.05	0.000	.1357295	.4132207
opldiff	.0174502	.1531914	0.11	0.910	-.2963481	.3312486
opendiff	-.0806851	.0268461	-3.01	0.006	-.1356768	-.0256934
tropfd	2.09703	1.040652	2.02	0.054	-.0346485	4.228708
sgldiff	.3916617	.1864292	2.10	0.045	.0097788	.7735447
tropsglfd	-2430.716	977.7084	-2.49	0.019	-4433.461	-427.9715
sgdiff	-.0869731	.0440739	-1.97	0.058	-.1772545	.0033082
_cons	.0160476	.0591127	0.27	0.788	-.1050393	.1371346

Source	SS	df	MS			
Model	.078146357	41	.001906009	Number of obs	=	70
Residual	.004201286	28	.000150046	F(41, 28)	=	12.70
				Prob > F	=	0.0000
				R-squared	=	0.9490
				Adj R-squared	=	0.8743
Total	.082347642	69	.001193444	Root MSE	=	.01225

opentrem	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
open	.0393638	.0290171	1.36	0.186	-.0200749	.0988026
lending	-.0052893	.0554412	-0.10	0.925	-.1188555	.1082769
sg	.17221	.1192569	1.44	0.160	-.0720768	.4164968
_Icountry~_2	(dropped)					
_Icountry~_3	.0382203	.0470672	0.81	0.424	-.0581925	.1346331
_Icountry~_4	-.0068445	.0273989	-0.25	0.805	-.0629686	.0492796
_Icountry~_5	(dropped)					
_Icountry~_6	.0423074	.0482352	0.88	0.388	-.056498	.1411128
_Icountry~_7	.0221483	.0337862	0.66	0.517	-.0470597	.0913562
_Icountry~_8	.0096837	.0284736	0.34	0.736	-.0486419	.0680092
_Icountry~_9	.0272124	.0394329	0.69	0.496	-.0535623	.107987
_Icountry~10	.0436444	.0442323	0.99	0.332	-.0469614	.1342502
_Icountry~11	.0508683	.0375966	1.35	0.187	-.0261449	.1278815
_Icountry~12	(dropped)					
_Icountry~13	.0398155	.0412594	0.97	0.343	-.0447006	.1243316
_Icountry~14	.0189342	.0308745	0.61	0.545	-.0443094	.0821777
_Icountry~15	.04608	.0477351	0.97	0.343	-.0517009	.1438609
_Icountry~16	.0143262	.0354285	0.40	0.689	-.0582459	.0868982
_Icountry~17	(dropped)					
_Icountry~18	.0106781	.0287235	0.37	0.713	-.0481593	.0695156
_Icountry~19	.0332763	.0380905	0.87	0.390	-.0447486	.1113011
_Icountry~20	.015505	.0354751	0.44	0.665	-.0571625	.0881725
_Icountry~21	-.1776577	.0228209	-7.78	0.000	-.2244042	-.1309111

opentrem	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
_Icountry~22	(dropped)					
_Icountry~23	.0326311	.0385821	0.85	0.405	-.0464007	.1116629
_Icountry~24	.0368004	.0397853	0.92	0.363	-.0446961	.1182968
_Icountry~25	.0378549	.0369546	1.02	0.314	-.0378432	.1135531
_Icountry~26	.0467992	.0399654	1.17	0.251	-.0350661	.1286646
_Icountry~27	.0241279	.0364073	0.66	0.513	-.0504492	.0987049
_Icountry~28	(dropped)					
_Icountry~29	.0093258	.0400886	0.23	0.818	-.0727919	.0914435
_Icountry~30	.0395978	.0314058	1.26	0.218	-.024734	.1039297
_Icountry~31	(dropped)					
_Icountry~32	.0286826	.0412444	0.70	0.493	-.0558027	.1131678
_Icountry~33	.0436224	.0351823	1.24	0.225	-.0284452	.1156901
_Icountry~34	-.0133745	.0161283	-0.83	0.414	-.0464119	.0196629
_Icountry~35	(dropped)					
_Icountry~36	.0156467	.024853	0.63	0.534	-.0352625	.0665558
_Icountry~37	-.0063642	.0316618	-0.20	0.842	-.0712204	.058492
_Icountry~38	(dropped)					
_Icountry~39	(dropped)					
_Icountry~40	(dropped)					
_Iyearave_2	(dropped)					
_Iyearave_3	(dropped)					
_Iyearave_4	.0057833	.0065697	0.88	0.386	-.0076741	.0192407
_Iyearave_5	(dropped)					
_Iyearave_6	.0060306	.0063728	0.95	0.352	-.0070235	.0190846
gdifd2	-.0180426	.0421483	-0.43	0.672	-.1043794	.0682943
tremfd1	.4042083	.0619231	6.53	0.000	.2773645	.5310521
opldiff	.0265997	.1400504	0.19	0.851	-.2602805	.3134799
opendiff	-.0614533	.0245432	-2.50	0.018	-.1117277	-.0111788
tropfd	.8943904	.951383	0.94	0.355	-1.054429	2.84321
sgldiff	.356746	.170437	2.09	0.046	.0076215	.7058704
tropsglfd	-2060.532	893.8391	-2.31	0.029	-3891.478	-229.5854
sgdiff	-.0667082	.0402932	-1.66	0.109	-.1492451	.0158287
_cons	-.0458348	.054042	-0.85	0.404	-.1565347	.0648652

Source	SS	df	MS		
Model	14.2239443	41	.34692547	Number of obs	= 70
Residual	.384579079	28	.013734967	F(41, 28)	= 25.26
				Prob > F	= 0.0000
				R-squared	= 0.9737
				Adj R-squared	= 0.9351
Total	14.6085233	69	.21171773	Root MSE	= .1172

bankcred	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
open	.2541819	.2776229	0.92	0.368	-.3145029	.8228666
lending	.2471477	.5304378	0.47	0.645	-.8394048	1.3337
sg	-.2227376	1.140999	-0.20	0.847	-2.559969	2.114494
_Icountry~_2	(dropped)					
_Icountry~_3	-.5220619	.4503188	-1.16	0.256	-1.444498	.4003744
_Icountry~_4	-1.647065	.2621409	-6.28	0.000	-2.184036	-1.110094
_Icountry~_5	(dropped)					
_Icountry~_6	-.7327284	.461494	-1.59	0.124	-1.678056	.2125993
_Icountry~_7	-.8395217	.3232521	-2.60	0.015	-1.501674	-.1773697
_Icountry~_8	.3200889	.2724234	1.17	0.250	-.237945	.8781229
_Icountry~_9	-.7548503	.3772773	-2.00	0.055	-1.527668	.0179672
_Icountry~10	-.0545833	.423196	-0.13	0.898	-.9214609	.8122943
_Icountry~11	-.6490178	.3597083	-1.80	0.082	-1.385847	.0878111

bankcred	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
_Icountry~12	(dropped)					
_Icountry~13	-.8674825	.3947525	-2.20	0.036	-1.676096	-.0588687
_Icountry~14	-.8225355	.2953941	-2.78	0.010	-1.427623	-.2174481
_Icountry~15	-.4691542	.4567089	-1.03	0.313	-1.40468	.4663716
_Icountry~16	-.2048961	.3389648	-0.60	0.550	-.8992341	.4894418
_Icountry~17	(dropped)					
_Icountry~18	-.0634838	.2748142	-0.23	0.819	-.6264151	.4994474
_Icountry~19	-.5918237	.3644336	-1.62	0.116	-1.338332	.1546846
_Icountry~20	-.3818747	.339411	-1.13	0.270	-1.077127	.3133772
_Icountry~21	-1.281651	.2183407	-5.87	0.000	-1.728901	-.8343999
_Icountry~22	(dropped)					
_Icountry~23	-.8253644	.3691368	-2.24	0.034	-1.581507	-.069222
_Icountry~24	-.7494117	.3806485	-1.97	0.059	-1.529135	.0303115
_Icountry~25	-.3627377	.3535661	-1.03	0.314	-1.086985	.3615095
_Icountry~26	-.6424201	.3823715	-1.68	0.104	-1.425673	.1408324
_Icountry~27	-.9835886	.3483299	-2.82	0.009	-1.69711	-.2700672
_Icountry~28	(dropped)					
_Icountry~29	-.9215309	.3835501	-2.40	0.023	-1.707198	-.1358641
_Icountry~30	-.6002445	.3004773	-2.00	0.056	-1.215744	.0152553
_Icountry~31	(dropped)					
_Icountry~32	.3531524	.3946084	0.89	0.378	-.4551663	1.161471
_Icountry~33	-.7198359	.3366091	-2.14	0.041	-1.409348	-.0303234
_Icountry~34	-1.328572	.154309	-8.61	0.000	-1.64466	-1.012484
_Icountry~35	(dropped)					
_Icountry~36	.1378227	.2377832	0.58	0.567	-.3492542	.6248995
_Icountry~37	-.9064575	.3029264	-2.99	0.006	-1.526974	-.2859409
_Icountry~38	(dropped)					
_Icountry~39	(dropped)					
_Icountry~40	(dropped)					
_Iyearave_2	(dropped)					
_Iyearave_3	(dropped)					
_Iyearave_4	-.1054366	.062856	-1.68	0.105	-.2341911	.023318
_Iyearave_5	(dropped)					
_Iyearave_6	.0323575	.0609722	0.53	0.600	-.0925384	.1572533
gdifd2	-.6151402	.4032568	-1.53	0.138	-1.441174	.2108939
tremfd1	-.4341047	.5924539	-0.73	0.470	-1.647691	.7794822
opldiff	-.9150207	1.339942	-0.68	0.500	-3.659768	1.829726
opendiff	-.1455755	.2348188	-0.62	0.540	-.62658	.335429
tropfd	4.638881	9.102425	0.51	0.614	-14.00659	23.28435
sgldiff	.9915981	1.630669	0.61	0.548	-2.348675	4.331871
tropsglfd	-9407.049	8551.87	-1.10	0.281	-26924.76	8110.661
sgdiff	-.2734598	.3855081	-0.71	0.484	-1.063137	.5162177
_cons	.890522	.5170504	1.72	0.096	-.1686076	1.949652

Source	SS	df	MS		
Model	.003790055	41	.00009244	Number of obs	= 70
Residual	.00151328	28	.000054046	F(41, 28)	= 1.71
				Prob > F	= 0.0693
				R-squared	= 0.7147
				Adj R-squared	= 0.2968
Total	.005303335	69	.00007686	Root MSE	= .00735

bctrem	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
open	.003228	.0174149	0.19	0.854	-.0324449	.0389009
lending	.0210162	.0332737	0.63	0.533	-.047142	.0891743
sg	.0563452	.0715735	0.79	0.438	-.0902664	.2029569
_Icountry~_2	(dropped)					
_Icountry~_3	-.0118162	.028248	-0.42	0.679	-.0696795	.0460471

bctrem	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
_Icountry~_4	-.0194478	.0164438	-1.18	0.247	-.0531314	.0142358
_Icountry~_5	(dropped)					
_Icountry~_6	-.0138251	.028949	-0.48	0.637	-.0731244	.0454741
_Icountry~_7	-.0141649	.0202772	-0.70	0.491	-.0557009	.0273711
_Icountry~_8	-.016503	.0170888	-0.97	0.342	-.0515078	.0185018
_Icountry~_9	-.0140689	.0236661	-0.59	0.557	-.0625468	.034409
_Icountry~10	-.0214855	.0265466	-0.81	0.425	-.0758637	.0328926
_Icountry~11	.0087795	.0225641	0.39	0.700	-.0374408	.0549999
_Icountry~12	(dropped)					
_Icountry~13	-.0110829	.0247623	-0.45	0.658	-.0618062	.0396405
_Icountry~14	-.0092344	.0185297	-0.50	0.622	-.0471908	.028722
_Icountry~15	-.0044413	.0286488	-0.16	0.878	-.0631257	.0542431
_Icountry~16	-.0195417	.0212629	-0.92	0.366	-.0630966	.0240133
_Icountry~17	(dropped)					
_Icountry~18	.0250339	.0172388	1.45	0.158	-.0102781	.0603459
_Icountry~19	-.0068387	.0228605	-0.30	0.767	-.0536663	.0399888
_Icountry~20	-.0132041	.0212908	-0.62	0.540	-.0568164	.0304082
_Icountry~21	-.0158412	.0136962	-1.16	0.257	-.0438967	.0122143
_Icountry~22	(dropped)					
_Icountry~23	-.0067428	.0231555	-0.29	0.773	-.0541747	.0406891
_Icountry~24	-.0074197	.0238776	-0.31	0.758	-.0563308	.0414913
_Icountry~25	-.0007589	.0221788	-0.03	0.973	-.04619	.0446723
_Icountry~26	.0014809	.0239857	0.06	0.951	-.0476515	.0506134
_Icountry~27	-.0134454	.0218503	-0.62	0.543	-.0582037	.0313129
_Icountry~28	(dropped)					
_Icountry~29	-.0233266	.0240596	-0.97	0.341	-.0726105	.0259573
_Icountry~30	.0010016	.0188486	0.05	0.958	-.0376079	.0396112
_Icountry~31	(dropped)					
_Icountry~32	-.013597	.0247533	-0.55	0.587	-.0643018	.0371079
_Icountry~33	-.0025982	.0211151	-0.12	0.903	-.0458504	.0406541
_Icountry~34	-.019071	.0096796	-1.97	0.059	-.0388988	.0007568
_Icountry~35	(dropped)					
_Icountry~36	-.0065639	.0149159	-0.44	0.663	-.0371176	.0239899
_Icountry~37	-.0213467	.0190022	-1.12	0.271	-.0602709	.0175776
_Icountry~38	(dropped)					
_Icountry~39	(dropped)					
_Icountry~40	(dropped)					
_Iyearave_2	(dropped)					
_Iyearave_3	(dropped)					
_Iyearave_4	-.0020687	.0039429	-0.52	0.604	-.0101453	.0060079
_Iyearave_5	(dropped)					
_Iyearave_6	.0062466	.0038247	1.63	0.114	-.001588	.0140811
gdifd2	-.0351032	.0252958	-1.39	0.176	-.0869193	.0167129
tremfd1	.0704392	.0371639	1.90	0.068	-.0056876	.146566
opldiff	-.0005131	.0840529	-0.01	0.995	-.1726878	.1716615
opendiff	-.0348387	.0147299	-2.37	0.025	-.0650115	-.0046658
tropfd	1.174538	.570984	2.06	0.049	.00493	2.344146
sgldiff	.0079519	.1022899	0.08	0.939	-.2015793	.2174832
tropsglfd	-309.5321	536.4483	-0.58	0.569	-1408.397	789.3325
sgdiff	-.0179998	.0241825	-0.74	0.463	-.0675353	.0315357
_cons	.0083681	.0324339	0.26	0.798	-.0580698	.074806

Source	SS	df	MS	Number of obs =	70
				F(41, 28) =	21.81
Model	17.5349411	41	.427681491	Prob > F =	0.0000
Residual	.549055455	28	.019609123	R-squared =	0.9696
				Adj R-squared =	0.9252
Total	18.0839966	69	.262086907	Root MSE =	.14003

openbc	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
open	1.32287	.3317192	3.99	0.000	.6433741	2.002366
lending	.1544643	.6337963	0.24	0.809	-1.143809	1.452737
sg	-.0375499	1.363329	-0.03	0.978	-2.830203	2.755103
_Icountry~_2	(dropped)					
_Icountry~_3	-.3085943	.5380658	-0.57	0.571	-1.410772	.7935835
_Icountry~_4	-1.723076	.3132205	-5.50	0.000	-2.364679	-1.081473
_Icountry~_5	(dropped)					
_Icountry~_6	-.3486568	.5514185	-0.63	0.532	-1.478186	.7808729
_Icountry~_7	-.7899619	.3862395	-2.05	0.050	-1.581138	.0012138
_Icountry~_8	.2093334	.3255065	0.64	0.525	-.4574364	.8761032
_Icountry~_9	-.6998009	.4507918	-1.55	0.132	-1.623206	.2236042
_Icountry~10	-.0825126	.5056579	-0.16	0.872	-1.118306	.9532806
_Icountry~11	-.4826223	.4297993	-1.12	0.271	-1.363026	.3977816
_Icountry~12	(dropped)					
_Icountry~13	-.487782	.4716721	-1.03	0.310	-1.453958	.4783944
_Icountry~14	-.839646	.3529532	-2.38	0.024	-1.562638	-.1166542
_Icountry~15	-.1441105	.545701	-0.26	0.794	-1.261928	.9737073
_Icountry~16	-.225571	.4050139	-0.56	0.582	-1.055204	.6040623
_Icountry~17	(dropped)					
_Icountry~18	-.1862376	.3283631	-0.57	0.575	-.858859	.4863837
_Icountry~19	-.4689638	.4354454	-1.08	0.291	-1.360933	.4230056
_Icountry~20	-.3435549	.405547	-0.85	0.404	-1.17428	.4871703
_Icountry~21	-1.696491	.2608856	-6.50	0.000	-2.230891	-1.162092
_Icountry~22	(dropped)					
_Icountry~23	-.5557867	.441065	-1.26	0.218	-1.459267	.3476941
_Icountry~24	-.5273862	.4548199	-1.16	0.256	-1.459043	.4042701
_Icountry~25	-.3222945	.4224602	-0.76	0.452	-1.187665	.543076
_Icountry~26	-.4094957	.4568785	-0.90	0.378	-1.345369	.5263776
_Icountry~27	-.8920842	.4162038	-2.14	0.041	-1.744639	-.0395294
_Icountry~28	(dropped)					
_Icountry~29	-.7891957	.4582869	-1.72	0.096	-1.727954	.1495624
_Icountry~30	-.6258429	.3590268	-1.74	0.092	-1.361276	.1095902
_Icountry~31	(dropped)					
_Icountry~32	.0946163	.4714999	0.20	0.842	-.8712075	1.06044
_Icountry~33	-.6516357	.4021992	-1.62	0.116	-1.475503	.172232
_Icountry~34	-2.113812	.184377	-11.46	0.000	-2.491491	-1.736133
_Icountry~35	(dropped)					
_Icountry~36	.0161234	.2841165	0.06	0.955	-.5658629	.5981097
_Icountry~37	-.9642998	.3619532	-2.66	0.013	-1.705727	-.2228724
_Icountry~38	(dropped)					
_Icountry~39	(dropped)					
_Icountry~40	(dropped)					
_Iyearave_2	(dropped)					
_Iyearave_3	(dropped)					
_Iyearave_4	-.0230902	.0751038	-0.31	0.761	-.1769333	.1307529
_Iyearave_5	(dropped)					
_Iyearave_6	.0001585	.0728529	0.00	0.998	-.149074	.149391
gdifd2	-.8625088	.4818335	-1.79	0.084	-1.8495	.1244823
tremfd1	-.4881682	.7078966	-0.69	0.496	-1.938229	.9618923
opldiff	-.7198358	1.601037	-0.45	0.656	-3.999411	2.55974
opendiff	.0243411	.2805745	0.09	0.931	-.5503896	.5990719
tropfd	.4669562	10.87608	0.04	0.966	-21.81168	22.7456

openbc	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
sgldiff	.8972169	1.948413	0.46	0.649	-3.093926	4.88836
tropsglfd	-6917.857	10218.25	-0.68	0.504	-27848.98	14013.27
sgdiff	-.1994017	.4606263	-0.43	0.668	-1.142952	.7441486
_cons	-.0789144	.6178003	-0.13	0.899	-1.344421	1.186592

Source	SS	df	MS		
Model	.002566505	41	.000062598	Number of obs	= 70
Residual	.000876601	28	.000031307	F(41, 28)	= 2.00
				Prob > F	= 0.0285
				R-squared	= 0.7454
				Adj R-squared	= 0.3726
Total	.003443106	69	.0000499	Root MSE	= .0056

openbctr	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
open	.0135558	.0132545	1.02	0.315	-.0135948	.0407065
lending	.0122999	.0253246	0.49	0.631	-.0395752	.0641749
sg	.0253354	.0544745	0.47	0.645	-.0862506	.1369214
_Icountry~_2	(dropped)					
_Icountry~_3	.0016762	.0214995	0.08	0.938	-.0423635	.0457159
_Icountry~_4	-.0072033	.0125153	-0.58	0.570	-.0328398	.0184332
_Icountry~_5	(dropped)					
_Icountry~_6	.0018591	.022033	0.08	0.933	-.0432735	.0469917
_Icountry~_7	-.002712	.015433	-0.18	0.862	-.034325	.028901
_Icountry~_8	-.0063141	.0130063	-0.49	0.631	-.0329562	.020328
_Icountry~_9	.0022003	.0180123	0.12	0.904	-.0346962	.0390968
_Icountry~10	.0001395	.0202046	0.01	0.995	-.0412477	.0415267
_Icountry~11	.0125713	.0171735	0.73	0.470	-.022607	.0477496
_Icountry~12	(dropped)					
_Icountry~13	.0024214	.0188466	0.13	0.899	-.0361841	.0410269
_Icountry~14	-.0017823	.0141029	-0.13	0.900	-.0306709	.0271063
_Icountry~15	.0072854	.0218046	0.33	0.741	-.0373792	.0519501
_Icountry~16	-.0053484	.0161831	-0.33	0.743	-.038498	.0278013
_Icountry~17	(dropped)					
_Icountry~18	.0226108	.0131204	1.72	0.096	-.0042652	.0494867
_Icountry~19	.0036833	.0173991	0.21	0.834	-.0319571	.0393237
_Icountry~20	-.0007223	.0162044	-0.04	0.965	-.0339156	.032471
_Icountry~21	-.0093836	.0104242	-0.90	0.376	-.0307366	.0119695
_Icountry~22	(dropped)					
_Icountry~23	.0034056	.0176236	0.19	0.848	-.0326948	.039506
_Icountry~24	.0041086	.0181732	0.23	0.823	-.0331176	.0413348
_Icountry~25	.0075931	.0168802	0.45	0.656	-.0269845	.0421707
_Icountry~26	.0085816	.0182555	0.47	0.642	-.0288131	.0459763
_Icountry~27	-.0026372	.0166303	-0.16	0.875	-.0367027	.0314283
_Icountry~28	(dropped)					
_Icountry~29	-.0076494	.0183118	-0.42	0.679	-.0451594	.0298605
_Icountry~30	.0106474	.0143456	0.74	0.464	-.0187383	.0400331
_Icountry~31	(dropped)					
_Icountry~32	.0008282	.0188397	0.04	0.965	-.0377632	.0394197
_Icountry~33	.0058119	.0160707	0.36	0.720	-.0271074	.0387312
_Icountry~34	-.0145352	.0073671	-1.97	0.058	-.0296261	.0005557
_Icountry~35	(dropped)					
_Icountry~36	-.0005988	.0113524	-0.05	0.958	-.0238533	.0226556
_Icountry~37	-.0092414	.0144626	-0.64	0.528	-.0388666	.0203839
_Icountry~38	(dropped)					
_Icountry~39	(dropped)					
_Icountry~40	(dropped)					
_Iyearave_2	(dropped)					
_Iyearave_3	(dropped)					

openbctr	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
_Iyearave_4	-.0006829	.0030009	-0.23	0.822	-.00683	.0054642
_Iyearave_5	(dropped)					
_Iyearave_6	.0026891	.002911	0.92	0.364	-.0032738	.008652
gdifd2	-.0235519	.0192526	-1.22	0.231	-.0629891	.0158853
tremfd1	.0733221	.0282854	2.59	0.015	.015382	.1312621
opldiff	-.0004292	.0639726	-0.01	0.995	-.1314712	.1306128
opendiff	-.018844	.0112109	-1.68	0.104	-.0418085	.0041205
tropfd	.4042416	.4345755	0.93	0.360	-.4859459	1.294429
sgldiff	.0025862	.0778527	0.03	0.974	-.1568879	.1620603
tropsglfd	-179.4056	408.2904	-0.44	0.664	-1015.751	656.9393
sgdiff	-.0081277	.0184052	-0.44	0.662	-.0458291	.0295737
_cons	-.0098349	.0246854	-0.40	0.693	-.0604008	.0407309

IV (2SLS) regression with robust standard errors

Number of obs	= 70
F(11, 28)	= .
Prob > F	= 0.0000
R-squared	= 0.3758
Root MSE	= .09675

Number of clusters (country_1) = 29

gdi	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
gdi1	1.477989	4.466238	0.33	0.743	-7.670685	10.62666
tremit	-7.144737	19.36105	-0.37	0.715	-46.80404	32.51457
opentrem	5.413679	14.83629	0.36	0.718	-24.97707	35.80443
bankcred	.0601695	.6996236	0.09	0.932	-1.372944	1.493284
bctrem	8.789872	40.04708	0.22	0.828	-73.24284	90.82259
openbc	.3433358	1.58275	0.22	0.830	-2.898781	3.585452
openbctr	.0944196	46.48452	0.00	0.998	-95.1248	95.31364
open	-.8349745	2.219472	-0.38	0.710	-5.381357	3.711408
lending	-.1479966	.9545702	-0.16	0.878	-2.103345	1.807352
sg	1.001241	1.103014	0.91	0.372	-1.25818	3.260662
_Icountry~_2	(dropped)					
_Icountry~_3	-1.009084	2.425891	-0.42	0.681	-5.978296	3.960128
_Icountry~_4	-.4283086	1.074304	-0.40	0.693	-2.628921	1.772304
_Icountry~_5	(dropped)					
_Icountry~_6	-1.078154	2.684837	-0.40	0.691	-6.577793	4.421486
_Icountry~_7	-.7652037	1.941785	-0.39	0.697	-4.74277	3.212363
_Icountry~_8	-1.1169	3.281411	-0.34	0.736	-7.838566	5.604766
_Icountry~_9	-.8331325	1.951369	-0.43	0.673	-4.830331	3.164065
_Icountry~10	-1.146316	2.738085	-0.42	0.679	-6.755028	4.462396
_Icountry~11	-.886876	2.092199	-0.42	0.675	-5.172552	3.3988
_Icountry~12	(dropped)					
_Icountry~13	-.8615708	2.123353	-0.41	0.688	-5.211062	3.487921
_Icountry~14	-.6490802	1.957902	-0.33	0.743	-4.65966	3.361499
_Icountry~15	-1.166507	3.070058	-0.38	0.707	-7.455235	5.122222
_Icountry~16	-1.004004	2.633042	-0.38	0.706	-6.397547	4.389539
_Icountry~17	(dropped)					
_Icountry~18	-1.101504	2.56577	-0.43	0.671	-6.357245	4.154238
_Icountry~19	-.9602625	2.256068	-0.43	0.674	-5.581607	3.661082
_Icountry~20	-1.068406	3.014349	-0.35	0.726	-7.24302	5.106209
_Icountry~21	-.4618062	2.644919	-0.17	0.863	-5.879678	4.956065
_Icountry~22	-.7991953	2.937315	-0.27	0.788	-6.816011	5.217621
_Icountry~23	-.8356404	2.260844	-0.37	0.714	-5.46677	3.795489
_Icountry~24	-.9714357	2.476516	-0.39	0.698	-6.044349	4.101478
_Icountry~25	-1.050933	2.692318	-0.39	0.699	-6.565898	4.464031
_Icountry~26	-.9627573	2.585109	-0.37	0.712	-6.258113	4.332599

gdi	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
_Icountry~27	-.6039738	1.708973	-0.35	0.726	-4.104646	2.896698
_Icountry~28	(dropped)					
_Icountry~29	-.7718865	1.957613	-0.39	0.696	-4.781874	3.238101
_Icountry~30	-.8777007	2.125835	-0.41	0.683	-5.232277	3.476875
_Icountry~31	(dropped)					
_Icountry~32	-1.207001	2.863189	-0.42	0.677	-7.071977	4.657975
_Icountry~33	-.7811883	2.16883	-0.36	0.721	-5.223834	3.661457
_Icountry~34	(dropped)					
_Icountry~35	(dropped)					
_Icountry~36	-1.119532	3.252435	-0.34	0.733	-7.781842	5.542778
_Icountry~37	-.7478101	1.80455	-0.41	0.682	-4.444264	2.948644
_Icountry~38	(dropped)					
_Icountry~39	(dropped)					
_Icountry~40	(dropped)					
_Iyearave_2	(dropped)					
_Iyearave_3	(dropped)					
_Iyearave_4	(dropped)					
_Iyearave_5	-.057421	.1445778	-0.40	0.694	-.3535751	.2387331
_Iyearave_6	-.0150556	.0741583	-0.20	0.841	-.166962	.1368509
_cons	1.30417	3.063576	0.43	0.674	-4.971281	7.579621

Instrumented: gdi1 tremit opentrem bankcred bctrem openbc openbctr
Instruments: open lending sg _Icountry_1_2 _Icountry_1_3 _Icountry_1_4 _Icountry_1_5 _Icountry_1_6 _Icountry_1_7 _Icountry_1_8 _Icountry_1_9 _Icountry_1_10 _Icountry_1_11 _Icountry_1_12 _Icountry_1_13 _Icountry_1_14 _Icountry_1_15 _Icountry_1_16 _Icountry_1_17 _Icountry_1_18 _Icountry_1_19 _Icountry_1_20 _Icountry_1_21 _Icountry_1_22 _Icountry_1_23 _Icountry_1_24 _Icountry_1_25 _Icountry_1_26 _Icountry_1_27 _Icountry_1_28 _Icountry_1_29 _Icountry_1_30 _Icountry_1_31 _Icountry_1_32 _Icountry_1_33 _Icountry_1_34 _Icountry_1_35 _Icountry_1_36 _Icountry_1_37 _Icountry_1_38 _Icountry_1_39 _Icountry_1_40 _Iyearave_2 _Iyearave_3 _Iyearave_4 _Iyearave_5 _Iyearave_6 gdifd2 tremfd1 opldiff opendiff tropfd sgldiff tropsglfd sgdiff

```
. test open tremit opentrem bankcred bctrem openbc openbctr;

 ( 1)  open = 0
 ( 2)  tremit = 0
 ( 3)  opentrem = 0
 ( 4)  bankcred = 0
 ( 5)  bctrem = 0
 ( 6)  openbc = 0
 ( 7)  openbctr = 0

       F(  7,    28) =    0.68
            Prob > F =    0.6880


. test tremit opentrem bctrem openbctr;

 ( 1)  tremit = 0
 ( 2)  opentrem = 0
 ( 3)  bctrem = 0
 ( 4)  openbctr = 0

       F(  4,    28) =    0.99
            Prob > F =    0.4315
```

```
. test open opentrem openbc openbctr;

 ( 1)  open = 0
 ( 2)  opentrem = 0
 ( 3)  openbc = 0
 ( 4)  openbctr = 0

       F(  4,    28) =    0.25
            Prob > F =    0.9046

. test bankcred bctrem openbc openbctr;

 ( 1)  bankcred = 0
 ( 2)  bctrem = 0
 ( 3)  openbc = 0
 ( 4)  openbctr = 0

       F(  4,    28) =    0.10
            Prob > F =    0.9826
```

2. Using QMONEY

```
. xi: ivreg gdi open lending sg i.country i.yearave (gdi1 tremit opentrem
qmoney qmurem openqm openqmtr = gdifd2 tremfd1 opldiff opendiff tropfd sgldiff
tropsglfd sgdiff), robust cluster (country_1) first;
i.country_1       _Icountry_1_1-40    (naturally coded; _Icountry_1_1 omitted)
i.yearave         _Iyearave_1-6       (naturally coded; _Iyearave_1 omitted)

First-stage regressions
-----------------------

      Source |       SS       df       MS              Number of obs =      70
-------------+------------------------------           F( 41,    28) =   13.66
       Model |  .575965099    41  .014047929           Prob > F      =  0.0000
    Residual |  .028803231    28  .001028687           R-squared     =  0.9524
-------------+------------------------------           Adj R-squared =  0.8826
       Total |  .604768331    69  .008764758           Root MSE      =  .03207

------------------------------------------------------------------------------
        gdi1 |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
        open |   .0539171   .0759772     0.71   0.484    -.1017151    .2095492
     lending |  -.0069331   .1451651    -0.05   0.962    -.3042903    .2904242
          sg |  -.0331451   .3122577    -0.11   0.916     -.672776    .6064858
_Icountry~_2 |  (dropped)
_Icountry~_3 |  -.0602256   .1232389    -0.49   0.629    -.3126691    .1922179
_Icountry~_4 |   .0248319   .0717402     0.35   0.732    -.1221212    .1717851
_Icountry~_5 |  (dropped)
_Icountry~_6 |   .0123705   .1262972     0.10   0.923    -.2463377    .2710786
_Icountry~_7 |  -.0110726   .0884645    -0.13   0.901     -.192284    .1701388
_Icountry~_8 |    .029592   .0745542     0.40   0.694    -.1231254    .1823093
_Icountry~_9 |   .0014104   .1032496     0.01   0.989    -.2100869    .2129076
_Icountry~10 |  -.0314002   .1158162    -0.27   0.788    -.2686389    .2058385
_Icountry~11 |  -.0692258   .0984415    -0.70   0.488    -.2708741    .1324224
_Icountry~12 |  (dropped)
_Icountry~13 |  -.0753958   .1080321    -0.70   0.491    -.2966895    .1458978
_Icountry~14 |   -.002219   .0808406    -0.03   0.978    -.1678135    .1633755
_Icountry~15 |    .026811   .1249877     0.21   0.832    -.2292147    .2828367
_Icountry~16 |  -.0119822   .0927646    -0.13   0.898     -.202002    .1780375
_Icountry~17 |  (dropped)
_Icountry~18 |   -.009923   .0752085    -0.13   0.896    -.1639806    .1441346
_Icountry~19 |  -.0491319   .0997347    -0.49   0.626    -.2534291    .1551653
_Icountry~20 |   .1132631   .0928867     1.22   0.233    -.0770068    .3035329
```

gdi1	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
_Icountry~21	.365418	.0597534	6.12	0.000	.2430187	.4878173
_Icountry~22	(dropped)					
_Icountry~23	-.0194374	.1010218	-0.19	0.849	-.2263712	.1874964
_Icountry~24	-.0048424	.1041722	-0.05	0.963	-.2182296	.2085447
_Icountry~25	-.0027832	.0967606	-0.03	0.977	-.2009882	.1954218
_Icountry~26	-.0027445	.1046437	-0.03	0.979	-.2170975	.2116085
_Icountry~27	-.0554069	.0953276	-0.58	0.566	-.2506766	.1398628
_Icountry~28	(dropped)					
_Icountry~29	-.0052194	.1049663	-0.05	0.961	-.2202331	.2097943
_Icountry~30	-.0308153	.0822317	-0.37	0.711	-.1992594	.1376287
_Icountry~31	(dropped)					
_Icountry~32	-.0680704	.1079926	-0.63	0.534	-.2892833	.1531425
_Icountry~33	.0003513	.0921199	0.00	0.997	-.1883479	.1890504
_Icountry~34	-.0408652	.0422298	-0.97	0.341	-.1273691	.0456386
_Icountry~35	(dropped)					
_Icountry~36	.0797833	.0650742	1.23	0.230	-.0535152	.2130818
_Icountry~37	-.0316623	.082902	-0.38	0.705	-.2014793	.1381547
_Icountry~38	(dropped)					
_Icountry~39	(dropped)					
_Icountry~40	(dropped)					
_Iyearave_2	(dropped)					
_Iyearave_3	(dropped)					
_Iyearave_4	-.0209039	.0172018	-1.22	0.234	-.0561403	.0143324
_Iyearave_5	(dropped)					
_Iyearave_6	-.0224804	.0166863	-1.35	0.189	-.0566607	.0116999
gdifd2	.1533038	.1103594	1.39	0.176	-.0727573	.3793648
tremfd1	-.0579936	.1621371	-0.36	0.723	-.3901164	.2741292
opldiff	.2295635	.3667025	0.63	0.536	-.5215924	.9807195
opendiff	.0636232	.0642629	0.99	0.331	-.0680135	.1952599
tropfd	-1.623744	2.491064	-0.65	0.520	-6.726458	3.478969
sgldiff	.1640356	.4462657	0.37	0.716	-.7500982	1.078169
tropsglfd	-18.54107	2340.393	-0.01	0.994	-4812.619	4775.537
sgdiff	.0107649	.1055021	0.10	0.919	-.2053464	.2268762
_cons	.2085837	.1415014	1.47	0.152	-.0812687	.4984361

Source	SS	df	MS		Number of obs	=	70
					F(41, 28)	=	7.29
Model	.053627455	41	.001307987		Prob > F	=	0.0000
Residual	.005026692	28	.000179525		R-squared	=	0.9143
					Adj R-squared	=	0.7888
Total	.058654147	69	.00085006		Root MSE	=	.0134

tremit	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
open	.0074439	.0317398	0.23	0.816	-.057572	.0724599
lending	-.0123459	.0606433	-0.20	0.840	-.1365681	.1118762
sg	.2304106	.1304469	1.77	0.088	-.0367977	.497619
_Icountry~_2	(dropped)					
_Icountry~_3	-.000607	.0514835	-0.01	0.991	-.1060663	.1048522
_Icountry~_4	-.0408823	.0299698	-1.36	0.183	-.1022725	.020508
_Icountry~_5	(dropped)					
_Icountry~_6	-.003151	.0527612	-0.06	0.953	-.1112274	.1049253
_Icountry~_7	-.009313	.0369564	-0.25	0.803	-.0850148	.0663888
_Icountry~_8	-.0221509	.0311453	-0.71	0.483	-.0859492	.0416474
_Icountry~_9	-.0060415	.0431329	-0.14	0.890	-.0943953	.0823123
_Icountry~10	-.0146087	.0483827	-0.30	0.765	-.1137161	.0844987

tremit	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
_Icountry~11	.0360768	.0411243	0.88	0.388	-.0481626	.1203161
_Icountry~12	(dropped)					
_Icountry~13	.0068109	.0451308	0.15	0.881	-.0856354	.0992572
_Icountry~14	-.0064459	.0337715	-0.19	0.850	-.0756237	.0627318
_Icountry~15	.0043679	.0522141	0.08	0.934	-.1025879	.1113236
_Icountry~16	-.0253171	.0387528	-0.65	0.519	-.1046985	.0540644
_Icountry~17	(dropped)					
_Icountry~18	.0241718	.0314186	0.77	0.448	-.0401863	.08853
_Icountry~19	.0010962	.0416646	0.03	0.979	-.0842498	.0864421
_Icountry~20	-.0233681	.0388038	-0.60	0.552	-.1028541	.0561179
_Icountry~21	-.1442182	.0249622	-5.78	0.000	-.1953509	-.0930854
_Icountry~22	(dropped)					
_Icountry~23	.0057172	.0422023	0.14	0.893	-.0807302	.0921646
_Icountry~24	-.0020258	.0435184	-0.05	0.963	-.0911691	.0871175
_Icountry~25	.0032178	.0404221	0.08	0.937	-.0795831	.0860187
_Icountry~26	.0174306	.0437153	0.40	0.693	-.0721162	.1069774
_Icountry~27	-.006283	.0398235	-0.16	0.876	-.0878576	.0752917
_Icountry~28	(dropped)					
_Icountry~29	-.0275074	.0438501	-0.63	0.536	-.1173302	.0623155
_Icountry~30	.0095066	.0343526	0.28	0.784	-.0608616	.0798747
_Icountry~31	(dropped)					
_Icountry~32	-.0158707	.0451143	-0.35	0.728	-.1082833	.0765418
_Icountry~33	.015269	.0384835	0.40	0.695	-.0635608	.0940988
_Icountry~34	-.027027	.0176417	-1.53	0.137	-.0631643	.0091104
_Icountry~35	(dropped)					
_Icountry~36	-.0081492	.027185	-0.30	0.767	-.0638352	.0475368
_Icountry~37	-.0428104	.0346326	-1.24	0.227	-.1137521	.0281313
_Icountry~38	(dropped)					
_Icountry~39	(dropped)					
_Icountry~40	(dropped)					
_Iyearave_2	(dropped)					
_Iyearave_3	(dropped)					
_Iyearave_4	.0011775	.0071861	0.16	0.871	-.0135426	.0158976
_Iyearave_5	(dropped)					
_Iyearave_6	.0119934	.0069708	1.72	0.096	-.0022856	.0262723
gdifd2	-.0696327	.0461031	-1.51	0.142	-.1640706	.0248052
tremfd1	.2744751	.0677334	4.05	0.000	.1357295	.4132207
opldiff	.0174502	.1531914	0.11	0.910	-.2963481	.3312486
opendiff	-.0806851	.0268461	-3.01	0.006	-.1356768	-.0256934
tropfd	2.09703	1.040652	2.02	0.054	-.0346485	4.228708
sgldiff	.3916617	.1864292	2.10	0.045	.0097788	.7735447
tropsglfd	-2430.716	977.7084	-2.49	0.019	-4433.461	-427.9715
sgdiff	-.0869731	.0440739	-1.97	0.058	-.1772545	.0033082
_cons	.0160476	.0591127	0.27	0.788	-.1050393	.1371346

Source	SS	df	MS		
Model	.078146357	41	.001906009	Number of obs	= 70
Residual	.004201286	28	.000150046	F(41, 28)	= 12.70
				Prob > F	= 0.0000
				R-squared	= 0.9490
				Adj R-squared	= 0.8743
Total	.082347642	69	.001193444	Root MSE	= .01225

opentrem	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
open	.0393638	.0290171	1.36	0.186	-.0200749	.0988026
lending	-.0052893	.0554412	-0.10	0.925	-.1188555	.1082769
sg	.17221	.1192569	1.44	0.160	-.0720768	.4164968
_Icountry~_2	(dropped)					

opentrem	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
_Icountry~_3	.0382203	.0470672	0.81	0.424	-.0581925	.1346331
_Icountry~_4	-.0068445	.0273989	-0.25	0.805	-.0629686	.0492796
_Icountry~_5	(dropped)					
_Icountry~_6	.0423074	.0482352	0.88	0.388	-.056498	.1411128
_Icountry~_7	.0221483	.0337862	0.66	0.517	-.0470597	.0913562
_Icountry~_8	.0096837	.0284736	0.34	0.736	-.0486419	.0680092
_Icountry~_9	.0272124	.0394329	0.69	0.496	-.0535623	.107987
_Icountry~10	.0436444	.0442323	0.99	0.332	-.0469614	.1342502
_Icountry~11	.0508683	.0375966	1.35	0.187	-.0261449	.1278815
_Icountry~12	(dropped)					
_Icountry~13	.0398155	.0412594	0.97	0.343	-.0447006	.1243316
_Icountry~14	.0189342	.0308745	0.61	0.545	-.0443094	.0821777
_Icountry~15	.04608	.0477351	0.97	0.343	-.0517009	.1438609
_Icountry~16	.0143262	.0354285	0.40	0.689	-.0582459	.0868982
_Icountry~17	(dropped)					
_Icountry~18	.0106781	.0287235	0.37	0.713	-.0481593	.0695156
_Icountry~19	.0332763	.0380905	0.87	0.390	-.0447486	.1113011
_Icountry~20	.015505	.0354751	0.44	0.665	-.0571625	.0881725
_Icountry~21	-.1776577	.0228209	-7.78	0.000	-.2244042	-.1309111
_Icountry~22	(dropped)					
_Icountry~23	.0326311	.0385821	0.85	0.405	-.0464007	.1116629
_Icountry~24	.0368004	.0397853	0.92	0.363	-.0446961	.1182968
_Icountry~25	.0378549	.0369546	1.02	0.314	-.0378432	.1135531
_Icountry~26	.0467992	.0399654	1.17	0.251	-.0350661	.1286646
_Icountry~27	.0241279	.0364073	0.66	0.513	-.0504492	.0987049
_Icountry~28	(dropped)					
_Icountry~29	.0093258	.0400886	0.23	0.818	-.0727919	.0914435
_Icountry~30	.0395978	.0314058	1.26	0.218	-.024734	.1039297
_Icountry~31	(dropped)					
_Icountry~32	.0286826	.0412444	0.70	0.493	-.0558027	.1131678
_Icountry~33	.0436224	.0351823	1.24	0.225	-.0284452	.1156901
_Icountry~34	-.0133745	.0161283	-0.83	0.414	-.0464119	.0196629
_Icountry~35	(dropped)					
_Icountry~36	.0156467	.024853	0.63	0.534	-.0352625	.0665558
_Icountry~37	-.0063642	.0316618	-0.20	0.842	-.0712204	.058492
_Icountry~38	(dropped)					
_Icountry~39	(dropped)					
_Icountry~40	(dropped)					
_Iyearave_2	(dropped)					
_Iyearave_3	(dropped)					
_Iyearave_4	.0057833	.0065697	0.88	0.386	-.0076741	.0192407
_Iyearave_5	(dropped)					
_Iyearave_6	.0060306	.0063728	0.95	0.352	-.0070235	.0190846
gdifd2	-.0180426	.0421483	-0.43	0.672	-.1043794	.0682943
tremfd1	.4042083	.0619231	6.53	0.000	.2773645	.5310521
opldiff	.0265997	.1400504	0.19	0.851	-.2602805	.3134799
opendiff	-.0614533	.0245432	-2.50	0.018	-.1117277	-.0111788
tropfd	.8943904	.951383	0.94	0.355	-1.054429	2.84321
sgldiff	.356746	.170437	2.09	0.046	.0076215	.7058704
tropsglfd	-2060.532	893.8391	-2.31	0.029	-3891.478	-229.5854
sgdiff	-.0667082	.0402932	-1.66	0.109	-.1492451	.0158287
_cons	-.0458348	.054042	-0.85	0.404	-.1565347	.0648652

Source	SS	df	MS	Number of obs =	70
				F(41, 28) =	32.51
Model	3.79640588	41	.092595265	Prob > F =	0.0000
Residual	.079752349	28	.002848298	R-squared =	0.9794
				Adj R-squared =	0.9493
Total	3.87615823	69	.056176206	Root MSE =	.05337

qmoney	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
open	.3658605	.1264254	2.89	0.007	.1068899	.6248311
lending	.6866899	.2415535	2.84	0.008	.19189	1.18149
sg	.2146056	.5195942	0.41	0.683	-.8497349	1.278946
_Icountry~_2	(dropped)					
_Icountry~_3	-.1469187	.2050685	-0.72	0.480	-.5669825	.2731452
_Icountry~_4	-.2438961	.1193751	-2.04	0.051	-.4884249	.0006327
_Icountry~_5	(dropped)					
_Icountry~_6	-.1542007	.2101576	-0.73	0.469	-.5846889	.2762876
_Icountry~_7	-.2256003	.1472042	-1.53	0.137	-.5271345	.075934
_Icountry~_8	.4705044	.1240576	3.79	0.001	.2163839	.7246248
_Icountry~_9	-.3122481	.1718065	-1.82	0.080	-.6641777	.0396816
_Icountry~10	.3513373	.1927172	1.82	0.079	-.043426	.7461005
_Icountry~11	-.3393643	.1638058	-2.07	0.048	-.6749053	-.0038233
_Icountry~12	(dropped)					
_Icountry~13	-.1222108	.1797644	-0.68	0.502	-.4904415	.24602
_Icountry~14	-.1839253	.1345181	-1.37	0.182	-.4594731	.0916226
_Icountry~15	.1980412	.2079785	0.95	0.349	-.2279834	.6240658
_Icountry~16	.5642072	.1543596	3.66	0.001	.248016	.8803985
_Icountry~17	(dropped)					
_Icountry~18	.423486	.1251463	3.38	0.002	.1671354	.6798365
_Icountry~19	-.0919397	.1659577	-0.55	0.584	-.4318885	.2480092
_Icountry~20	.0632145	.1545627	0.41	0.686	-.2533929	.3798219
_Icountry~21	-.4064422	.0994291	-4.09	0.000	-.6101136	-.2027708
_Icountry~22	(dropped)					
_Icountry~23	-.1911437	.1680994	-1.14	0.265	-.5354798	.1531924
_Icountry~24	-.0894576	.1733417	-0.52	0.610	-.444532	.2656168
_Icountry~25	.1713566	.1610088	1.06	0.296	-.1584549	.5011681
_Icountry~26	-.0045541	.1741263	-0.03	0.979	-.3612357	.3521275
_Icountry~27	-.2642218	.1586243	-1.67	0.107	-.5891489	.0607053
_Icountry~28	(dropped)					
_Icountry~29	-.3820985	.1746631	-2.19	0.037	-.7398795	-.0243175
_Icountry~30	-.0040151	.1368329	-0.03	0.977	-.2843046	.2762744
_Icountry~31	(dropped)					
_Icountry~32	.1971422	.1796988	1.10	0.282	-.1709542	.5652385
_Icountry~33	-.1155033	.1532868	-0.75	0.457	-.4294971	.1984905
_Icountry~34	-.4928324	.0702701	-7.01	0.000	-.6367741	-.3488908
_Icountry~35	(dropped)					
_Icountry~36	.3308202	.108283	3.06	0.005	.1090126	.5526278
_Icountry~37	-.4320724	.1379482	-3.13	0.004	-.7146465	-.1494983
_Icountry~38	(dropped)					
_Icountry~39	(dropped)					
_Icountry~40	(dropped)					
_Iyearave_2	(dropped)					
_Iyearave_3	(dropped)					
_Iyearave_4	-.0285275	.0286237	-1.00	0.327	-.0871604	.0301054
_Iyearave_5	(dropped)					
_Iyearave_6	.0392708	.0277658	1.41	0.168	-.0176049	.0961465
gdifd2	.0309237	.1836372	0.17	0.867	-.34524	.4070873
tremfd1	.6612908	.2697947	2.45	0.021	.1086413	1.21394
opldiff	-1.003737	.6101898	-1.64	0.111	-2.253654	.2461803
opendiff	-.0118984	.106933	-0.11	0.912	-.2309407	.207144
tropfd	1.100138	4.14511	0.27	0.793	-7.390734	9.59101

qmoney	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
sgldiff	1.494276	.7425824	2.01	0.054	-.0268353	3.015387
tropsglfd	-5410.262	3894.395	-1.39	0.176	-13387.57	2567.045
sgdiff	-.2438196	.1755547	-1.39	0.176	-.6034271	.1157878
_cons	.0388706	.2354571	0.17	0.870	-.4434414	.5211825

Source	SS	df	MS			
Model	.00476252	41	.000116159	Number of obs	=	70
Residual	.000770769	28	.000027527	F(41, 28)	=	4.22
Total	.00553329	69	.000080193	Prob > F	=	0.0001
				R-squared	=	0.8607
				Adj R-squared	=	0.6567
				Root MSE	=	.00525

qmtrem	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
open	.0042545	.0124287	0.34	0.735	-.0212044	.0297135
lending	.0107722	.0237467	0.45	0.654	-.0378708	.0594152
sg	.0811775	.0510805	1.59	0.123	-.0234561	.1858111
_Icountry~_2	(dropped)					
_Icountry~_3	-.0053377	.02016	-0.26	0.793	-.0466335	.0359581
_Icountry~_4	-.0168135	.0117356	-1.43	0.163	-.0408528	.0072257
_Icountry~_5	(dropped)					
_Icountry~_6	-.0061743	.0206602	-0.30	0.767	-.0484949	.0361463
_Icountry~_7	-.0073467	.0144714	-0.51	0.616	-.03699	.0222967
_Icountry~_8	-.0107489	.0121959	-0.88	0.386	-.0357311	.0142333
_Icountry~_9	-.0094572	.01689	-0.56	0.580	-.0440548	.0251405
_Icountry~10	-.0116139	.0189457	-0.61	0.545	-.0504224	.0271947
_Icountry~11	-.0066124	.0161035	-0.41	0.684	-.0395989	.0263741
_Icountry~12	(dropped)					
_Icountry~13	-.0023383	.0176723	-0.13	0.896	-.0385385	.0338619
_Icountry~14	-.0049738	.0132243	-0.38	0.710	-.0320625	.0221148
_Icountry~15	.0015655	.020446	0.08	0.940	-.0403163	.0434473
_Icountry~16	-.0134188	.0151748	-0.88	0.384	-.044503	.0176655
_Icountry~17	(dropped)					
_Icountry~18	.0339979	.0123029	2.76	0.010	.0087965	.0591993
_Icountry~19	-.0026737	.016315	-0.16	0.871	-.0360935	.0307461
_Icountry~20	-.0090375	.0151948	-0.59	0.557	-.0401627	.0220876
_Icountry~21	-.045616	.0097747	-4.67	0.000	-.0656386	-.0255934
_Icountry~22	(dropped)					
_Icountry~23	-.0014411	.0165256	-0.09	0.931	-.0352923	.03241
_Icountry~24	-.0025171	.0170409	-0.15	0.884	-.0374239	.0323897
_Icountry~25	.0019422	.0158285	0.12	0.903	-.030481	.0343654
_Icountry~26	.0049852	.0171181	0.29	0.773	-.0300795	.04005
_Icountry~27	-.0060473	.0155941	-0.39	0.701	-.0379904	.0258957
_Icountry~28	(dropped)					
_Icountry~29	-.014716	.0171708	-0.86	0.399	-.0498889	.0204569
_Icountry~30	.0044172	.0134518	0.33	0.745	-.0231376	.031972
_Icountry~31	(dropped)					
_Icountry~32	-.0073866	.0176659	-0.42	0.679	-.0435736	.0288004
_Icountry~33	.001754	.0150694	0.12	0.908	-.0291142	.0326223
_Icountry~34	-.0140251	.0069081	-2.03	0.052	-.0281758	.0001256
_Icountry~35	(dropped)					
_Icountry~36	-.0038332	.0106451	-0.36	0.721	-.0256387	.0179724
_Icountry~37	-.0150524	.0135615	-1.11	0.276	-.0428318	.012727
_Icountry~38	(dropped)					
_Icountry~39	(dropped)					
_Icountry~40	(dropped)					
_Iyearave_2	(dropped)					
_Iyearave_3	(dropped)					

qmtrem	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
_Iyearave_4	-.0013228	.0028139	-0.47	0.642	-.0070869	.0044413
_Iyearave_5	(dropped)					
_Iyearave_6	.0049077	.0027296	1.80	0.083	-.0006837	.0104991
gdifd2	-.0247532	.0180531	-1.37	0.181	-.0617332	.0122269
tremfd1	.0665992	.0265231	2.51	0.018	.0122691	.1209293
opldiff	.0009433	.0599868	0.02	0.988	-.121934	.1238206
opendiff	-.031974	.0105124	-3.04	0.005	-.0535077	-.0104403
tropfd	1.022731	.407499	2.51	0.018	.1880073	1.857455
sgldiff	.0843009	.0730021	1.15	0.258	-.065237	.2338389
tropsglfd	-671.3902	382.8516	-1.75	0.090	-1455.626	112.8458
sgdiff	-.0233323	.0172585	-1.35	0.187	-.0586847	.0120201
_cons	.0043791	.0231474	0.19	0.851	-.0430362	.0517944

Source	SS	df	MS		
Model	5.9199121	41	.1443881	Number of obs	= 70
Residual	.107764462	28	.003848731	F(41, 28)	= 37.52
				Prob > F	= 0.0000
				R-squared	= 0.9821
				Adj R-squared	= 0.9559
Total	6.02767657	69	.087357631	Root MSE	= .06204

openqm	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
open	1.045115	.1469604	7.11	0.000	.7440805	1.34615
lending	.5210113	.2807886	1.86	0.074	-.054158	1.096181
sg	.007672	.6039908	0.01	0.990	-1.229547	1.244891
_Icountry~_2	(dropped)					
_Icountry~_3	.0970397	.2383774	0.41	0.687	-.3912542	.5853337
_Icountry~_4	-.2377642	.138765	-1.71	0.098	-.5220113	.0464829
_Icountry~_5	(dropped)					
_Icountry~_6	.1637787	.244293	0.67	0.508	-.3366328	.6641903
_Icountry~_7	-.1498311	.1711143	-0.88	0.389	-.5003429	.2006807
_Icountry~_8	.44073	.144208	3.06	0.005	.1453334	.7361267
_Icountry~_9	-.1954646	.1997127	-0.98	0.336	-.6045575	.2136283
_Icountry~10	.4160873	.2240198	1.86	0.074	-.0427965	.8749711
_Icountry~11	-.0951708	.1904125	-0.50	0.621	-.4852131	.2948714
_Icountry~12	(dropped)					
_Icountry~13	.1225282	.2089632	0.59	0.562	-.3055135	.5505699
_Icountry~14	-.1467106	.1563676	-0.94	0.356	-.4670152	.1735939
_Icountry~15	.3708712	.24176	1.53	0.136	-.1243517	.8660941
_Icountry~16	.5100982	.1794319	2.84	0.008	.1425486	.8776477
_Icountry~17	(dropped)					
_Icountry~18	.4079206	.1454736	2.80	0.009	.1099315	.7059097
_Icountry~19	.0426375	.1929138	0.22	0.827	-.3525286	.4378036
_Icountry~20	.1464743	.179668	0.82	0.422	-.221559	.5145076
_Icountry~21	-.5226764	.1155792	-4.52	0.000	-.7594296	-.2859231
_Icountry~22	(dropped)					
_Icountry~23	.0113369	.1954035	0.06	0.954	-.388929	.4116028
_Icountry~24	.088264	.2014972	0.44	0.665	-.3244844	.5010124
_Icountry~25	.222751	.1871611	1.19	0.244	-.1606311	.6061331
_Icountry~26	.1586754	.2024093	0.78	0.440	-.2559413	.573292
_Icountry~27	-.1893999	.1843893	-1.03	0.313	-.5671043	.1883044
_Icountry~28	(dropped)					
_Icountry~29	-.2350348	.2030332	-1.16	0.257	-.6509294	.1808599
_Icountry~30	.0292748	.1590584	0.18	0.855	-.2965416	.3550911
_Icountry~31	(dropped)					
_Icountry~32	.265128	.2088869	1.27	0.215	-.1627575	.6930135
_Icountry~33	-.0464774	.1781849	-0.26	0.796	-.4114726	.3185178
_Icountry~34	-.7831291	.0816839	-9.59	0.000	-.950451	-.6158073

openqm	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
_Icountry~35	(dropped)					
_Icountry~36	.3356723	.1258711	2.67	0.013	.077837	.5935076
_Icountry~37	-.3794136	.1603548	-2.37	0.025	-.7078856	-.0509416
_Icountry~38	(dropped)					
_Icountry~39	(dropped)					
_Icountry~40	(dropped)					
_Iyearave_2	(dropped)					
_Iyearave_3	(dropped)					
_Iyearave_4	.0179858	.033273	0.54	0.593	-.0501708	.0861424
_Iyearave_5	(dropped)					
_Iyearave_6	.0168468	.0322758	0.52	0.606	-.0492672	.0829607
gdifd2	-.0398217	.213465	-0.19	0.853	-.4770849	.3974415
tremfd1	.7675705	.313617	2.45	0.021	.1251553	1.409986
opldiff	-.8815795	.7093017	-1.24	0.224	-2.334518	.5713593
opendiff	.0209355	.1243019	0.17	0.867	-.2336854	.2755565
tropfd	-2.054334	4.818391	-0.43	0.673	-11.92436	7.815693
sgldiff	1.565841	.8631985	1.81	0.080	-.2023408	3.334023
tropsglfd	-5920.172	4526.953	-1.31	0.202	-15193.22	3352.871
sgdiff	-.3111621	.2040697	-1.52	0.139	-.7291799	.1068556
_cons	-.6167456	.2737019	-2.25	0.032	-1.177399	-.0560927

Source	SS	df	MS		
Model	.006753549	41	.000164721	Number of obs	= 70
Residual	.00053172	28	.00001899	F(41, 28)	= 8.67
				Prob > F	= 0.0000
				R-squared	= 0.9270
				Adj R-squared	= 0.8201
Total	.007285269	69	.000105584	Root MSE	= .00436

openqmtr	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
open	.0148405	.0103229	1.44	0.162	-.0063051	.0359861
lending	.0038911	.0197235	0.20	0.845	-.0365106	.0442927
sg	.0570496	.0424262	1.34	0.190	-.0298565	.1439556
_Icountry~_2	(dropped)					
_Icountry~_3	.0102148	.0167444	0.61	0.547	-.0240845	.0445141
_Icountry~_4	-.0045592	.0097473	-0.47	0.644	-.0245256	.0154072
_Icountry~_5	(dropped)					
_Icountry~_6	.0111997	.0171599	0.65	0.519	-.0239507	.0463502
_Icountry~_7	.0047767	.0120196	0.40	0.694	-.0198444	.0293977
_Icountry~_8	-.0000766	.0101296	-0.01	0.994	-.0208262	.020673
_Icountry~_9	.0056623	.0140284	0.40	0.690	-.0230736	.0343983
_Icountry~10	.009588	.0157358	0.61	0.547	-.0226454	.0418215
_Icountry~11	.0062012	.0133752	0.46	0.646	-.0211965	.033599
_Icountry~12	(dropped)					
_Icountry~13	.0107619	.0146782	0.73	0.470	-.0193051	.0408289
_Icountry~14	.0041747	.0109837	0.38	0.707	-.0183244	.0266739
_Icountry~15	.0149555	.016982	0.88	0.386	-.0198305	.0497415
_Icountry~16	.0011508	.0126038	0.09	0.928	-.024667	.0269686
_Icountry~17	(dropped)					
_Icountry~18	.0328529	.0102185	3.22	0.003	.0119213	.0537846
_Icountry~19	.0093782	.0135509	0.69	0.495	-.0183795	.0371359
_Icountry~20	.0041172	.0126204	0.33	0.747	-.0217346	.0299689
_Icountry~21	-.0511987	.0081186	-6.31	0.000	-.067829	-.0345684
_Icountry~22	(dropped)					
_Icountry~23	.0091759	.0137257	0.67	0.509	-.01894	.0372918
_Icountry~24	.0105385	.0141538	0.74	0.463	-.0184542	.0395312
_Icountry~25	.0125452	.0131468	0.95	0.348	-.0143847	.0394752

openqmtr	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
_Icountry~26	.0145935	.0142179	1.03	0.313	-.0145305	.0437174
_Icountry~27	.0053746	.0129521	0.41	0.681	-.0211565	.0319057
_Icountry~28	(dropped)					
_Icountry~29	.000768	.0142617	0.05	0.957	-.0284457	.0299817
_Icountry~30	.0147559	.0111728	1.32	0.197	-.0081305	.0376422
_Icountry~31	(dropped)					
_Icountry~32	.0080855	.0146729	0.55	0.586	-.0219705	.0381415
_Icountry~33	.0117449	.0125163	0.94	0.356	-.0138935	.0373833
_Icountry~34	-.0087553	.0057377	-1.53	0.138	-.0205085	.0029979
_Icountry~35	(dropped)					
_Icountry~36	.0036655	.0088416	0.41	0.682	-.0144456	.0217766
_Icountry~37	-.0029865	.0112638	-0.27	0.793	-.0260594	.0200864
_Icountry~38	(dropped)					
_Icountry~39	(dropped)					
_Icountry~40	(dropped)					
_Iyearave_2	(dropped)					
_Iyearave_3	(dropped)					
_Iyearave_4	.0006981	.0023372	0.30	0.767	-.0040894	.0054856
_Iyearave_5	(dropped)					
_Iyearave_6	.0021326	.0022672	0.94	0.355	-.0025115	.0067766
gdifd2	-.0121843	.0149944	-0.81	0.423	-.042899	.0185304
tremfd1	.0914519	.0220294	4.15	0.000	.0463267	.1365771
opldiff	.0061928	.0498235	0.12	0.902	-.0958661	.1082517
opendiff	-.0208793	.0087313	-2.39	0.024	-.0387647	-.002994
tropfd	.455302	.3384586	1.35	0.189	-.2379991	1.148603
sgldiff	.0774643	.0606337	1.28	0.212	-.0467383	.2016668
tropsglfd	-541.0457	317.9871	-1.70	0.100	-1192.413	110.3214
sgdiff	-.0165265	.0143345	-1.15	0.259	-.0458893	.0128364
_cons	-.0153732	.0192257	-0.80	0.431	-.0547552	.0240088

IV (2SLS) regression with robust standard errors

Number of obs = 70
F(11, 28) = .
Prob > F = 0.0000
R-squared = 0.7740
Root MSE = .05822

Number of clusters (country_1) = 29

gdi	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
gdi1	-.4322082	2.086748	-0.21	0.837	-4.706717	3.842301
tremit	-5.615794	10.34459	-0.54	0.592	-26.80573	15.57415
opentrem	4.459253	17.39426	0.26	0.800	-31.17127	40.08977
qmoney	-1.093434	1.645178	-0.66	0.512	-4.463429	2.276561
qmtrem	9.332747	34.23903	0.27	0.787	-60.80274	79.46823
openqm	1.124601	2.005825	0.56	0.579	-2.984144	5.233346
openqmtr	-5.182613	86.91402	-0.06	0.953	-183.2179	172.8527
open	-.9111108	1.903467	-0.48	0.636	-4.810186	2.987965
lending	.2115126	.9344955	0.23	0.823	-1.702715	2.12574
sg	1.110235	.8443032	1.31	0.199	-.6192412	2.839712
_Icountry~_2	(dropped)					
_Icountry~_3	-.8453251	1.564194	-0.54	0.593	-4.049431	2.358781
_Icountry~_4	-.444155	1.077036	-0.41	0.683	-2.650364	1.762054
_Icountry~_5	(dropped)					
_Icountry~_6	-.8878142	1.798959	-0.49	0.625	-4.572815	2.797187
_Icountry~_7	-.5554017	1.204129	-0.46	0.648	-3.021949	1.911146
_Icountry~_8	-.3259054	1.669991	-0.20	0.847	-3.746726	3.094915
_Icountry~_9	-.5669779	1.171836	-0.48	0.632	-2.967375	1.833419

gdi	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
_Icountry~10	-.6357008	1.806289	-0.35	0.728	-4.335717	3.064315
_Icountry~11	-.6880981	.8063454	-0.85	0.401	-2.339822	.9636256
_Icountry~12	(dropped)					
_Icountry~13	-.8495921	1.523121	-0.56	0.581	-3.969564	2.27038
_Icountry~14	-.3857532	1.1786	-0.33	0.746	-2.800006	2.0285
_Icountry~15	-.68045	2.097192	-0.32	0.748	-4.976353	3.615453
_Icountry~16	-.4288739	1.709737	-0.25	0.804	-3.931112	3.073364
_Icountry~17	(dropped)					
_Icountry~18	-.5595983	3.446072	-0.16	0.872	-7.618557	6.49936
_Icountry~19	-.7213531	1.451042	-0.50	0.623	-3.693678	2.250972
_Icountry~20	-.4197511	1.806757	-0.23	0.818	-4.120726	3.281223
_Icountry~21	.4037061	1.204322	0.34	0.740	-2.063235	2.870648
_Icountry~22	-.1947134	1.208027	-0.16	0.873	-2.669244	2.279817
_Icountry~23	-.6697355	1.468681	-0.46	0.652	-3.678191	2.33872
_Icountry~24	-.7087479	1.618701	-0.44	0.665	-4.024507	2.607011
_Icountry~25	-.5428592	1.788352	-0.30	0.764	-4.206133	3.120414
_Icountry~26	-.6266139	1.713949	-0.37	0.717	-4.137479	2.884251
_Icountry~27	-.5180872	1.076746	-0.48	0.634	-2.7237	1.687526
_Icountry~28	(dropped)					
_Icountry~29	-.6450319	1.196686	-0.54	0.594	-3.096332	1.806268
_Icountry~30	-.5200032	1.61796	-0.32	0.750	-3.834243	2.794237
_Icountry~31	(dropped)					
_Icountry~32	-.6844629	1.693117	-0.40	0.689	-4.152655	2.783729
_Icountry~33	-.4423494	1.325048	-0.33	0.741	-3.156588	2.271889
_Icountry~34	(dropped)					
_Icountry~35	(dropped)					
_Icountry~36	-.3231205	1.764137	-0.18	0.856	-3.936792	3.290551
_Icountry~37	-.6259286	.9837566	-0.64	0.530	-2.641063	1.389205
_Icountry~38	(dropped)					
_Icountry~39	(dropped)					
_Icountry~40	(dropped)					
_Iyearave_2	(dropped)					
_Iyearave_3	(dropped)					
_Iyearave_4	(dropped)					
_Iyearave_5	.0446716	.0475879	0.94	0.356	-.0528077	.142151
_Iyearave_6	.0763636	.0549008	1.39	0.175	-.0360957	.1888229
_cons	1.592386	2.393721	0.67	0.511	-3.310929	6.495701

Instrumented: gdi1 tremit opentrem qmoney qmtrem openqm openqmtr
Instruments: open lending sg _Icountry_1_2 _Icountry_1_3 _Icountry_1_4
_Icountry_1_5 _Icountry_1_6 _Icountry_1_7 _Icountry_1_8
_Icountry_1_9 _Icountry_1_10 _Icountry_1_11 _Icountry_1_12
_Icountry_1_13 _Icountry_1_14 _Icountry_1_15 _Icountry_1_16
_Icountry_1_17 _Icountry_1_18 _Icountry_1_19 _Icountry_1_20
_Icountry_1_21 _Icountry_1_22 _Icountry_1_23 _Icountry_1_24
_Icountry_1_25 _Icountry_1_26 _Icountry_1_27 _Icountry_1_28
_Icountry_1_29 _Icountry_1_30 _Icountry_1_31 _Icountry_1_32
_Icountry_1_33 _Icountry_1_34 _Icountry_1_35 _Icountry_1_36
_Icountry_1_37 _Icountry_1_38 _Icountry_1_39 _Icountry_1_40
_Iyearave_2 _Iyearave_3 _Iyearave_4 _Iyearave_5 _Iyearave_6
gdifd2 tremfd1 opldiff opendiff tropfd sgldiff tropsglfd sgdiff

```
. test open tremit opentrem qmoney qmtrem openqm openqmtr;

 ( 1)  open = 0
 ( 2)  tremit = 0
 ( 3)  opentrem = 0
 ( 4)  qmoney = 0
 ( 5)  qmtrem = 0
 ( 6)  openqm = 0
 ( 7)  openqmtr = 0

       F(  7,    28) =    3.46
            Prob > F =    0.0085

. test tremit opentrem qmtrem openqmtr;

 ( 1)  tremit = 0
 ( 2)  opentrem = 0
 ( 3)  qmtrem = 0
 ( 4)  openqmtr = 0

       F(  4,    28) =    0.52
            Prob > F =    0.7205

. test open opentrem openqm openqmtr;

 ( 1)  open = 0
 ( 2)  opentrem = 0
 ( 3)  openqm = 0
 ( 4)  openqmtr = 0

       F(  4,    28) =    0.41
            Prob > F =    0.7996

. test qmoney qmtrem openqm openqmtr;

 ( 1)  qmoney = 0
 ( 2)  qmtrem = 0
 ( 3)  openqm = 0
 ( 4)  openqmtr = 0

       F(  4,    28) =    0.41
            Prob > F =    0.8014
```