Remittances Statistics:
First Meeting of the Luxembourg Group

June 2006

Luxembourg Group on Remittances

Luxembourg

26-27 June 2006

U.S. Experience in Compiling Remittances Estimates

Michael Mann
Bureau of Economic Analysis
U.S. Department of Commerce

This paper presents BEA's experience in compiling remittances estimates. BEA uses a model-based approach based on demographic data from household surveys to estimate personal transfers. This approach enables BEA's estimates to include transfers by all means (wire transfer, money order, hand delivery, etc.) and small transfers that may fall below bank-reporting thresholds.

The paper first presents background information on U.S. remittances. It then reviews U.S. compilation methods for the successively broader definitions of remittances from personal transfers, to personal remittances, to total remittances, to total remittances and transfers to Non-Profit Institutions Serving Households. The paper concludes with an assessment of the U.S. practical experience in compiling remittances.

Background

U.S. policy makers have increased their interest in remittances in recent years. This increased interest partly reflects the desire of policy makers to get a better picture of total flows of U.S capital to developing countries. U.S. remittance flows exceed U.S. official development assistance (ODA). Therefore, U.S. remittances significantly increase the percentage of U.S. gross national income sent to developing countries. This interest is also driven by the desire to make it less costly to send remittances. For example, policy makers believe that improved remittance statistics could help improve the financial infrastructure in countries that receive a large amount of remittances from the United States. In 2004, the U.S. Federal Reserve established a mechanism to facilitate the provision of low-cost remittances to Mexico through its automated clearinghouse; improved remittance statistics could help it identify other countries that could benefit from its low-cost remittance product.[1]

The United States may be the largest remittance-sending country in the world, with a majority of funds sent to Latin America and the Caribbean, and substantial amounts sent to Asia and Africa. However, relative to other items in the U.S. current account, remittance estimates are very small. Personal transfers from the United States to other countries in 2005 were $31.8 billion, less than 1 percent of total current account debits. The relatively small size of remittances tends to lead statistical agencies in the United States and other G-8 countries to devote scarce resources to improving the measurement of other economic series of greater magnitude.

There has been a large amount of discussion of differences in remittance estimates prepared by different countries and organizations, and the extent to which these estimates vary from one another.

---

[1] *International Remittances, Different Estimation Methodologies Produce Different Results,* United States Government Accountability Office (GAO-06-10), Report to the Committee on Banking, Housing, and Urban Affairs, U.S. Senate; March, 2005: page 1

Differences in definitions of "remittances" often cause confusion when comparing various estimates. For example, one unofficial estimate of U.S. remittances to Latin America used a variety of sources, including household interviews of Latin American residents in the United States, a survey of Latin American establishments that assist in money transfers, and information from central banks, to derive the estimate. The unofficial estimate differs from BEA's estimate partly because the unofficial estimate includes compensation of foreign workers net of their taxes on income, social contributions and travel expenditures related to their short term employment, whereas BEA's estimate does not. Moreover, because the unofficial estimate includes data from central banks and money transfer establishments located in remittance-receiving countries, the unofficial estimate may be over-stated because the United States is an international banking center and U.S. correspondent banks are often used even if the remitter is not living in, or otherwise connected to, the United States.

As another example, the U.S. Government Accountability Office reported that in 2003, the Mexican central bank estimated that Mexico received about $13.4 billion in remittances from the United States. In contrast, BEA estimated the amount of remittances from the United States to Mexico at $8.9 billion in 2003.[2] BEA believes that this difference largely occurs because Mexico's estimate includes transfers related to net compensation of employees, whereas BEA's estimate does not.

U.S. Compilation Methods

Personal Transfers

BEA's definition of personal transfers is consistent with the definition that has been proposed by the Technical Subgroup on the Movement of Persons – Mode 4. BEA records personal transfers within Line 38, "Private Remittances and Other Transfers," of Table 1. Although BEA does not publish personal transfers as a standard component of its balance-of-payments accounts, BEA does publish personal transfers as a supplemental estimate. BEA's supplemental estimate covers personal transfers to the rest of the world with no partner country detail. The United States is a net sender of personal transfers - U.S. residents send considerably more personal transfers to households abroad than U.S. residents receive from households abroad.

BEA uses a subset of foreign-born population to represent the remitting population in the United States because the foreign-born are most likely to have a personal link to foreign residents. BEA assumes that the native-born are most likely to send transfers to foreign residents through Non-Profit Institutions Serving Households (NPISHs). BEA assumes that personal transfers received by U.S.

[2] Ibid page 18

residents are sent by U.S. emigrants living abroad because they are most likely to have a personal link to U.S. residents.

BEA's estimates of personal transfers to households abroad include transfers by the foreign-born population who have resided, or who intend to reside, in the United States for more than one year.

BEA's estimates of personal transfers include all current transfers from resident to non-resident households, independently of the means of transfer (wire transfer, money order, hand delivery, etc.) by using a model as described in the next section.

Personal transfers to households abroad. BEA's estimates of personal transfers to households abroad consist of personal transfers sent by a subset of the foreign-born population in the United States to family and friends in their countries of origin.

BEA estimates personal transfers to households abroad using a model that combines four variables: The foreign-born population; the percentage of the foreign-born population that remits; the income of the foreign-born population and the percentage of income that is remitted by the foreign-born population. BEA first multiplies the foreign-born population, arrayed by selected demographic characteristics (to be discussed below), by the percentage of the foreign-born population that remits in order to obtain the population of remitters. BEA then multiplies the average per-capita income of the foreign-born population by the percentage of income remitted by those who remit in order to obtain per-capita remittances. Finally, BEA multiplies per-capita remittances by the population of remitters to obtain total personal transfers.

The foreign-born population and the income of the foreign-born population are based on source data from the U.S. Census Bureau's annual American Community Survey and the U.S. Census' Bureau's decennial Census of Population. The percentage of the foreign-born population that remits and the percentage of income remitted are BEA estimates based on various studies.[3] These studies highlight a variety of demographic characteristics that have a clear impact on remitting behavior. The following paragraphs explain how each of the selected characteristics of the foreign-born population – duration of stay in the United States, family type, country of origin, and gender – affect the percentage of the foreign-born population that remits and the percentage of income remitted, and therefore, the estimates of personal transfers.

Duration of stay in the United States. The duration of stay in the United States negatively affects the percentage of the population that engages in remitting.

[3] For a list of the studies, please see Christopher L. Bach, "Annual Revision of the U.S. International Transactions Accounts, 1991-2004," Survey of Current Business 85 (July 2005), page 64.

The foreign born who have been in the United States for many years are less likely to remit than those who have recently arrived because connections and obligations to family and friends in their country of origin tend to diminish over time. Although the motivation of the foreign born to remit tends to decline with the duration of stay, their capacity to remit often increases because their income tends to increase over time. For those who remit, BEA's model assumes that the percentage of income remitted remains constant over the duration of stay in the United States. This assumption permits transfers to vary directly with income, holding all else constant.

Family type. The presence of children in the U.S. household of the foreign-born negatively affects both the percentage of the population that engages in remitting and the percentage of income remitted. The presence of children tends to increase household expenditures, increases the likelihood that migration will be permanent, and shifts the household's center of economic interest from the household in the country of origin to the household in the United States. These factors detract from the foreign-born's motivation and capacity to remit, thus reducing the percentage of the foreign-born population that remits and the percentage of income remitted by those who do remit.

Country of Origin. The percentage of income remitted is significantly higher for persons from developing countries than for those from developed countries. Transfers to countries whose per-capita incomes are significantly below the per-capita income of the United States are often associated with a relatively high percentage of income remitted. The percentage of income remitted is also significantly higher for persons from countries in close proximity to the United States (especially Mexico and the Caribbean) because the lower costs of migration from these areas allow relatively more poor families to migrate to the United States.

Gender. Income is the primary determinant of the capacity to remit. The inclusion of average income disaggregated by gender captures the higher level (not the higher *percentage*) of transfers sent by males, whose incomes are typically higher than those of females.

Example. The table below illustrates the three-step process that BEA uses to combine these characteristics and data sources for a single hypothetical country. First, the number of adults in the foreign-born population – arrayed by duration of stay, family type, country of origin, and gender (panel A) – is multiplied by the percentage of the foreign-born population that engages in remitting (panel B). Second, the average income of the foreign-born – arrayed by duration of stay, family type, country of origin, and gender (panel C) – is multiplied by the percentage of income remitted (panel D). Third, the population of remitters resulting from step 1 is multiplied by the average per-capita remittance resulting from step 2, which results in total personal transfers to households abroad by the foreign-born population in the United States (panel E).

Personal Transfers Example

Panel A. Adult Foreign-Born Population (# of individuals)		Family Type			
		Children Not Present in U.S. Household		Children Present in U.S. Household	
		Male	Female	Male	Female
Duration of Stay	0-5 Years	21,000	12,000	10,000	11,000
	6-15 Years	12,000	9,000	10,000	11,000
	16-30 Years	12,000	13,000	4,000	3,000
	>30 Years	18,000	18,000	5,000	4,000

Panel B. Proportion of Population that Remits		Family Type			
		Children Not Present in U.S. Household		Children Present in U.S. Household	
		Male	Female	Male	Female
Duration of Stay	0-5 Years	80%	80%	50%	50%
	6-15 Years	70%	70%	40%	40%
	16-30 Years	60%	60%	30%	30%
	>30 Years	50%	50%	20%	20%

Panel C. Average Income [Dollars]		Family Type			
		Children Not Present in U.S. Household		Children Present in U.S. Household	
		Male	Female	Male	Female
Duration of Stay	0-5 Years	27,000	13,000	41,000	8,000
	6-15 Years	42,000	23,000	74,000	20,000
	16-30 Years	56,000	21,000	63,000	37,000
	>30 Years	51,000	24,000	79,000	34,000

Panel D. Perecentage of Income Remitted		Family Type			
		Children Not Present in U.S. Household		Children Present in U.S. Household	
		Male	Female	Male	Female
Duration of Stay	0-5 Years	10%	10%	6%	6%
	6-15 Years	10%	10%	6%	6%
	16-30 Years	10%	10%	6%	6%
	>30 Years	10%	10%	6%	6%

Panel E. Personal Transfers [Millions of Dollars]		Family Type			
		Children Not Present in U.S. Household		Children Present in U.S. Household	
		Male	Female	Male	Female
Duration of Stay	0-5 Years	45.4	12.5	12.3	2.6
	6-15 Years	35.3	14.5	17.8	5.3
	16-30 Years	40.3	16.4	4.5	2.0
	>30 Years	45.9	21.6	4.7	1.6
Total personal transfers					**282.7**

Personal transfers received by households in the United States. BEA's estimates of personal transfers received by households in the United States consist primarily of celebratory personal transfers sent by U.S. emigrants living abroad to family and friends residing in the United States.

The number of U.S. emigrants living abroad is based on data from the U.S. Social Security (government old-age pension) Administration and the U.S. State Department, as well as U.S. Census Bureau estimates of the annual number of new U.S. emigrants. The U.S. Social Security Administration provides annual data on the number of emigrants over age 65 (retirees) living abroad by country of residence. BEA estimates the number of emigrants under age 65 based on the U.S. State Department's estimate of the number of U.S. emigrants living abroad in 1984. From 1984 forward, this number is augmented by each year's emigrant outflow, as estimated by the U.S. Census Bureau; these flows are age and country specific. The U.S. State Department and U.S. Census Bureau break down their data into age groups; BEA advances each age group in age over time.

The average income of the emigrant population comes from the U.S. Census Bureau, which provides data on mean incomes and median net worths of U.S. households by age of the head of the household. BEA uses a proportion of average income to determine the dollar amount of remittances received from U.S. emigrants. BEA derives this proportion from data on dollar remittances of the foreign-born population living in the United States obtained from sample surveys of legalized aliens conducted by the Immigration and Naturalization Service (now the U.S. Bureau of Citizenship and Immigration Service) in the late 1980s and early 1990s. BEA assumes that the proportion of income remitted by U.S. emigrants living abroad is similar to the proportion of income remitted by immigrants living in the United States who are natives of the United Kingdom, Canada, and other developed countries because the economic profile of U.S.-born emigrants is similar to that of immigrants from these developed countries.

BEA estimates personal transfers received from U.S. emigrants living abroad by multiplying the number of U.S. emigrants by the average amount of income that is remitted for each age group and income level.

BEA also makes a small adjustment to its estimates of personal transfers to households abroad to account for celebrative remittances sent by U.S. residents to U.S. emigrants living abroad. BEA calculates this adjustment as a percentage of U.S. emigrants' personal transfers sent to households in the United States.

Personal remittances

BEA's measure of personal remittances consists of personal transfers plus net compensation of employees. Net compensation of employees represents the imputed unrequited flow from the household members as employees to the

households themselves. Household members as employees consist of foreign born persons who intend to reside in the United States for less than one year. BEA does not presently have source data available to estimate capital transfers between households.

BEA records personal transfers in Table 1, Line 38, "Private Remittances and Other Transfers," in its standard balance-of-payments presentation. BEA records gross compensation receipts in Table 1, Line 17, "Compensation of Employees" and records gross compensation payments in Table 1, Line 34, "Compensation of Employees." BEA records expenditures of foreign temporary workers in the United States in Table 1, Line 10, "Other Private Services," and records expenditures abroad of U.S. residents working temporarily abroad in Table 1, Line 27, "Other Private Services."

Compensation payments. BEA's estimates of compensation payments consist primarily of payments to temporary (typically seasonal) workers from Mexico. BEA's estimates of compensation payments also include earnings of border workers from Canada and Mexico, earnings of temporary workers from other countries, and earnings of foreign students working in the United States. BEA compiles estimates for Mexican agricultural and non-agricultural seasonal workers, Mexican border workers, and foreign students by multiplying the number of workers by a measure of their per-capita income. BEA's estimates of payments to Canadian border workers are based on data from Statistics Canada. BEA's estimates of the earnings of workers from other countries are based on data from the U.S. Internal Revenue Service (the U.S. tax authority). BEA calculates the expenditures of foreign temporary workers in the United States as a percentage of their compensation.

Compensation receipts. BEA's estimates of compensation receipts consist primarily of earnings of U.S. residents working for embassies or consulates of foreign governments located in the United States or international organizations located in the United States. BEA's estimates of compensation are based on information we obtain from these organizations. BEA's estimates of compensation receipts also include estimates of U.S. resident's earning from temporary employment abroad, which are based on data from the U.S. Internal Revenue Service. BEA calculates the expenditures abroad of U.S. residents working temporarily abroad as a percentage of compensation.

Total remittances

Total remittances consist of personal remittances plus social benefits. Social benefits are current transfers received by households intended to provide for the needs that arise from certain events or circumstances, for example, sickness, unemployment, retirement, housing, education, or family circumstances.

BEA records social benefits sent to households abroad by the U.S. Government in Table 1, Line 37, "U.S. Government pensions and other transfers," in its standard balance-of-payments presentation. BEA uses administrative data to estimate these payments.

BEA records social benefits sent to households abroad stemming from private pension plans in Table1, Line 38, "Private Remittances and Other Transfers." BEA uses partner country data to estimate these payments.

Total remittances and transfers to NPISHs

Total remittances and transfers to NPISHs consists of total remittances plus current and capital transfers *through* U.S.-based NPISHs. BEA does not presently have the source data available to separately identify capital transfers through U.S-based NPISHs, nor does it have the source data to determine whether transfers through U.S.-based NPISHs are receivable abroad by foreign households directly, or indirectly for the benefit of households by foreign NPISHs, foreign corporations, or foreign governments.

BEA records transfers through U.S.-based NPISHs in Table 1, Line 38, "Private Remittances and Other Transfers," in its standard balance-of-payments presentation.

BEA estimates transfers through U.S.-based NPISHs by conducting a voluntary survey of U.S.-based religious, charitable, educational, and other non-profit institutions. BEA assumes that most U.S. residents without a personal link to someone abroad will send transfers through U.S.-based NPISHs.

Assessment of U.S. Experience

Remittances are difficult to measure for several reasons. One reason is that personal remittances are typically characterized by a large number of elusive transactors making small, but frequent transactions. Such transactions are difficult to measure using surveys, both because it is difficult to locate the transactors, and because it is difficult to obtain reliable responses from them. Another reason is that a substantial portion of personal remittances flow through informal channels, such as the hand-delivery of cash, rather than formal channels, such as banks. This makes personal remittances especially difficult to measure.

Strengths: BEA's model-based approach for estimating personal transfers – multiplying an estimate of the number of individuals who remit by an estimate of their per-capita transfers – allows BEA to capture remittances through both formal and informal channels. Another strength is that BEA's estimates are based on timely, detailed demographic data. The weaknesses in BEA's approach stem from the challenge in measuring a large undocumented foreign-

born population, and the lack of reliable, current information on the remitting behavior of the foreign-born population.

BEA continually improves its estimates by incorporating more up to date source data as they become available. BEA provides projected remittances estimates on a quarterly basis within a month and a half of the close of the quarter. BEA provides revised annual remittance estimates, based on the full set of the U.S. Census Bureau's annual American Community Survey population and income data, within a year and a half of the close of the year and just a few months after the U.S. Census Bureau's release of the source data. BEA's method relies on existing data that are timely, and provide detailed demographic information. Specifically, BEA's method now relies on data from the annual American Community Survey, rather than on data from the decennial Census, as was BEA's practice until 2005.

Weaknesses. A special challenge for the United States in compiling remittances is that the United States has a large, undocumented, foreign-born population that is difficult to measure accurately. Many immigrants are not authorized to reside or work in the United States. This leads to several problems in attempting to measure the size of the foreign-born population, their average income, and ultimately, their remittances. First, this population is difficult to locate and accurately measure. They may be migratory with no fixed address; they may live in group homes in which the total number of residents is unclear; they may have large families that are undercounted; they may elude survey takers altogether for fear of deportation. However, the U.S. Census Bureau employs extensive surveying and statistical techniques to estimate the size and characteristics of the undocumented foreign-born population.[4] Second, it is possible that immigrants under-report their income, which is often the case in surveys of low income populations.

Third, immigrants may tend to over-report the amount they remit in order to conform with social norms or with their own sense of what they should be sending. BEA estimates the amount they remit - more precisely the percentage of income remitted - and the percentage of the population that remits partly based on survey data from the late 1980s and early 1990s.[5] Therefore, BEA's estimates are not sensitive to changes in remitting behavior over time or to

[4] See for example, "Accuracy and Coverage Evaluation of Census 2000: Design and Methodology," U.S. Census Bureau, September 2004, available at the following web address: www.census.gov/prod/2004pubs/dssd03-dm.pdf. See also the U.S. Census Bureau's Population Division working paper series (http://www.census.gov/population/www/techpap.html), which has several papers dedicated to the accurate estimation of the foreign-born population and its components.

[5] BEA updated these estimates in July 2005 using academic research, private surveys, and other information.

sudden spikes and subsequent drop-offs that may result from natural disasters or other significant events abroad.

Although the foreign-born population may remit nearly as much as they can on an ongoing basis to households abroad, they may be able to draw on cash reserves, or on the charity of neighbors and friends in the United States, to allow them to temporarily increase remittances in times of great need. BEA's investigation into such spikes following past disasters (such as the 2004 South Asian tsunami) showed that the spike in personal transfers from the foreign born is likely small. However, BEA found that there are often significant spikes in cash and in-kind transfers from NPISHs and corporations when a disaster strikes.

In summary, the accuracy of BEA's estimates depends, in part, on the accuracy of the data reported on households surveys. The accuracy of the survey results will depend on how well the sample represents the universe population and the degree to which respondents provide accurate information about their remitting behavior.