

GAO

Report to the Committee on Banking,  
Housing, and Urban Affairs, U.S. Senate

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March 2006

# INTERNATIONAL REMITTANCES

## Different Estimation Methodologies Produce Different Results



G A O

Accountability \* Integrity \* Reliability



Highlights of [GAO-06-210](#), a report to Committee on Banking, Housing, and Urban Affairs, U.S. Senate

### Why GAO Did This Study

Remittances are the personal funds that the foreign born send to their home countries. In recent years, estimated remittances have grown dramatically, and policy makers have increased their attention to these flows. Organizations use various methodologies to estimate remittance flows, which result in a range of estimates. In 2004, the Group of Eight (G8) leaders emphasized the need for improved statistical data on remittances.

In light of the growing volume of remittances and the differences in estimates, GAO examined (1) the methodology that the Bureau of Economic Analysis (BEA) uses to develop the official U.S. estimate, (2) methodologies that other countries and multilateral organizations use to estimate remittances, and (3) international efforts to improve the collection and reporting of remittance data.

### What GAO Recommends

While GAO makes no recommendations at this time, GAO observes estimates of the amount of remittances from the United States differ. More accurate remittance estimates could help certain U.S. agencies make better decisions. Therefore, policy makers may want to consider exploring options for improving the accuracy of U.S. remittance statistics. We received written comments on a draft of this report from the Departments of the Treasury and Commerce. They both generally agreed with our observations.

[www.gao.gov/cgi-bin/getrpt?GAO-06-210](http://www.gao.gov/cgi-bin/getrpt?GAO-06-210).

To view the full product, including the scope and methodology, click on the link above. For more information, contact Yvonne Jones at (202) 512-2717 or [jonesy@gao.gov](mailto:jonesy@gao.gov).

## INTERNATIONAL REMITTANCES

### Different Estimation Methodologies Produce Different Results

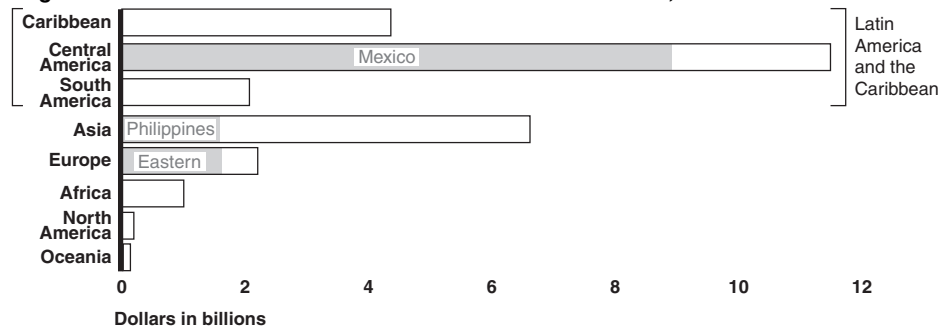
#### What GAO Found

BEA uses a model to estimate remittances from the United States and, although the methodology has some strengths, the accuracy of BEA's estimate is uncertain for several reasons. BEA estimated remittances for 2003 at \$28.2 billion; its model used data on the number of foreign-born residents, their income, the proportion of income that is remitted, and other demographic data. The strengths of BEA's methodology are that, in theory, it estimates remittances sent through formal and informal channels. It also is low-cost because it uses existing data on the foreign born. However, BEA's methodology was limited by the quality and timeliness of the data, particularly on the portion of income likely to be remitted. BEA revised its model in 2005 to use new data sources, but the accuracy of its estimates depends on the accuracy of its assumptions regarding the remitting behavior of the foreign born and other factors.

Some central banks and the Inter-American Development Bank (IDB) use different methodologies to provide estimates of remittances from the United States that vary significantly. For example, Mexico's central bank estimates remittances primarily by collecting data from money transmitters. The IDB used a variety of sources, such as surveys of remittance senders and receivers, and information from remittance transfer companies and central banks, to estimate remittances from the United States to Latin America to be \$30.6 billion in 2003. We aggregated BEA's data to estimate remittances to this region to be \$17.9 billion.

BEA is an active participant in recent international efforts to improve remittance statistics. The World Bank and others established a remittances working group in 2005, which delegated tasks to other international groups to (1) clarify the definition of remittances and (2) provide guidance on how to collect and estimate remittances. BEA participated in the first group, which recommended a new definition of remittances. The second group will have its first meeting in June 2006.

**Regional Destination of Remittances Sent from the United States, 2003**



Source: GAO estimates based on underlying BEA tabulations.

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## Abbreviations

ACS	American Community Survey
BEA	Bureau of Economic Analysis
CPS	Current Population Survey
G8	Group of Eight
IRCA	Immigration Reform and Control Act of 1986
IDB	Inter-American Development Bank
IMF	International Monetary Fund
LPS	Legalized Population Survey
MIF	Multilateral Investment Fund
OFW	Overseas Filipino Workers
TSG	Technical Subgroup on the Movement of Natural Persons

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United States Government Accountability Office  
Washington, D.C. 20548

March 28, 2006

The Honorable Richard C. Shelby  
Chairman  
The Honorable Paul S. Sarbanes  
Ranking Minority Member  
Committee on Banking, Housing,  
and Urban Affairs  
United States Senate

The United States is 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. In recent years, remittances have received growing attention from policy makers in both developed and developing countries because these flows serve as an important financial source for some countries. According to the World Bank, remittances received by developing countries were estimated to have been \$167 billion in 2005, up 73 percent from 2001; however, given that the extent of unrecorded flows through formal and informal channels is unknown, actual remittance flows may be much higher. World Bank data show that remittance growth has outpaced private capital flows and official development assistance over the last decade. When combined with official U.S. development assistance, these flows significantly increase the percentage of U.S. gross national income sent to developing countries.

In 2004, the Group of Eight (G8) leaders emphasized the importance of remittances and the need for improved statistical data on them.<sup>1</sup> In the United States, some agencies have also expressed a need for improved remittance estimates. For example, the Department of the Treasury (Treasury) conducts bilateral outreach programs, and Treasury officials believe improved remittance statistics could help it better target its program to improve the financial infrastructure in countries that receive a large amount of remittances from the United States. In 2004, the Federal Reserve established a mechanism to facilitate the provision of low-cost remittances to Mexico through its automated clearinghouse; improved

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<sup>1</sup>The G8 is a group of eight countries: Canada, France, Germany, Italy, Japan, Russia, the United Kingdom, and the United States. The G8 summit brings the heads of state or government of these countries together on an annual basis to deal with the major economic and political issues facing their domestic societies and the international community as a whole. Representatives from the European Union are also involved in the meetings.

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remittance statistics could help it identify other countries that could benefit from its low-cost remittance product.

Different organizations use various methods to estimate remittance flows, which result in a range of estimates. In light of the volume of remittances and the differences in estimates, you asked us to review the methodologies used to estimate remittances from the United States.<sup>2</sup> Specifically, we examined (1) the methodology that the Department of Commerce's (Commerce) Bureau of Economic Analysis (BEA) uses to develop the official U.S. estimates of remittances from the United States, (2) methodologies other countries and multilateral institutions use to estimate remittances from the United States, and (3) international efforts to improve the collection and reporting of remittance data. In addition, we recently issued a report that focused on remittance products, costs, and consumer disclosures for remittances sent from the United States to other countries.<sup>3</sup>

To address these objectives, we met with officials at BEA and the U.S. Census Bureau. We also reviewed documentation that described BEA's methodology prior to 2005 and obtained documentation from BEA describing their revised methodology, which was implemented in July 2005. We met with officials from the Inter-American Development Bank (IDB), the Inter-American Dialogue, and the Mexican and Philippine central banks to obtain their estimates on remittances from the United States. We also obtained descriptions of the methodologies they used to estimate remittances, the reasons for using these methodologies, and the potential advantages and disadvantages of their use. We primarily report data for 2003 because that is a time period for which BEA has statistically reliable data and because data for more recent time periods are preliminary. As a matter of consistency we use this period to report on the other entities as well. We do, however, report more recent data when available. We met with officials from BEA, Treasury, the Department of State, the U.S. Agency for International Development, the International Monetary Fund (IMF), the World Bank, and IDB to obtain information on international efforts to improve remittance estimates. Appendix I provides additional details on our scope and methodology. We conducted our work from December 2004

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<sup>2</sup>In this report, we use "remittances" to refer to funds transferred by foreign-born individuals to their home countries from the United States.

<sup>3</sup>GAO, *International Remittances: Information on Products, Costs, and Consumer Disclosures*, [GAO-06-204](#) (Washington, D.C.: Nov. 17, 2005).

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to March 2006 in accordance with generally accepted government auditing standards.

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## Results in Brief

BEA uses a model to estimate remittances from the United States and, although this methodology has some strengths, the accuracy of BEA's remittance estimate is uncertain for several reasons. BEA estimated remittances for 2003 at \$28.2 billion; its model used data on the number of foreign-born residents in the United States, their income, the proportion of income that is remitted, and other demographic data.<sup>4</sup> However, BEA's methodology was limited by the quality and timeliness of data available to BEA, particularly the data on the portion of income that is likely to be remitted. BEA revised its model in 2005 to use new data sources from the Bureau of the Census on the demographics of the foreign born and more recent studies on the remitting behavior of the foreign born. It then revised its estimates back to 1991 using this new approach, which resulted in an increase in estimated remittances for all years. Two of the strengths of BEA's methodology are that, first, in theory, it estimates remittances sent through both formal and informal systems; and, second, it is low-cost to BEA because it uses existing data on the foreign born.<sup>5</sup> The accuracy of BEA's estimate, however, depends on the accuracy of its assumptions. For example, BEA's revised model assumes that the proportion of income remitted is higher for U.S. residents from developing countries closer to the United States and that the percentage of the foreign born that remit is the same for all migrants from all countries, but varies depending on how long they have been in the United States. Further, it is not possible to directly link the parameters BEA uses to capture the remitting behavior of the foreign born to the sources cited. Our analysis of BEA's estimates also found that they are particularly affected by the assumptions BEA used on the percentage of income remitted and the percent of foreign born that remit. We used a statistical technique that repeatedly and randomly

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<sup>4</sup>We found this number to actually be \$28.03 billion, which BEA agreed to correct in its next publication to be released in June 2006.

<sup>5</sup>Formal systems are characterized by participation in the regulated financial sector. Such participation means that the institution involved in the money transfer is supervised by government agencies and laws that determine their creation, characteristics, operations, and closure. Formal systems typically include banks, credit unions, money transfer operators (including other wire transfer services), and postal services. Informal systems include those that operate outside of the regulated financial sector, including courier services and hawalas. Hawalas are one type of informal value transfer system often used in places where formal financial transactions are unavailable, expensive, or unreliable.

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samples from underlying data to obtain a range for 90 percent of possible estimates and determined that estimated remittances from the United States could range in value from \$17.3 billion to \$35.9 billion. Finally, BEA's remittance estimate includes remittances sent by some of the foreign born who have been in the United States for less than one year, who, according to BEA's definition of remittances, should not be included.

Some central banks and the IDB use a variety of methodologies and data sources to provide estimates of remittances from the United States that vary significantly. For example, Mexico's central bank estimates remittances by collecting data on the amount remitted through money transmitters and by surveying Mexican nationals returning to the country at the U.S.-Mexico border. The Philippine central bank estimates remittances by tracking the income of its residents working abroad that is channeled into banks in the Philippines and netting out living expenses to estimate remittances. The primary advantage of these methodologies is that they capture actual or projected estimates of remittance flows. Unlike BEA's methodology, however, these methods are limited in their ability to capture remittances made through the informal sector. The IDB, which provides financing for economic, social, and institutional development projects for Latin America and the Caribbean, estimates remittances on a regional basis. The IDB developed its own estimate of remittances from the United States to Latin America and the Caribbean using a survey of the annual remittance amounts sent from Latin American residents of the United States to their countries of origin. In addition, the IDB has conducted surveys of residents in countries in the region who receive remittances and compared their estimates with those of central banks in these countries. These in-country surveys also have allowed IDB to estimate the amount of remittances these countries receive from the United States. Such survey efforts can provide statistically valid estimates but can be costly to implement and rely on the willingness of respondents to share information. The remittance estimates generated by the central banks, IDB, and BEA vary significantly from one another. For example, in 2003, the IDB estimated that \$30.1 billion was remitted from the United States to Latin America and the Caribbean. Although BEA does not publish remittance estimates by region, we aggregated BEA's country-by-country tabulations to estimate remittances to Latin America and the Caribbean and found this to be \$17.9 billion.

BEA is an active participant in international efforts to improve remittance statistics, but these initiatives, which began in 2005, are in the early stages and have not yet produced results that make it easier to reconcile



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remittance estimates. Currently, countries and other entities that estimate remittances use a variety of methods such as model estimation, bank reporting systems, or surveys of remitters; each method has strengths and limitations as we discussed earlier. Further, few countries seek to reconcile their estimates with other countries, and others are unable to devote significant resources to collecting data on remittances. For these reasons, the heads of the G8 countries at the 2004 G8 summit called upon international financial institutions such as the World Bank and IMF to lead a global effort to improve remittance statistics. As part of this effort, the World Bank and IMF hosted a meeting in January 2005 and proposed that two different groups undertake an objective: (1) to clarify the definition of remittances, and (2) to provide guidance on how to collect and estimate remittance flows. In the first case, the United Nations Technical Subgroup on the Movement of Natural Persons, of which BEA is a member, recommended that “personal transfers” be defined to include personal transfers received by resident households from nonresident households. This definition was discussed at a June 2005 meeting of the IMF Balance of Payments Committee and is expected to appear in the updated international statistical standards that are scheduled to take effect in 2008. In the second case, Eurostat, the statistical agency of the European Union, agreed to host and jointly organize a meeting in June 2006 of a new group called the Luxembourg Group, to develop more detailed guidance for compiling remittance data. As of March 2006, BEA had not been formally asked to participate on this group but expected that it would be. No date has been set for the group to complete its work.

Although we make no recommendations at this time, we observe that estimates of the amount of remittances from the United States differ based on different methodologies. More accurate remittance estimates could help certain U.S. agencies such as Treasury make better decisions on how much (and what kind of) development assistance to provide, and U.S. companies could make better decisions regarding foreign direct investment. Therefore, policy makers may want to consider exploring options for improving the accuracy of U.S. remittance statistics.

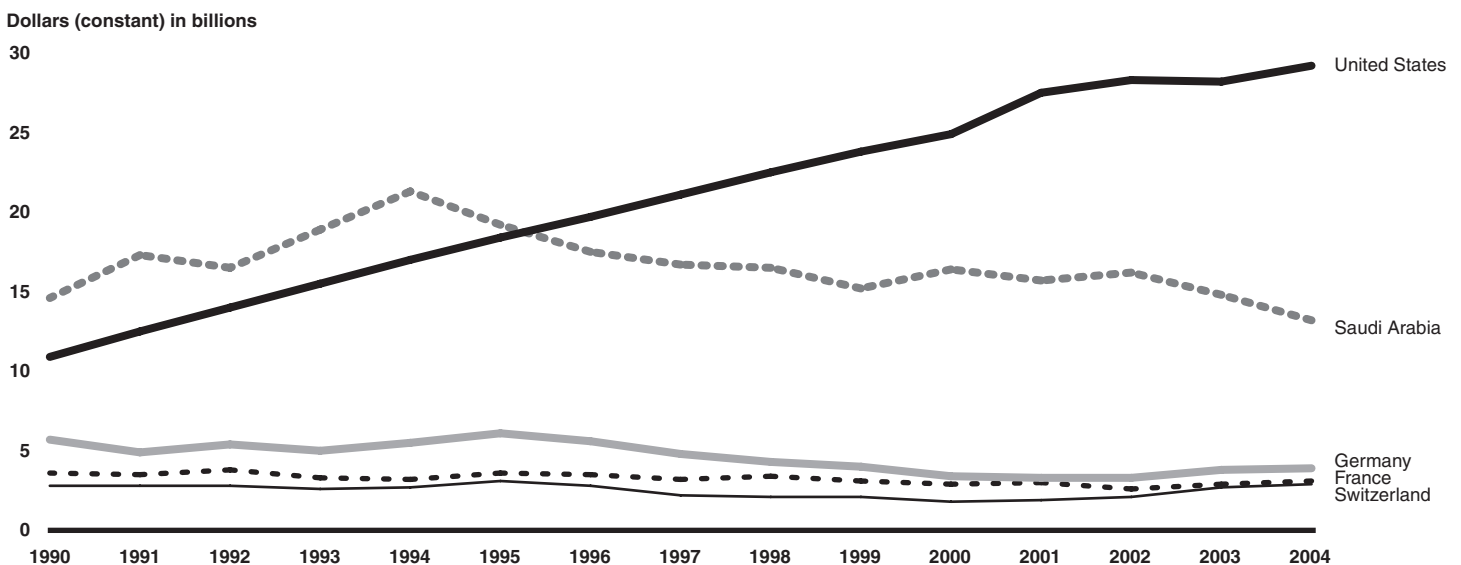
We provided a draft copy of this report to Treasury and Commerce for their review and comment. Treasury concurred with all of our observations, while Commerce concurred with most of them. Commerce also provided a number of additional specific comments. Commerce’s comments and our response are discussed in appendix V.

## Background

Remittances have become an important source of financial flows to developing regions and have been resilient in the face of economic downturns. These funds can be used for various purposes, including basic consumption, housing, education, and small business formation; they can also promote financial development in cash-based economies. Because of the importance of these flows to many developing countries, in recent years, countries that send remittances and receive remittances, along with international organizations, have expressed increasing interest in understanding immigrants' remittance practices.

According to the 2000 Census, the 1990s saw the largest increase in the foreign-born population that entered the United States, compared with any other 10-year period. IMF figures show that in 2004, immigrants in the United States sent over \$29.9 billion in remittances, more than any other country. Saudi Arabia was the second largest remittance-sending country; however, as shown in figure 1, the volume of remittances from Saudi Arabia has been falling since 1994, while that from the United States has been steadily increasing.

**Figure 1: Largest Sources of Remittances, 1990-2004**



Source: IMF balance of payment statistics.

For some countries, remittances constitute the single largest source of foreign currency and can often rival direct foreign investment in amounts. World Bank data show that for selected countries remittances exceed the flows of official development assistance and foreign direct investment and are relatively large compared to exports and gross national income—particularly for the Dominican Republic and the Philippines (see table 1).

**Table 1: Remittances as a Percentage of Various Economic Indicators for Selected Countries for 2003**

Country	Remittances as a percentage of exports of goods and services	Remittances as a percentage of official development assistance	Remittances as a percentage of foreign direct investment net inflows	Remittances as a percentage of gross national income	Remittances as a percentage of foreign reserves
Brazil	3.4%	953.1%	27.8%	0.6%	5.7%
Colombia	18.3	383.5	176.2	3.8	28.5
Dominican Republic	27.1	3371.5	750.2	12.5	918.4
Egypt	16.6	331.3	1247.3	3.2	21.8
India	19.2	1847.3	407.7	3.0	17.6
Mexico	8.2	14147.9	135.3	2.3	24.8
Morocco	25.6	691.3	158.6	9.2	26.1
Nigeria	5.9	528.0	139.8	3.5	23.5
Philippines	20.2	1068.9	2470.2	9.1	57.7
Poland	3.3	194.2	56.1	1.1	7.1
<b>World Total</b>	<b>1.8</b>	<b>223.5</b>	<b>30.2</b>	<b>0.5</b>	<b>5.6</b>

Source: GAO analysis of World Bank data.

Notes: Data are derived from remittance estimates reported in the World Bank's *Global Development Finance*. "Reserves" are total foreign exchange reserves, excluding gold. The countries selected are the top recipients of remittances in their respective regions.

Remittances are also very important for those households that receive them. Table 2 shows the minimum wage per month for several developing countries as well as our computation of the 2003 per capita remittances from the United States per month. As can be seen from this table, remittances received by households on a monthly basis tend to substantially exceed the monthly minimum wage for these countries. For example, per capita, remittances to households in the Philippines are almost five times the monthly minimum wage a Filipino worker would make in the retail and service sector.

**Table 2: Per Capita Remittances from the United States Compared to Minimum Wages for Selected Countries, 2003**

Country	Minimum wage per month (in U.S. dollars)	Per capita remittances from the United States per month (in U.S. dollars)	Percentage of minimum wage per month to per capita remittances from the United States per month	Month of income at the minimum wage that the per capita remittance from the United States would replace (in months)
Bangladesh	\$30	\$137	457	4.6
El Salvador	49	189	386	3.9
Ghana	26	177	681	6.8
Philippines	38	178	468	4.7
Romania	84	200	239	2.4

Source: GAO calculations using BEA's underlying tabulations for remittances from the United States in 2003 and data from the International Labor Organization's minimum wages database.

Note: The minimum wage in developing countries generally applies to urban workers.

The IMF collects and publishes official estimates of remittances sent from its member countries, including the United States, as part of its balance of payments statistics. The IMF currently reports the sums of “workers’ remittances” and “compensation of employees” as the best measure of total personal remittances. According to IMF, “workers’ remittances” are transfers by migrants who are employed in countries other than their birth countries and are considered residents there; “compensation of employees” is made up of wages, salaries, and other benefits earned by individuals in economies other than those in which they are residents, for work performed or paid for by residents of those economies. As a result, compensation of employees applies only to individuals away from their place of origin for less than a year.<sup>6</sup>

In the United States, no U.S. government agency tracks the flow of remittances through the payment system. Because of its role in compiling balance of payments statistics, BEA provides to the IMF official estimates of U.S. remittance inflows and outflows. BEA publishes remittance estimates in a different manner than reported in the IMF’s balance of payment statistics. BEA includes estimates of remittances by the foreign-born population residing in the United States to households abroad in the published item called “private remittances and other transfers.” This

<sup>6</sup>This report only focuses on personal transfers, which we are calling remittances. We did not focus on compensation of employees because that represents labor income and a potential, but not an actual, flow of funds sent across a border.

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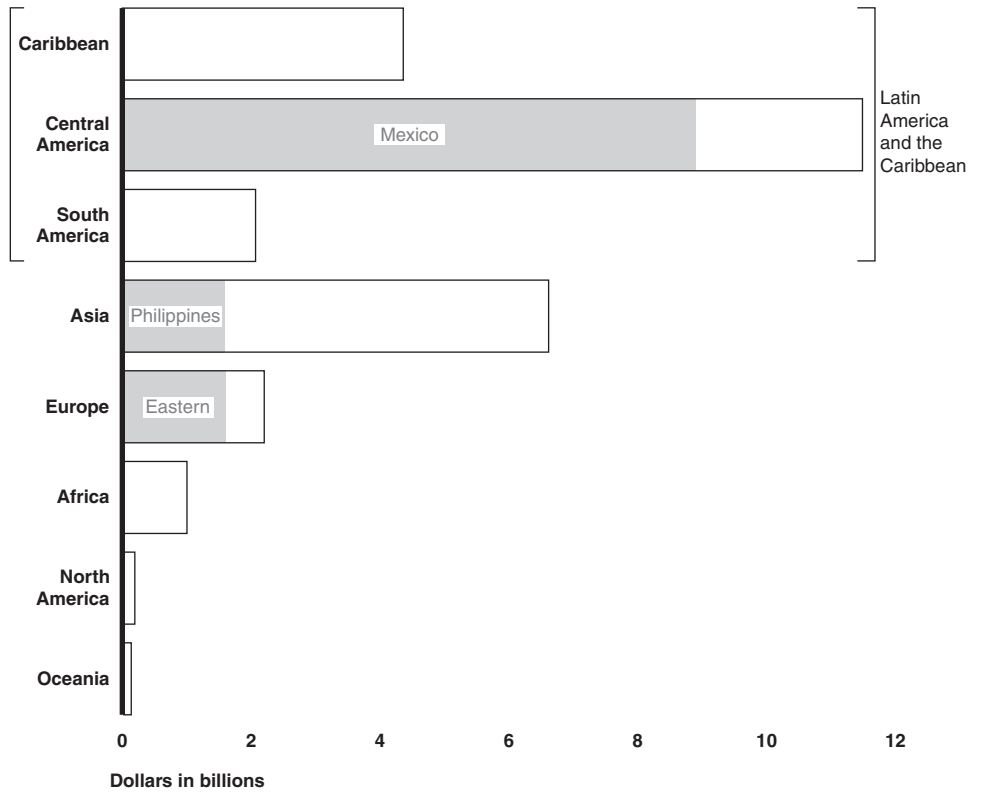
category is broader than the international definition of remittances, as it also includes payments or receipts of nongovernmental U.S. entities and foreign entities. Also, BEA publishes its estimates of “private remittances and other transfers” in its tables of international transactions accounts, defining it as the difference between transfers to and transfers from the United States. However, BEA provides to the IMF an estimate of remittances that flow from the United States to the world based on its underlying country-by-country tabulations. Until this year, BEA only provided this estimate to the IMF. For the first time, BEA published the estimate it provided to the IMF, as well as revised estimates back to 1991, in the July 2005 *Survey of Current Business*.<sup>7</sup>

The majority of remittances from the United States flow to Latin America, which includes Mexico, Central America, South America, and the Caribbean (see fig. 2). A large amount also flows to Asia, including the Philippines.

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<sup>7</sup>The *Survey of Current Business* is the monthly journal of the BEA. BEA describes and explains important features of BEA's economic accounts in this journal.

**Figure 2: Regional Destination of Remittances Sent from the United States, 2003**



Source: GAO estimates based on underlying Bureau of Economic Analysis tabulations.

Note: The shaded parts of the bar signify those countries, or in the case of Europe, regions, that make up the large majority of remittances received from the United States in each location.

There are many obstacles to accurately estimating remittances. First, many transactions may go through unregulated informal channels from which information cannot be garnered for inclusion in official estimates. While there are no official estimates, some experts believe that a large amount of remittances flow through this system, with market observers estimating that informal flows can range from 50 percent to 250 percent of recorded remittance flows. Second, countries do not always report remittance estimates or do not report them according to commonly held IMF definitions, which exclude transfers by the foreign born who have been in-country for less than one year. Variations in data compilation procedures occur partially due to different interpretations of definitions and classifications. In most cases, however, data weaknesses and omissions are

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due to difficulties in obtaining the necessary data. For example, the World Bank and other international organizations have indicated that developing countries with large remittance inflows often have a relatively weak capacity and limited resources, even though remittances are a large item in their balance of payments statistics. Countries with large remittance outflows often give lower priority to improvements in remittance statistics because they are a relatively small item in their balance of payments statistics, according to the World Bank and other international organizations.

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## **BEA Uses a Model to Estimate Remittances Sent from the United States, but the Accuracy of BEA's Estimate Is Uncertain for Several Reasons**

BEA uses a model to estimate remittances (which it calls “personal transfers”) from the United States. Although BEA’s methodology has some strengths, the accuracy of BEA’s estimate is uncertain for a number of reasons. BEA estimated that remittances from the United States in 2003 were \$28.2 billion. To arrive at this estimate, BEA used a model that estimates remittances based on demographic information on the foreign born, such as their total number, income, and the percentage of income they remitted. In 2005, BEA revised its model for estimating remittances and incorporated more current Census Bureau data on the size and demographic characteristics of the foreign-born population of the United States; however, the model is limited particularly by lack of current data on the proportion of income immigrants were likely to remit and the assumptions BEA makes about its data. In addition, BEA uses the more current census data in a way that may double-count some immigrants.

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## **BEA’s Methodology Relies on Existing Data and BEA’s Assumptions to Estimate Remittances**

Prior to 2005, to derive its annual estimate of remittances sent from the United States, BEA developed a model comprised of three factors—the number of the foreign born, their family income, and the proportion of income remitted. The count of the foreign born, their income, and other demographic characteristics were obtained from information aggregated annually from U.S. Bureau of the Census surveys. These data were arrayed by length of residency in the United States and family types linked to marital status (e.g., married foreign head of households, native-born married to foreign-born spouse, and unmarried individuals). The remitter was assumed to be the household head. BEA extrapolated the foreign-born

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population derived from the 1990 Decennial Census using indicators, including the Census Bureau's annual Current Population Survey (CPS).<sup>8</sup>

To estimate the proportion of income immigrants were likely to remit, BEA relied on the 1989 Legalized Population Survey (LPS1) and the 1992 Legalized Population Follow-Up Survey (LPS2), which were conducted as a result of the Immigration Reform and Control Act of 1986 (IRCA).<sup>9</sup> BEA then combined the information obtained from LPS1 and LPS2 with demographic and income information obtained from the CPS to arrive at the total amount of remittances sent from the United States. For a more detailed description of BEA's methodology for estimating remittances, see appendix II.

In 2005, BEA made several revisions to its methodology to include more recent census data, and recent studies on the foreign born and their remitting behaviors. First, BEA incorporated data on the foreign-born population and their income from the 2000 Census and the American Community Survey (ACS), which is available annually, unlike decennial census data, and thus requires less extrapolation of population and income trends.<sup>10</sup> According to BEA, these data will enable a better breakdown of the foreign-born population by all relevant characteristics on an annual basis. The ACS data on the number and income of the adult foreign-born population are arrayed by their gender, duration of stay, presence or absence of children, and per capita income of recipient countries and proximity to the United States. BEA then used its own judgment to determine the percentage of the adult foreign-born population that remits and the probability of remitting from information gathered from various academic studies published between 1995 and 2004, as well as LPS1 and

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<sup>8</sup>The CPS is a monthly survey of about 50,000 households conducted by the Bureau of the Census for the Bureau of Labor Statistics. The CPS is the primary source of information on the labor force characteristics of the U.S. population.

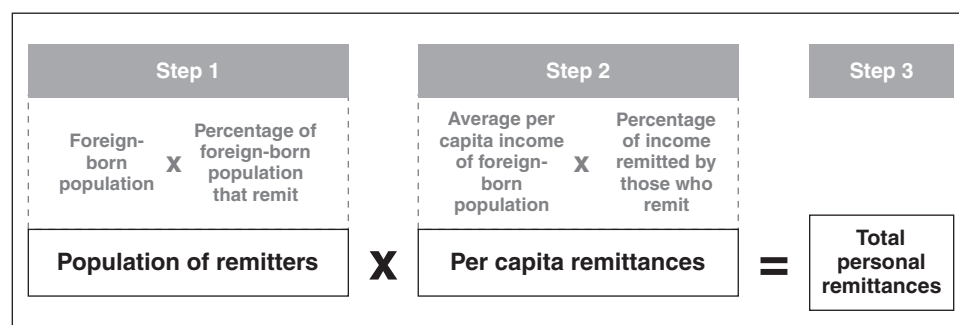
<sup>9</sup>Pub. L. No. 99-603, 100 Stat. 3359 (1986).

<sup>10</sup>ACS is a nationwide survey designed to provide indicators of communities. It will replace the "decennial long form" in future censuses and is a critical element in the Census Bureau's reengineered 2010 Census. The ACS is conducted every month by mail, telephone, and visits from Census Bureau field representatives; it includes approximately three million households annually. It is designed to provide estimates of demographic, housing, social, and economic characteristics every year for all states; as well as for all cities, counties, metropolitan areas, and population groups of 65,000 people or more.



LPS2, which BEA used in its earlier model.<sup>11</sup> BEA revised its estimates back to 1991 using this new approach, which resulted in an increase in estimated remittances for all years. Figure 3 shows the data that are included in BEA's model and how the remittance estimate is calculated.

**Figure 3: BEA's Methodology for Estimating Remittances, 2005**



Source: BEA.

In most cases, BEA provides only a global estimate of remittances and does not publish remittance statistics about remittances from the United States to individual countries. BEA stated that some data elements are not available for some time periods or geographic areas, so it must undertake a variety of methods to fill the data gaps in order to produce the underlying tabulations needed for an aggregate estimate for the world. BEA cautions that disaggregating its estimate for the world is error-prone and expresses confidence only in its aggregate estimate. Further, according to BEA, in moving from the global estimate to increasingly smaller geographic areas or countries, the average errors in the underlying tabulations increase. When it estimates remittances for selected regions, it publishes them on a net (inflows minus outflows) basis.

<sup>11</sup>See *Survey of Current Business*, July 2005.

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## The Accuracy of BEA's Remittances Estimates Is Affected by the Quality of the Data and the Assumptions Used in the Methodology

BEA's approach has several strengths: in theory, it captures both formal and informal channels of sending remittances. It is also low-cost because it relies on available data and not on eliciting data from a foreign-born population that may not have an incentive to provide accurate data. However, the accuracy of BEA's estimate is affected by the quality of the data available to BEA. A critical component of the methodology relies on information about the remitting behavior (e.g., amount, frequency) of the foreign born. Prior to 2005, the primary data available to BEA were the 1989 LPS1 and the 1992 LPS2; however, these surveys may not have been appropriate for use in estimating remittances of all the foreign born because they sampled a population participating in a special legalization program primarily aimed at Latin American immigrants. The LPS1 and LPS2 excluded undocumented aliens, temporary residents who did not wish (or were not eligible) for legal status, and legal immigrants who became legalized through processes other than IRCA. The survey design did not provide a way to more extensively sample immigrant groups more likely to remit than others (e.g. the foreign born with less than 10 years of residence in the United States). In addition, recent census data show that some basic demographic characteristics of the foreign born have changed significantly since the LPS1 and LPS2 surveys were done.

BEA's revisions to its methodology recognize these changes in the foreign born population. In its revision, BEA reviewed a number of academic studies to update the findings of the LPS1 and LPS2 and published the sources in the July 2005 *Survey of Current Business*, however, the estimates on the proportion of income remitted cannot be directly tracked to these source documents. Although this approach is more transparent than the prior approach of relying primarily on LPS1 and LPS2, BEA's estimate is still affected by its "judgment" of how it incorporates information from the academic studies it is now using, and the assumptions it makes in its model. For example, two of BEA's assumptions are that the proportion of income remitted is higher for U.S. residents from developing countries than developed countries, and that the percentage of the foreign born that remit is the same for all countries and only varies based on how long they have been in the United States. Our analysis suggests that the final BEA estimates of remittances are affected by these assumptions. We used a statistical technique that repeatedly and randomly samples from underlying data to obtain the range for 90 percent of possible estimates and determined this to be between \$17.3 billion and \$35.9 billion. See appendix III for the analysis we used to determine these ranges.

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## BEA's Revised Methodology Includes Remittances Sent by Some of the Foreign Born Who Have Been in the United States for Less Than One Year

Remittance estimation in the balance of payments framework generally separates remitters by their length of residency in host countries. All remittances are presumably sent by the foreign born who have been in the host country for greater than one year, while those that are in a country for less than a year are presumed to be temporary, earning only compensation. For this reason, some experts compile remittances as the sum of (1) the remittances sent by those in country greater than a year and (2) the compensation for those in-country for less than a year. In its description of its revised methodology, BEA states that it excludes transfers by the foreign born who have been in the United States for less than 1 year from its measure of remittances; however, BEA uses a U.S.-residency-duration grouping of 0-5 years in its personal remittances calculation. It thus includes both employees who are in the United States for less than or equal to 1 year, and migrants who are in the United States for more than a year, in its estimates of personal remittances. Our analysis determined that BEA's estimates of remittances are therefore potentially overstated by up to \$377 million because they include estimates for approximately 467,000 foreign-born individuals who were in their first year of residency in the United States, according to 2003 ACS data.

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## Other Entities Use Different Estimation Methodologies Resulting in a Range of Remittance Estimates

Some central banks and IDB use a variety of methodologies and data sources to estimate remittances.<sup>12</sup> The central banks of Mexico and the Philippines, two of the major recipients of remittances from the United States, track funds coming into their countries. The IDB, a multilateral organization that provides financing for economic, social, and institutional development projects for Latin America and the Caribbean, estimates remittances on a regional basis—primarily through the use of surveys. The remittance estimates produced by these methodologies vary from each other and from BEA's estimates, thus further illustrating the dependency of estimates on their methods and data.

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<sup>12</sup>We also met with the Asian Development Bank and the African Development Bank; however, these multilateral institutions did not estimate remittances for their respective regions.

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## Central Banks of Mexico and the Philippines Track Remittance Flows into Their Countries

The Central Bank of Mexico, known as the Banco de México (Banxico), tracks remittance flows to Mexico with the help of a regulatory reporting requirement on money transmitters. Since 2003, Mexico's methodology for estimating remittances has required firms that receive remittances to report the amount of money received and the number of transactions conducted between the United States and Mexico on a monthly basis. A Banxico official stated that the firms' systems that channel the information to Banxico are designed to transfer money from person to person and that the firms make the determination if a transaction is a person-to-person transfer. He stated that these systems are not efficient enough for commercial transactions; the likelihood that other types of transactions may be getting into the systems is negligible because the systems that have been developed are designed for personal remittances. The Banxico official stated that Banxico is confident in its estimates because it believes the vast majority of firms (about 90 percent) are reporting and, while some transactions that are not personal remittances may be getting through, this is a very small portion. To track remittances through informal channels such as couriers, at the U.S.-Mexico border Banxico conducts a survey of Mexicans returning to visit relatives. The survey asks questions about funds and goods they are bringing to relatives. However, these individuals, according to the Banxico official, are often reluctant to answer these questions.

The Philippine government has established a formal program whereby it registers and tracks its resident Overseas Filipino Workers (OFW). This program provides data to the government on the type of employment these workers obtain as well as their salaries. The Philippine central bank, known as the Bangko Sentral ng Pilipinas (BSP), estimates remittances channeled into banks, which are already net of living expenses of these workers. However, BSP officials caution that the country source data are not truly reflective of remittances coming from a country, particularly from the United States, because most remittance centers for OFWs (e.g., Saudi Arabia, Japan, and Taiwan) send funds through correspondent banks in the United States, which then send the funds to banks in the Philippines. The BSP only captures the most immediate source of OFWs' funds coming into the Philippines, primarily U.S. correspondent banks. Thus, this methodology overstates the funds being remitted from the United States to the Philippines because it includes funds from other countries, not just from Filipino workers in the United States.

The BSP also recently revised its methodology to track remittances that flow outside of banks using results of the Survey of Overseas Filipinos.

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Specifically, these remittances are funds sent by OFWs through friends and relatives, or amounts brought in by OFWs when they return home. This revision caused the BSP to increase its overall estimate of remittances into the Philippines by \$1.7 billion (20 percent) in 2004. BSP officials stated that they are in the process of updating prior years' figures.<sup>13</sup>

The primary advantages of these tracking methodologies are that they capture actual or projected remittance flows, as well as rapid or sudden changes in the characteristics of remitters—such as the average amount remitted or the frequency of remitting. However, these methods are limited in their ability to capture remittances sent through the informal sector and to distinguish between personal remittances and other types of personal business transactions when money transfer operators and banks do not correctly code the remittance transactions.

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### The IDB Uses a Variety of Sources to Estimate Remittances Flows to Latin America and the Caribbean

Since the year 2000, the Multilateral Investment Fund (MIF) of the IDB has been studying the issue of remittances and their impact on the development of the Latin American and Caribbean region. In addition to using its own researchers, MIF's methodology uses remittance information collected by other researchers. The IDB remittance estimates for selected Latin American and Caribbean countries are obtained from a combination of sources consisting of estimates from selected central banks of recipient member countries judged to have reasonable remittance estimates, transaction information from remittance transfer companies to selected countries, and information obtained from surveys of remittance senders in the United States and remittance recipients in Latin American and Caribbean countries. IDB officials stated that they compare the remittance estimates that they derive from their surveys of remittance recipients in Latin America and the Caribbean with the estimates from the central banks of these countries. These officials also stated that these surveys have allowed them to estimate remittances these countries have received from the United States. According to IDB officials, for countries for which they have not conducted an in-country survey, they use data collected from establishments that facilitate money transfers to each country. These

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<sup>13</sup>The BSP also reports on two categories of OFWs—those that work overseas for more than one year, which they report as workers' remittances, and those who work for less than one year overseas, which they categorize as "compensation of employees." The BSP officials told us they did this to comply with standards set by the IMF for balance of payments compilations.

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officials indicated that data were obtained from a sample of 45 money-transfer businesses involving approximately 14 countries. The amount and frequency of the average remittance sent by residents from the survey countries was used to estimate the total remittance outflow to each country, according to IDB officials. They also indicated that MIF staff work with the researchers to reconcile the various estimates and arrive at country-specific estimates they believe are fairly accurate. For a more detailed description of IDB's methodology, see appendix IV.

The advantage of using this method to estimate remittances is that the information is obtained from establishments that have a vested interest in maintaining accurate data on the amount and volume of remittances. However, estimates relying on reporting of information from remittance providers in the formal financial sector—such as money transfer operators—cannot account for remittances sent through the informal sector (e.g., by couriers or hawalas). In addition, they may not be able to distinguish between personal remittances and other types of personal business transactions if the money transfer operators and banks do not code the remittance transactions correctly. Although the consumer surveys IDB used to derive its estimates collect information directly from remittance senders and receivers, such surveys are difficult to administer because remittance senders may be reluctant to participate in the surveys due to language barriers, legal status, and lack of experience with institutions that administer surveys. IDB officials also stated that surveys only reach individuals with telephones. In addition, with these surveys there often is a discrepancy between the amount of funds remittance senders claim to send and the amount remittance recipients claim to receive. Finally, these surveys can be more costly due to the need to hire experienced survey firms with bilingual staff.

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### Remittance Estimates Made by These Entities Vary

The central banks of Mexico and the Philippines, the IDB, and BEA use different methodologies to estimate remittances, resulting in a range of estimates. For example, in 2003, the Mexican central bank estimated that Mexico received about \$13.4 billion in remittances from the United States and the IDB estimated that Mexico received almost \$12.9 billion in remittances from the United States. In 2003, BEA estimated the amount of remittances from the United States to Mexico at \$8.9 billion.<sup>14</sup> In terms of

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<sup>14</sup>BEA's estimate for Mexico does not include \$6.7 billion in compensation of employees for the foreign born from Mexico that were in the United States for less than one year in 2003.

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remittances from the United States to Latin America and the Caribbean, in 2003, the IDB estimated this to be \$30.1 billion. Although BEA does not publish remittance estimates by region, we aggregated BEA's country-by-country tabulations to estimate remittances to Latin America and the Caribbean, and found this to be \$17.9 billion.

We found that the reasons for the large discrepancies in the IDB and BEA's estimates for Latin America and the Caribbean were primarily due to differences in population size, the percentage of persons that remit, and the average remittance amount per year each used. Our analysis of BEA estimates of remittances from the United States in 2003 to 21 countries for which IDB also makes estimates show that BEA assumes that 54 percent of the foreign born population remits an average of \$2,076 per year as shown in table 3.<sup>15</sup> BEA assumes that the percentage of adult foreign born that remit varies by duration of stay and the absence or presence of children in the household. To determine the \$2,076 that is, on average, remitted per year, we used information from BEA's underlying tabulations and calculated the average remittance per person for the 21 countries. BEA assumes that the percent of income remitted varies by the presence or absence of children, the type of countries of birth (according to economic development), and proximity to the United States. In contrast, based on our analysis of IDB's survey results, 70 percent of percent of adult foreign-born Hispanics remit and on average, they remit \$3,024 per year, as shown in table 3.

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<sup>15</sup>The 21 countries are Argentina, Belize, Bolivia, Brazil, Colombia, Costa Rica, the Dominican Republic, Ecuador, El Salvador, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Peru, Trinidad & Tobago, Uruguay, and Venezuela. We calculated the weighted average of the percentage of adult foreign-born remitters BEA uses for the 21 countries in Latin America and the Caribbean.

**Table 3: Comparison of BEA and IDB Estimates of Remittances to 21 Latin American and Caribbean Countries, 2003**

Number in the population (in millions)	BEA	IDB
	14.7 (Total adult foreign born)	16.7 (Total adult Hispanic population)
Less adjustment to exclude U.S.-born Hispanics who have been found not to remit <sup>a</sup> (in millions)	NA <sup>b</sup>	2.0
Adjusted number of Hispanic foreign-born population	14.7	14.7
Number of Hispanic foreign born who remit	7.8	10.2
Implied percentage of Hispanic foreign born who remit	54%	70% <sup>c</sup>
Average annual remittance sent	\$2,076	\$3,024
<b>Total estimated remittances to 21 Latin American and Caribbean countries (in billions)</b>	<b>\$16.3</b>	<b>\$30.8</b>

Source GAO.

<sup>a</sup>The IDB stated that U.S.-born adult Hispanics do not send remittances.

<sup>b</sup>Not applicable.

<sup>c</sup>The IDB survey of remitters in the United States found that 61 percent of all 16.7 million Hispanics (10.2 million) in the United States remit funds. However, when the U.S.-born adult Hispanics are subtracted from this population—because IDB officials state that they do not remit—then 10.2 million of the 14.7 million foreign-born Hispanics (70 percent) remit funds to their home countries.

## BEA Is Involved in International Efforts to Improve the Collection and Reporting of Remittance Information

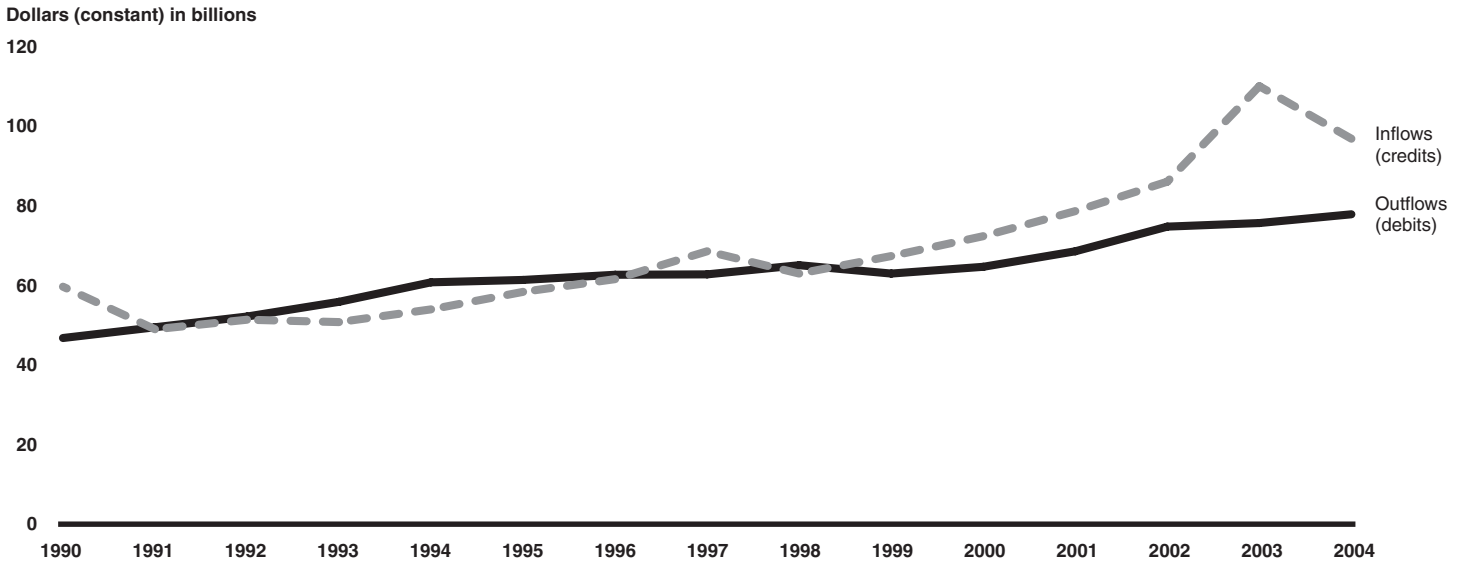
BEA is involved in international efforts that began in January 2005 to try and improve upon the collection and reporting of remittance data; however, it is too early to tell how successful these initiatives will be. Currently, remittance data are incomplete and cannot be reconciled because of inconsistency in the various institutions' methods of collecting and reporting remittance data. Recognizing the importance of remittances and the need for improved data, the governments of the G8 at the Sea Island Summit in 2004 called for the establishment of a working group to improve remittance statistics. BEA is an active member of an international group supporting this effort, which recommended an agreed upon definition of remittances. In June 2006, a new group will also start an effort to improve guidance on collecting and reporting remittance data. BEA expects to be invited to serve on this group.



## International Estimates of Remittances Are Incomplete and Do Not Reconcile

The international estimates of remittances vary by the methods used and the coverage, quality, and reliability of the data, making comparisons of such estimates difficult. In principle, the combined inflows and outflows for all countries should equal zero—as the outflows from one country or international organization become the inflows of another. However, many countries do not provide information on both remittance inflows and outflows, resulting in global remittance figures that do not reconcile. Figure 4 shows the remittance inflows (credits) and outflows (debits) from 1990 through 2003. If global remittance figures reconciled, the lines in this figure would be the same. However, as can be seen from the figure, while the lines were fairly close prior to 1998, since then they have diverged with countries showing remittance inflows (primarily developing countries) larger than remittance outflows (primarily developed countries).

**Figure 4: Differences between Global Remittance Credits and Debits, 1990-2004**



Source: IMF balance of payment statistics.

The IMF accepts member countries' estimates of remittances at their face value because, according to IMF officials, all methods of estimating remittances have their weaknesses. According to IMF officials, the choice of methodology is primarily related to the availability of resources. IMF officials indicated that they were not aware of any country that has

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institutionalized household surveys to generate remittance data. Remittance estimates submitted by IMF member countries do not reveal the methodologies used for the estimates. However, according to IMF officials, most countries report their remittances as residuals of existing data; others simply do not report remittances.

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### International Working Group Was Established in 2005 to Improve Remittance Data

In 2004, at the annual G8 meeting in Sea Island, Georgia, leaders of the G8 countries recognized the important role remittances play and called upon international financial institutions such as the World Bank and the IMF to lead a global effort to improve remittance statistics. As a result, the World Bank, IMF, and the United Nations formed the International Working Group on Improving Data on Remittances. This group delegated the tasks of clarifying concepts and definitions on remittances and addressing compilation issues to other groups. The working group met in January 2005 and included BEA and representatives from key remittance-sending countries, one key remittance-receiving country, and the Organization for Economic Cooperation and Development.

The working group's first objective was to clarify the definition of remittances. The group agreed that the United Nations Technical Subgroup on the Movement of Natural Persons (TSG), of which BEA is a member, should be the forum to discuss improvements in concepts and definitions for remittances. The TSG recommended, among other things, that the "workers' remittances" item in the balance of payments be replaced with a new component called "personal transfers," which would include all current transfers (in cash or in kind) sent or received by resident households to or from nonresident households. This new component would not be based on employment or migration status and would resolve the inconsistencies associated with "workers' remittances."<sup>16</sup> This new definition was discussed at the June 2005 meeting of the IMF Committee on

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<sup>16</sup>The TSG also proposed "net compensation" of employees to be compensation paid to persons working abroad for less than one year in the host country, less taxes on income, social security contributions, and travel and passengers' transportation related to the short-term employment.

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Balance of Payments Statistics.<sup>17</sup> BEA officials stated that they have begun using this new definition; however, it will be included in the publication of the revised Balance of Payments Manual, which is scheduled to be completed in 2008.

The second objective of the working group was to improve guidance on collecting and compiling remittance statistics, including the use of household surveys, if needed. The working group agreed that it would be useful to form a core group of compilers to review methods and develop more detailed guidance for compiling remittances data. Eurostat, the statistical office of the European Communities, offered to host the first meeting in June 2006 in Luxembourg, thereby creating the “Luxembourg Group,” which includes the World Bank and IMF’s statistics department. The Luxembourg Group will review, among other things, the extent to which household survey data can be used to improve balance of payment statistics. BEA expects to be invited to serve on this group. According to the IMF, the prerequisite to the group’s success is the commitment of national compilers to share their methodologies. The progress of this group will be reviewed by the IMF Committee on Balance of Payments Statistics, of which BEA is a member. No date has been set for this group to complete its work.

In the meantime, the international working group will coordinate with a recent project conducted by the Center for Latin America Monetary Studies to improve central bank remittance reporting and procedures. This project is supported by the MIF. The final report of the working group is to be presented by the end of September 2006, so that initial work of the Luxembourg Group can be incorporated.

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## Observations

In recent years, remittances have received growing attention from policy makers because major industrial countries began to understand the magnitude and importance of these flows to developing countries. By their nature, remittance flows are difficult to measure. Some remittances move

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<sup>17</sup>The IMF Committee on Balance of Payments Statistics was established in 1992 to (1) oversee the implementation of the recommendations from other IMF groups investigating the principal sources of discrepancy in global balance of payments statistics published by the IMF, (2) advise the IMF on methodological and compilation issues in the context of balance of payments and international investment position statistics, and (3) foster greater coordination of data collection among countries. The BEA is a member of this committee.

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through informal channels that official data often cannot easily or reliably measure. Countries define remittances differently and use various methodologies to estimate them; it is therefore not surprising that estimates vary widely.

Although there are international efforts in which BEA participates to improve remittance statistics, two issues suggest the challenges facing these efforts. First, current remittance data are incomplete globally and cannot be easily reconciled because of the inconsistency in the methods of collecting and reporting remittance data. Second, for source countries, remittances constitute a small share of their overall economy—thus there may not be enough incentives for these countries to improve their remittance estimates. For recipient countries, remittances constitute a larger share of the economy; but these countries lack the resources to improve their statistics. International efforts to improve remittance statistics have begun recently, and it is too soon to tell whether these efforts will improve the accuracy of remittance statistics.

In the United States, remittance estimates are important for agencies such as Treasury and the Federal Reserve; more accurate remittance estimates could help them better target their financial infrastructure and automated-clearinghouse remittances programs. With better data on remittances, the U.S. government could make better decisions about how much (and what kind) of development assistance to provide, and U.S. companies could make better decisions regarding foreign direct investment. As remittance flows from the United States continue to grow, U.S. policy makers may want to explore options for improving the accuracy of U.S. remittance statistics—such as conducting a new survey to determine the remitting behavior of U.S. immigrants, or adding specific questions to current government surveys to obtain better information.

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## Agency Comments and Our Evaluation

The Departments of Commerce and the Treasury provided written comments on the draft report, which are reproduced in appendixes V and VI, respectively. Commerce also provided technical comments, which we incorporated into the report as appropriate.

Treasury concurred with our observations, especially on the need for more accurate remittance data to provide policy makers with the information necessary to improve their decision-making process. Commerce concurred with most of our observations. Specifically, they concurred that estimates of remittances from the United States derived by BEA and those of foreign

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governments and international organizations differ substantially and that there are several methodological reasons for these differences. Commerce also concurred that more accurate estimates would enable users of remittance data to make better informed decisions.

Commerce, however, stated its view that BEA's estimates are lower than most of the others we discuss because we compare BEA's estimate of personal gifts to foreign residents (personal transfers) with much broader estimates of remittances, which include compensation paid to foreign workers who are temporarily employed in the United States. Commerce believes that a substantial portion of the differences between BEA's estimates and those of other government or international organizations is accounted for by this definitional difference. Contrary to Commerce's view, compensation paid to foreign workers temporarily employed in the United States was not included in the remittances estimates with which we compared BEA's personal transfers estimates. We therefore do not believe that the differences among the estimates we discuss in our report are due to this definitional difference. Commerce further stated that some countries may overestimate their receipts of remittances from the United States because remittances may be channeled through banks in the United States from remitters not living in the United States. Of the countries we discuss in this report, we found this only to be true for the Philippines and, for this reason, we do not compare BEA's remittances estimate to that of the central bank of the Philippines. As we discuss in our report, efforts are underway to improve remittance statistics, which may help make estimates more comparable in the future.

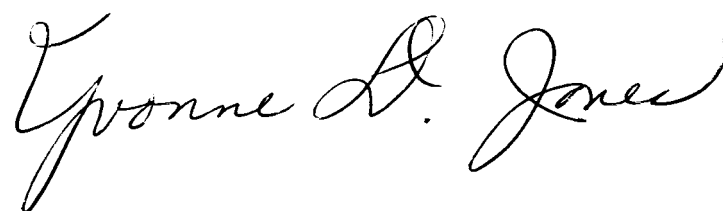
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We are sending copies of this report to the Department of Commerce, Treasury, the Chairman and Ranking Minority Member of the House Committee on Financial Services, and other interested congressional committees. We will also make copies available to others on request. In addition, this report will be available at no cost on our Web site at <http://www.gao.gov>.

If you or your staff have any questions regarding this report, please contact me at (202) 512-2717 or [jonesy@gao.gov](mailto:jonesy@gao.gov). Contact points for our offices of Congressional Relations and Public Affairs may be found on the last page

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of this report. GAO staff who made major contributions to this report are listed in appendix VII.

A handwritten signature in black ink that reads "Yvonne D. Jones". The signature is written in a cursive style with a large initial 'Y' and a distinct 'D'.

Yvonne D. Jones  
Director, Financial Markets  
and Community Investment

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# Objectives, Scope, and Methodology

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Our reporting objectives were to examine (1) the methodology the Bureau of Economic Analysis (BEA) uses to develop the official U.S. estimates on the volume of remittances from the United States, (2) methodologies used by other countries and multilateral institutions to estimate remittances from the United States, and (3) international efforts to improve the collection and reporting of remittance data.

To understand the methodology BEA used to derive its estimate of remittances from the United States, we met several times with BEA officials responsible for developing the estimate. They provided us with the 2003 estimate on the total volume of remittances from the United States to the rest of the world—and explained how they provide this number to the International Monetary Fund (IMF)—so that the U.S. figures can be presented in the IMF’s balance of payments statistics. We also obtained documentation describing BEA’s methodology before 2005, including BEA’s *Survey of Current Business* and other written documentation. BEA officials provided us with examples of the various data used in their model to calculate their remittance estimate. In addition, we provided BEA with numerous follow-up questions about their methodology, and they provided us with written responses. To understand BEA’s revised methodology, we obtained relevant documentation from BEA and provided follow-up questions to BEA. We also met with the U.S. Census Bureau to understand the data underlying BEA’s methodology for estimating remittances. To understand how we evaluated the statistical reliability of BEA’s estimate for 2003, see appendix III. We interviewed remittance experts from the IMF, World Bank, Inter-American Development Bank (IDB), and academia to obtain their views on BEA’s (and alternative) methodologies.

To understand the methodologies used by other countries and multilateral institutions to estimate U.S. remittances to specific countries and regions, we met with officials from the IDB and their external consultant, the Asian Development Bank, the African Development Bank, as well as the Mexican and Philippine Central Banks. The IDB provided remittance estimates from the United States to specific countries in Latin America, the Caribbean, and to the region as a whole. The Asian and African Development Bank do not provide estimates for their respective regions. The Central Bank of Mexico provided estimates of remittances received by Mexico from the United States, while the Central Bank of the Philippines provided estimates of remittances received by the Philippines from the United States. In meetings with these entities, we obtained an understanding of the methodologies used to estimate remittances, the reasons for using these methodologies, and their strengths and potential limitations. We also obtained a report that

described IDB's methodology. Further, we obtained government regulations from Mexico and the Philippines to understand what financial institutions are required to report to Central Banks so that they can estimate remittances. To compare remittance estimates obtained from the Mexican Central Bank and IDB with those of BEA, we obtained BEA's 2003 estimates of remittances to specific countries. BEA officials cautioned us that the estimates to specific countries are less reliable than their overall remittance estimate and stated that these numbers should not be considered BEA estimates to specific countries.

Given our understanding that remittance estimates vary for a number of reasons and that international efforts are under way to improve remittance statistics, it was not possible for us to cross check the estimates of remittances from the United States against any accurate known amount. Because of this, for the purposes of this report, we focused on understanding the methodologies used by BEA, IDB, and the Central Banks of Mexico and the Philippines, to estimate remittance from the United States. We also focused on understanding the strengths and limitations of the methodologies of the BEA and the other entities to obtain a better understanding of the reasonableness of their approaches to estimating remittances. We presented BEA's estimates and the estimates of IDB and the Central Bank of Mexico to show the range of estimates generated from different methodologies, rather than as a statement of their being precise measurements of remittances. We chose not to present the Central Bank of the Philippine's estimate of remittances because central bank officials stated that their current methodology could not be used to report on remittances solely received from the United States.

To obtain a global perspective on international efforts to improve the collection and reporting of remittances, we met with officials from the IMF, World Bank, IDB, Asian Development Bank, African Development Bank, and experts in the field of remittances. We reviewed IMF documents on remittances as they are discussed in the balance of payments framework and reviewed IMF balance of payments statistics to get a sense for which countries regularly report on remittances. We obtained limited documentation (e.g., minutes from meetings) on international efforts to improve the collection and reporting of remittances. BEA and the U.S. Department of the Treasury (Treasury) also provided us with descriptions of these international efforts and identified the U.S. government officials that participate in these international bodies.



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**Appendix I**  
**Objectives, Scope, and Methodology**

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Our work was performed in San Francisco, California; and Washington, D.C., from December 2004 to March 2006 in accordance with generally accepted government auditing standards.

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# BEA's Methodology for Estimating Remittances

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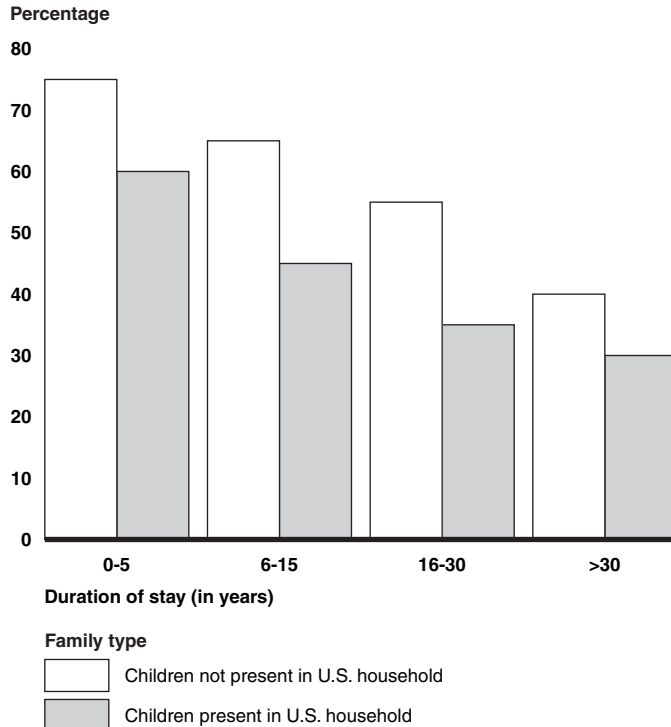
BEA's model to estimate remittances combines data on the number of the adult foreign-born population living in the United States, the percentage of the adult foreign-born population that remits, the income of the adult foreign-born population, and the percentage of income that is remitted by the adult foreign-born population.<sup>1</sup> BEA first multiplies the foreign-born population, arrayed by selected demographic characteristics, by the percentage of the foreign-born population that remits 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 to obtain per capita remittances. Finally, BEA multiplies per capita remittances by the population of remitters to obtain total personal transfers.

BEA obtains estimates on the adult foreign-born population by place of birth and their average income from the American Community Survey (ACS), arranged by duration of stay in the United States, gender, and presence of children in the household. BEA obtains estimates of the percentage of the adult foreign-born population that send remittances to their country of origin from various academic studies, in addition to the 1989 Legalized Population Survey (LPS1) and the 1992 Legalized Population Follow-Up Survey (LPS2); however, the estimates it uses cannot be directly tracked to these source documents. BEA obtains these proportions by making assumptions based on its judgment. BEA assumes that the place of birth of the adult foreign-born population does not affect the likelihood of remitting but that it does affect the percentage of income remitted. BEA also assumes that, once the presence of children in the household and the duration of stay are accounted for, men and women are equally likely to remit. In effect, only the presence of children in the household and the duration of stay determines the percentage of the adult foreign-born population that remit to their countries of birth under these assumptions, as shown in figure 5.

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<sup>1</sup>As indicated earlier, this report only focuses on personal transfers, which we are calling remittances.

**Figure 5: BEA Values for the Percentage of the Adult Foreign-Born Population in the United States That Send Remittances**

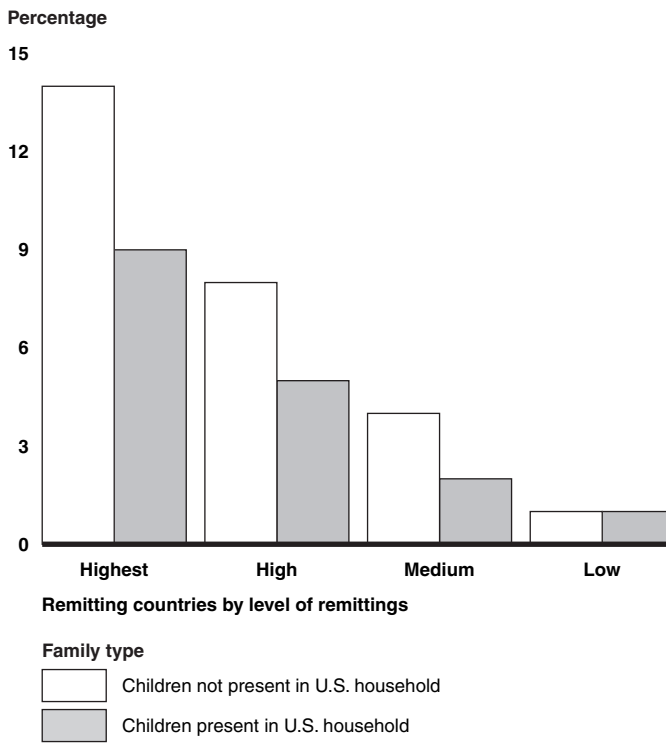


Source: BEA.

To determine the percentage of income that the adult foreign-born population remits, BEA makes assumptions about the development status and proximity of the country of origin of the adult foreign-born population, along with the presence of children in the U.S. household. BEA groups countries of origin into four categories indicating their propensity to send remittances and representing highest-remitting, high-remitting, medium-remitting, and low-remitting countries of birth. The highest-remitting countries are closest to the United States, while other developing countries are either high-remitting or middle-remitting, depending on their development status. Low-remitting countries are generally developed economies. Figure 6 shows that the percentage of income remitted varies by the presence of children and country groupings. Although average incomes are lower for women than for men, BEA assumes that the percentage of income remitted does not vary by gender. Furthermore, BEA assumes the duration of stay is negatively associated with likelihood to

remit—but that it has no effect on the percentage remitted. Also, BEA assumes that there are no variations in the portion remitted for countries designated as low remitting.

**Figure 6: Percentage of Income Remitted by Category**



Source: BEA.

Table 4 shows the application of BEA's methodology in estimating remittances from the United States in 2003. As can be seen from table 4, estimated total remittances are \$28 billion. Also, as can be seen in table 4, in 2003, the Latin America and Caribbean region was the largest recipient region of remittances from the United States. Remittances to Asia and Africa represented approximately 24 percent and 4 percent of the total for the United States, respectively.

**Appendix II**  
**BEA's Methodology for Estimating**  
**Remittances**

**Table 4: Regional and Sub-Regional Remittances in 2003 as Estimated Using BEA's Underlying Country-by-Country Tabulations**

Region or sub-region	Estimate of remittances (in millions of U.S. dollars)
Africa	\$1,003
North Africa	236
Africa (other)	768
Latin America and the Caribbean	17,914
Central America	11,487
Caribbean	4,360
South America	2,068
Europe	2,202
European Union	550
Eastern Europe & Transition Countries	1,613
Europe (other)	39
Asia	6,616
Eastern Asia	1,585
Southern Asia	1,613
South-Eastern Asia	3,055
Near East	313
Asia (other)	49
Oceania	103
Australia & New Zealand	26
Oceania (other)	77
North America	194
<b>Total</b>	<b>\$28,033</b>

Source: GAO calculations using BEA underlying country-by-country tabulations.

Note: BEA officials stated that they would correct the total from \$28.2 billion to \$28.033 billion.

**BEA's Estimate of Remittances Includes Remittances from Some of the Foreign Born Who Have Been in the United States for Less Than One Year**

BEA's revised methodology uses a U.S. residency duration of 0-5 years as its first category. This means that it includes both the foreign-born population, who are in the United States for less than or equal to 1 year, and those who are in the United States for more than a year. The definition of "remittances" is the portion of income sent as remittances by those who have resided in the United States for more than one year, thus excluding the foreign-born population residing in the United States for less than one year. BEA's estimate of remittances is in effect overstated, because it

includes the foreign-born population that has resided in the United States for less than a year. In contrast, "compensation of employees" is the wages and salaries earned by individuals in economies other than those in which they are residents. As a result, compensation of employees, which applies only to individuals away from their place of origin for less than a year, may be double counted. Furthermore, the inclusion of the foreign born who have resided in the United States for less than one year would overstate estimates of total remittances (personal remittances and compensation of employees) as some portion of the compensation of employees would be double counted. BEA officials stated that their objective is to estimate remittances for individuals who have been in the United States for more than one year and those who have been in the United States for less than a year but intend to stay for more than a year. They stated that the ACS surveyed only individuals who indicated the United States is their "usual place of residence," which may exclude temporary residents, i.e., those who have been in the United States for less than a year.

ACS documents show that individuals are surveyed at their "current residence"<sup>2</sup> and that one of the goals of the ACS is to identify whether individuals are residing at the "current residence" or their "usual place of residence." Thus, the ACS does not exclude individuals for which the United States is not their "usual place of residence." The ACS manual on residency rules states that the term "current residence" is unique to the ACS; most other surveys, including the decennial census, use "usual residence," as defined as the place where a person lives and sleeps most of the time or considers to be his or her usual residence. ACS defines current residence as one place of residence at any point in time, but this residence does not have to be the same place throughout the year. The criteria used to determine a person's current residence is based upon a "2-month rule" stating that (1) if a person is staying in a sample unit at the time of the survey contact and is staying there for more than 2 months, he or she is a current resident of the unit; (2) if a person who usually lives in the unit is away for more than 2 months at the time of the survey, he or she is not a current resident of the unit; and (3) if anyone is staying in the unit at the time of contact who has no other place where they usually stay longer than

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<sup>2</sup>See *American Community Survey: Field Representative's Manual*, U.S. Census Bureau, July 2004, Chapter 2.

**Appendix II**  
**BEA's Methodology for Estimating**  
**Remittances**

2 months, he or she is a current resident of the unit regardless of how long he or she is staying there.<sup>3</sup>

We recalculated BEA's estimates of 2003 remittances excluding the foreign born who have resided in the United States for less than a year. This calculation resulted in a reduction of \$377 million in BEA's 2003 estimate for remittances from the United States (see table 5).

**Table 5: Change in the Estimate of Remittances by Excluding Those in the United States for Less Than 1 Year**

Region or sub-region	Correction		
	Corrected estimates for 2003 (millions of U.S. dollars)	(Millions of U.S. dollars)	Percentage change
Africa	\$990	\$13.5	1.3%
Latin America and the Caribbean	17,654	260.4	1.5
Central America	11,293	193.6	1.7
Caribbean	4,320	39.8	0.9
South America	2,041	27.0	1.3
Europe	2,174	28.1	1.3
Asia	6,549	67.1	1.0
Oceania	100	3.2	3.1
North America	190	4.1	2.1
<b>Total</b>	<b>27,656</b>	<b>376.5</b>	<b>1.3</b>

Source: GAO calculation using information from the 2003 ACS, and BEA information on underlying tabulation of personal remittances.

Note: Totals may not add due to rounding.

<sup>3</sup>ACS residency rules also show that there are only three situations when "current residence" is not dictated by the "2-month rule": pre-college children away in school (considered residents of their parental home), children in joint custody agreements (considered residents of whomever they are staying with at the time of survey contact), and commuter personnel who stay in a residence close to their work but return regularly to another residence, usually to be with family (considered to be current residents of the family residence and not the work-related residence).

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# Analysis of the Sensitivity of BEA's Estimate to Judgmentally Determined Variables on the Remitting Behavior of the Foreign Born

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BEA publishes single-value estimates of remittances to the rest of the world by foreign-born U.S. residents. To evaluate the statistical reliability of the estimate for 2003, we derived the estimate's probable range and its corresponding breakdown into regional estimates. To accomplish this, we obtained details of the BEA's underlying tabulations of remittances by country. We replicated the BEA methodology to obtain BEA's estimate for the world and for each country in its underlying tabulation. In particular, we used BEA's underlying tabulation and included additional information (e.g., the standard deviation and the shape of the distribution of each data series) from the sources that BEA primarily used to arrive at its estimate. We calculated the respective standard deviations of the values that BEA uses for the propensity to remit and the percentage of the foreign born that remit.

BEA uses a variety of sources to estimate the propensity of the foreign born to remit and the percentage of the foreign born that remit. However, BEA stated that the values chosen cannot be linked to any specific source. BEA primarily used the LPS, a survey mandated by the Immigration Reform and Control Act of 1986 to estimate the portion of income that the foreign born in the United States were likely to remit; thus, we also relied on this data. We assumed that the distribution around the means of the variables used in the BEA methodology were lognormal to satisfy (1) the nonnegativity of the values used and (2) a desired bell-shaped distribution for the estimates. We converted the BEA estimation process from one that relied solely on the averages of the variables underlying the BEA methodology to one that accounts for the variation around the mean and its distribution. We used a Monte Carlo statistical technique—a technique that repeatedly and randomly samples from the underlying data—to obtain a range of possible values for each estimate due to the uncertainty in BEA's judgmentally determined variables on the foreign born propensities to remit and percentage of the foreign born that remit.

Table 6 shows the regional breakdown of BEA's 2003 estimate and the statistically derived range for these estimates. In table 6, we show in the column labeled "BEA point estimate"—the regional components of BEA's global estimate in 2003—obtained by aggregating the underlying country-by-country tabulations. We also show in the following two columns the range of estimates obtained by our uncertainty analysis, assuming that this uncertainty is only due to BEA's judgmentally determined variables. In table 6, BEA reported \$28 billion in total remittances from the United States for 2003; however, we estimate that the range for 90 percent of the



**Appendix III**  
**Analysis of the Sensitivity of BEA's Estimate**  
**to Judgmentally Determined Variables on the**  
**Remitting Behavior of the Foreign Born**

remittance estimates from the United States would be between \$17.3 and \$35.9 billion.

**Table 6: Range of Estimates in Regional Breakdown of BEA Estimate of Remittances in 2003 (20,000 trials)**

	BEA point estimate (millions of U.S. dollars)	90 percent of range of estimates when the uncertainty is due to BEA judgmentally determined variables	
<b>Africa</b>	<b>\$1,003</b>	<b>\$510</b>	<b>- \$1,547</b>
North Africa	236	112	- 368
Africa (other)	768	394	- 1,196
<b>Latin America and the Caribbean</b>	<b>\$17,914</b>	<b>\$10,020</b>	<b>- \$24,842</b>
Central America	11,487	6,233	- 16,611
Caribbean	4,360	2,372	- 5,852
South America	2,068	1,252	- 2,637
<b>Europe</b>	<b>\$2,202</b>	<b>\$1,226</b>	<b>- \$2,932</b>
European Union	550	242	- 795
Eastern Europe & Transition Countries	1,613	847	- 2,322
Europe (other)	39	19	- 53
<b>Asia</b>	<b>\$6,616</b>	<b>\$3,702</b>	<b>- \$9,372</b>
Eastern Asia	1,585	907	- 2,154
Southern Asia	1,613	898	- 2,371
South-Eastern Asia	3,055	1,474	- 4,832
Near East	313	170	- 450
Asia (other)	49	23	- 75
<b>Oceania</b>	<b>\$103</b>	<b>\$58</b>	<b>- \$144</b>
Australia & New Zealand	26	13	- 39
Oceania (other)	77	38	- 118
<b>North America</b>	<b>\$194</b>	<b>\$101</b>	<b>- \$264</b>
<b>Total</b>	<b>\$28,033</b>	<b>\$17,265</b>	<b>- \$35,909</b>

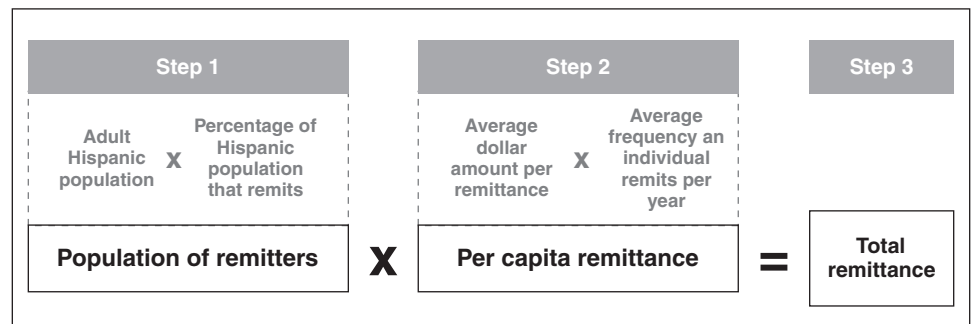
Source: GAO calculations using the underlying tabulations of BEA's 2003 remittance estimate.

Note: Totals may not add due to rounding. Uncertainty in BEA judgmentally determined variables means uncertainty due to the propensity of the foreign born to remit and the percentage of the foreign born that remit. BEA relies on estimates of the propensity to remit of the foreign born and the percentage of the foreign born that remit from a variety of sources, but states that the values chosen cannot be linked to any specific source. The 90-percent range excludes the highest and lowest 5-percentile of estimates to reduce the effects of outliers.

# IDB Remittance Estimation Methodology

To estimate remittances from the United States to Latin America in 2003, the IDB contracted researchers to survey Latin Americans aged 18 years or older and living in the United States. These researchers queried Latin American immigrants living in various states of the United States about their remittance experiences. The survey interviewed 3,802 households in 37 states and the District of Columbia from January through April 2004.<sup>1</sup> The survey showed that 61 percent of Latin Americans send remittances to their countries of origin, sending an average of \$240 approximately 12.6 times per year. IDB extrapolated the results of the survey to the total population of adult Latin American immigrants in the United States—estimated at 16.9 million in 2003—and estimated remittances from the United States to Latin America to be \$30.1 billion for that year. Figure 7 provides a diagram of the methodology IDB used to arrive at the \$30.1 billion estimate. According to IDB, the estimate captured remittance flows through the formal and informal sectors. The IDB also used the survey to estimate remittances from each of the 37 states and the District of Columbia. To obtain the state-by-state remittance estimates, the IDB obtained estimates for the average amount remitted and the number of times sent in one year by the Latin American immigrant population in each state and the percentage of the Latin American immigrant population in each state that sends remittances.

**Figure 7: IDB Methodology for Estimating Remittances from the United States to Latin America, 2003**



Source: IDB.

<sup>1</sup>The margin of error was plus or minus 2 percent, according to IDB. The survey did not include remittances to Haiti and the English-speaking Caribbean.

The IDB remittance estimates for selected Latin American and Caribbean countries are obtained from a combination of sources consisting of estimates from selected central banks of recipient member countries judged to have reasonable remittance estimates, transaction information from remittance transfer companies to selected countries, and from information obtained from researchers' surveys of remittance senders in the United States and remittance recipients in Latin American and Caribbean countries. According to IDB officials, for countries where no in-country survey has been conducted, data from establishments facilitating money transfers to each country was used. These officials indicated that data were obtained from a sample of 45 money transfer businesses to approximately 14 countries. The amount and frequency of the average remittance sent by residents from the survey countries was used to estimate the total remittance outflow to each country, according to IDB officials. They also indicated that Multilateral Investment Fund (MIF) staff work with the researchers to reconcile the various estimates and arrive at country-specific estimates. Table 7 shows the IDB estimate of remittances that 21 Latin American and Caribbean countries received in total in 2003, and from the United States the same year.

**Table 7: IDB/MIF Estimates of Remittances to Latin American and Caribbean Countries, 2003**

<b>Country</b>	<b>IDB/MIF estimate for total remittances (in millions of U.S. dollars)</b>	<b>IDB/MIF estimate for remittances from the U.S. (in millions of U.S. dollars)</b>	<b>Remittances from the U.S. as a percentage of the total</b>
Argentina	\$225	\$180	80%
Belize	73	58	79
Bolivia	340	240	71
Brazil	5,200	2,600	50
Colombia	3,067	2,147	70
Cost Rica	306	245	80
Dominican Rep.	2,217	1,773	80
Ecuador	1,656	994	60
El Salvador	2,316	2,085	90
Guatemala	2,106	1,685	80
Guyana	137	109	80
Haiti	977	879	90

**Appendix IV**  
**IDB Remittance Estimation Methodology**

(Continued From Previous Page)

<b>Country</b>	<b>IDB/MIF estimate for total remittances (in millions of U.S. dollars)</b>	<b>IDB/MIF estimate for remittances from the U.S. (in millions of U.S. dollars)</b>	<b>Remittances from the U.S. as a percentage of the total</b>
Honduras	862	775	90
Jamaica	1,425	1,069	75
Mexico	13,266	12,868	97
Nicaragua	788	709	90
Panama	220	176	80
Peru	1,295	777	60
Trinidad & Tobago	88	71	81
Uruguay	42	29	69
Venezuela	247	173	70
Sub-Total	36,853	29,642	80
Rest of Latin America and Caribbean countries	1,240	992	80
<b>Latin America and Caribbean Total</b>	<b>\$38,093</b>	<b>\$30,634</b>	<b>80</b>

Source: IDB/MIF, *Sending Money Home: Remittances to Latin America and the Caribbean*, Washington, D.C.: (May 2004).

As indicated earlier, the IDB and BEA used different methodologies to estimate remittances, resulting in a range of estimates. While, in most cases, BEA provides only a global estimate of remittances and not bilateral estimates, BEA provided us with country-by-country tabulations that enabled us to construct estimates for the same 21 countries that IDB provided estimates for in 2003. As shown in table 8, IDB and BEA's estimates vary; IDB's estimates in general tend to be higher than estimates from BEA's underlying country tables. However, for Guyana, Panama, and Trinidad and Tobago, BEA's estimates are higher. The last column computes the difference between the estimates for each country as a percentage of the average of the estimates.<sup>2</sup> The average percentage difference is 72 percent, with a low of 7 percent for Jamaica and a high of 168 percent for Brazil.

<sup>2</sup>For example, the difference between IDB and BEA remittance estimates for Argentina is \$81 million. The average remittance estimate is  $(180+99)/2 = \$139.5$  million. The fraction  $(81/139.5)$  is about 58 percent.

**Appendix IV**  
**IDB Remittance Estimation Methodology**

**Table 8: Percentage Difference between BEA and IDB Estimates of Remittances from the United States to Selected Latin American and Caribbean Countries, 2003**

Millions of dollars

	<b>IDB estimate of remittances from the U.S.</b>	<b>Estimates from BEA underlying country tables</b>	<b>Percentage difference between IDB and BEA estimates</b>
Argentina	\$180	\$99	58%
Belize	58	43	30
Bolivia	240	98	84
Brazil	2,600	223	168
Colombia	2,147	740	98
Cost Rica	245	99	85
Dominican Rep.	1,773	700	87
Ecuador	994	478	70
El Salvador	2,085	1,013	69
Guatemala	1,685	611	94
Guyana	109	255	80
Haiti	879	630	33
Honduras	775	308	86
Jamaica	1,069	992	7
Mexico	12,868	8,905	36
Nicaragua	709	290	84
Panama	176	217	21
Peru	777	290	91
Trinidad & Tobago	71	205	97
Uruguay	29	22	28
Venezuela	173	61	96

Source: GAO analysis of information provided by IDB/MIF and BEA.

# Comments from the Department of Commerce

Note: GAO comments supplementing those in the report text appear at the end of this appendix.



**THE SECRETARY OF COMMERCE**  
Washington, D.C. 20230

March 10, 2006

Ms. Yvonne D. Jones, Director  
Financial Markets and Community Investments  
U.S. Government Accountability Office  
441 G Street, NW  
Washington, DC 20548

Dear Ms. Jones:

The U.S. Department of Commerce appreciates the opportunity to comment on the U.S. Government Accountability Office (GAO) draft report, *International Remittances: Different Estimation Methodologies Produce Different Results* (GAO 06-210). I enclose the Department's comments on this report.

Sincerely,

A handwritten signature in black ink, appearing to read "Carlos M. Gutierrez".  
Carlos M. Gutierrez

Enclosure

**Comments from the U.S. Department of Commerce**  
**Regarding the U.S. Government Accountability Office (GAO) Draft Report**  
**Entitled *International Remittances: Different Estimation Methodologies Produce***  
***Different Results***

GAO's draft report compares BEA's estimates of remittances with those of foreign governments and international organizations, and observes that estimates may differ substantially. It also observes that more accurate estimates would enable data users to make better informed decisions. We agree with both of these observations.

The BEA estimates are lower than most others in the GAO report. One reason for this difference is that GAO uses BEA's estimate of personal gifts to foreign residents and compares it to much broader estimates of remittances that include compensation paid to foreign workers who are temporarily employed in the United States. A substantial portion of the difference between BEA's estimate and those of the other government or international organization is accounted for by this definitional difference.

In addition, as GAO correctly explains, there are several methodological reasons for differences between estimates. For example, some countries base their estimates on information from their banking sector, and this may result in an over-estimate of their receipts of remittances from the United States, 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 with the United States.

**Additional Specific Comments**

1. Highlights page, 2<sup>nd</sup> paragraph, last 2 sentences – These sentences compare an IDB estimate of remittances from the United States to Latin America (\$30.6 billion) to BEA data (\$17.9 billion). However, these estimates differ partly because the IDB estimate includes “net compensation” of foreign workers and the BEA estimate does not. Also, the IDB's estimates by individual country are substantially derived from data reported by central banks and private money transfer establishments located in remittance receiving countries. As the GAO report notes later, such estimates could be over-stated, partly 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 with the United States. If you do not revise the report to include BEA's estimates of compensation in the comparison, we suggest replacing the last 2 sentence in the 2<sup>nd</sup> paragraph of the Highlights and adding a new concluding sentence, as follows:

“The Inter-American Development Bank 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 – and estimated remittances from the United States to Latin America to be \$30.6 billion in 2003. We aggregated BEA's data to estimate remittances to this region to be \$17.9 billion. Some reasons for this difference are that the BEA estimate is based on a narrower definition, and data provided by

See comment 1.

**Appendix V**  
**Comments from the Department of**  
**Commerce**

foreign central banks and financial establishments are sometimes overstated (U.S. correspondent banks are often used in transmitting funds even if the sender is not living in or otherwise connected with the United States).”

See comment 2.

Also in the Highlights section, your chart places Mexico in Central America. Both on strict geographic definitions, and on policy grounds (SPP), Mexico is part of North America. We suggest GAO revise the chart by either including Mexico in the North America bar or creating a separate bar for Mexico.

Now on page 2.  
See comment 3.

2. Page 4, 1<sup>st</sup> full paragraph, 3<sup>rd</sup> sentence – “we examined (1) the methodology that the Bureau of Economic Analysis uses to develop the official U.S. estimates of remittances from the United States.” To develop an estimate that corresponds to GAO’s definition of remittances, BEA’s estimates of personal transfers and compensation of employees (i.e., compensation of foreign workers net of their expenditures in the United States) should be summed. The exclusion of the latter component results in an understatement of BEA’s estimate by \$4 billion in 2003.

Now on page 2.  
See comment 4.

3. Page 4, footnote 2 – this footnote says that GAO uses the term remittances “to refer to funds transferred by foreign-born individuals to their home countries from the United States.” Again, the exclusion of BEA’s net compensation estimate results in an imperfect comparison. BEA has confirmed with Bank of Mexico officials (February 2006) that Mexico’s estimates of remittances include net compensation of migrant Mexican workers in the United States. If BEA’s estimate of net compensation involving just these migrant Mexican workers (\$3.1 billion in 2003) were added to BEA’s estimates of personal transfers to Mexico, the BEA estimate for 2003 would be \$12.0 billion, compared with the Mexican estimate of \$12.9 billion. Nearly four-fifths of the difference between the BEA and Mexican estimates would be eliminated with this adjustment.

4. Page 5, top partial paragraph – In the 1<sup>st</sup> line, we would prefer if this said that “...because that is a time period for which BEA has statistically reliable data...” (rather than saying that it is “the” time period for which BEA has statistically reliable data).

Same paragraph, last line – it says that the work was conducted from January 2005 to March 2006. However, the last paragraph of page 34 says that the work began in December 2004.

5. Page 5, last paragraph, 5<sup>th</sup> sentence – This sentence says that BEA “...revised its estimates back to 1992 using this new approach...” BEA revised its estimate of personal transfers back to 1991.

Now on page 4, 36-37.

6. Page 6, top partial paragraph, next-to-last sentence – here, and also in appendix III (pages 42-44), GAO says that it used a statistical technique “to obtain a range for 90 percent of possible estimates and determined that estimated remittances from the United States could range in value from \$17.3 billion to \$35.9 billion.” We have the following comments.

See comment 5.



**Appendix V**  
**Comments from the Department of**  
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The purpose of the Monte Carlo technique was to examine the sensitivity of the BEA estimate to the judgments it makes in determining the means that are used to compute its estimate. The data that are used in the GAO analysis are unclear as are the particulars of the modeling effort. The main point seems to be that BEA relies solely on the computed mean without considering any variance and that this will be remedied by the simulation that is conducted.

To conduct the simulation, a model of the data generating process must be formed. The assumption in appendix III is that the means are distributed with a lognormal distribution. The shape of the lognormal distribution is crucially dependent on the standard deviation assumed. In particular the lognormal may not be symmetric about the mean for some values of the standard deviation and in fact can be quite skewed. The second paragraph of the appendix does not describe where the variances come from and so it is difficult to evaluate the modeled data generating process.

In any case, the last sentence of the appendix leaves one with the impression that there is some probability that the BEA estimate could have been substantially different and should be accordingly viewed. The table below repeats some of the information from Table 6, and computes the ratio of the BEA estimate to the mid point of the intervals in the fifth column. As shown, the BEA estimate is on average within 3 percent of the mid point of the ranges for the listed areas. Assuming that the underlying distribution is symmetric, the implication is that there is a very small probability that the BEA estimate would be near the end points of the intervals, and, therefore, these end points should not be viewed as equally plausible or competing estimates.

Computation of means of intervals					
	BEA estimate	Low end point	High end point	Mid pt	ratio of BEA estimate to mid pt
Africa	1003	510	1547	1028.5	0.975207
Latin Am	17914	10020	24842	17431	1.027709
Europe	2202	1226	2932	2079	1.059163
Asia	6616	3702	9372	6537	1.012085
Oceania	103	58	144	101	1.019802
North Am	194	101	264	182.5	1.063014
Average					1.026
World	28033	17265	35909	26587	1.054387

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**Appendix V**  
**Comments from the Department of**  
**Commerce**

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Now on pages 4, 15, and  
33-35.

See comment 6.

7. Page 6, top partial paragraph, last sentence; page 19, last paragraph; and pages 38-41—GAO highlights a possible double count in BEA’s estimates throughout the draft report. We have the following comments.

For the purpose of this paper, GAO uses the term *remittances* to refer to BEA’s estimate of personal transfers. On the pages cited above, GAO states that BEA’s estimate of remittances appears to double count certain transactions, and it quantifies the amount of the double count at \$377 million. This leaves the impression that BEA’s estimates of personal transfers contain a double count of \$377 million. However, any double count that may exist probably almost entirely involves another component of the balance of payments accounts – compensation – that GAO does not use in this report.

If GAO’s estimate of the size of the double count is correct, it is a small number – less than 2 percent of total personal transfers and only about 1 percent of personal remittances (personal transfer plus net compensation). Also, BEA believes that the actual double count would round to zero percent of remittances if correct concepts and values are used (this is discussed later). Our concern is that the GAO report devotes several pages of text to this small issue, thereby conveying the impression that double counting is a significant concern.

Now on pages 33-34.

GAO concludes that a double count exists because the definition of remittances that it uses (bottom of page 38/top of page 39) is “...the portion of income sent as remittances by those who have resided in the United States for more than one year, thus excluding the foreign-born population residing in the United States for less than one year. BEA’s estimate of remittances is in effect overstated because it includes the foreign-born population that has resided in the United States for less than a year.” Similar statements appear on page 19 of the report. However, GAO is using an incorrect definition. (We acknowledge that the GAO definition is sometimes used as a shortened version of the correct definition, but it is not complete.) International compilation manuals that the United States and most other countries follow (for example, see paragraph 63 of the *Balance of Payments Manual*) state that a person should be considered a resident of the country in which that person is living, provided s/he “has already engaged in economic activities and transactions on a significant scale in the country for one year or more, or if the [person] intends to do so.”

Now on page 15.

Thus, under international statistical guidelines that BEA follows, persons surveyed by the American Community Survey (ACS) who have lived in the United States for less than a year should be treated as U.S. residents if they intend to remain in the United States for at least a year. GAO’s blanket rejection of data pertaining to all persons resident in the United States for less than 1 year results in rejecting too much data. Many persons who report on the ACS in the less-than-1-year residency category may plan to remain in the United States for at least 1 year. Further, BEA cannot be sure of the direction of overall potential bias in the ACS – there could be as many people who ideally would be counted as residents on the ACS, but who are not, as those who ideally would not be counted as residents, but who are counted. BEA does agree that the residency question in the ACS is not “perfect” for BEA’s statistical purposes, but the problems with the survey appear to

be quite small, and without carefully examining the responding population, it is unclear what adjustment BEA should or might make.

8. Page 8, 1<sup>st</sup> full sentence – The UN Technical Subgroup definition is not tied to employment or migration status. We suggest rewording this sentence as follows: “In the first case, the United Nations Technical Subgroup on the Movement of Natural Persons, of which BEA is a member, recommended that “personal transfers” be defined to include personal transfers by all residents, regardless of whether they are working in their current country of residence or migrated to or were born in their current country of residence.”

9. Page 8, 2<sup>nd</sup> full sentence – This is minor, but the reference to “taking effect in 2008” may be misleading in that some countries will adopt this definition before 2008 and others will never adopt it. You may want to consider rewording this sentence as follows: “This definition was discussed at a June 2005 meeting of the IMF Balance of Payments Committee (of which BEA is a member) and is expected to appear in the updated international statistical standards that are scheduled to be released in 2008.”

10. Page 11, 1<sup>st</sup> paragraph – It says that the IMF “generally defines international remittances as the portion of the international migrant workers’ earnings sent back from the country of employment to the country of origin.” You seem to be giving the IMF’s earlier definition of worker remittances rather than the definition of remittances that the IMF is in the process of adopting (which includes net compensation). If so, we suggest rewording this sentence as follows (to remove the reference to “migrant workers”): “The IMF definition of remittances covers earnings sent by migrants who are employed in new economies and considered residents there, back to their countries of origin.”

11. Page 11, 2<sup>nd</sup> paragraph, 1<sup>st</sup> sentence – Please insert the word “net” before the word compensation to reflect the IMF’s position.

12. Page 11, footnote 5 – as noted above, BEA has concerns about the comparisons that GAO makes between BEA’s estimates and those of other organizations. This footnote states that “this report only focuses on personal transfers, which we are calling remittances. We did not focus on compensation of employees because, other than the technical descriptions in the balance of payments accounting, it is not separately measurable.” However, the methods used to estimate remittances by the Mexican Central Bank, the Philippine Central Bank, and others cited in the GAO report capture both remittances and compensation of employees (net of expenditures in the United States), because both would appear as money channeled through banks and money transmitters. GAO is correct in noting that the Mexican Central Bank and the Philippine Central Bank cannot provide separate estimates of personal transfers and compensation of employees. GAO also is correct in noting that the household survey-based method of estimating remittances (used by the IDB/MIF) did not distinguish between personal transfers and compensation of employees. This explains why BEA’s balance of payments estimates for personal transfers and compensation of employees should be summed when comparing BEA’s estimates of “remittances” with those of these other organizations.

Now on page 8.  
See comment 7.

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**Appendix V**  
**Comments from the Department of**  
**Commerce**

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Now on page 22.  
See comment 8.

Now on pages 23-24.  
See comment 9.

13. Page 28, 1<sup>st</sup> full paragraph, 4<sup>th</sup> sentence – The TSG now recommends that personal transfers should also include capital transfers (not just current transfers in cash and in kind).

14. Page 29, last sentence – It says that remittance data “...cannot be reconciled because of the inconsistency in the methods of collecting and reporting remittance data.” We disagree with this assessment, because BEA and other compilers often reconcile their data with one another. (BEA’s reconciliation of U.S.-Canada current account transactions is an example where reconciliation occurs annually.) However, because reconciliation projects are resource intensive, time consuming, and difficult, BEA must pick-and-choose which statistical items to reconcile with which trading partners.

15. Page 33, partial paragraph at top, last sentence – It says that BEA “claimed” that its underlying tabulations should not be considered BEA estimates for specific countries. The term “claimed” makes it seem like BEA’s comment could be disputed. A more appropriate way of putting this would be to say that “BEA stated” rather than that it claimed.

16. Page 42, 2<sup>nd</sup> paragraph – In the 2<sup>nd</sup> sentence, it would be more accurate to say that the values chosen “were linked to a variety of different sources” (rather than that they cannot be linked to any specific source). In the 3<sup>rd</sup> and 4<sup>th</sup> sentences, it says that BEA “primarily” used the LPS under its 1992 methodology, whereas it “selectively” used the LPS under its 2005 methodology. However, BEA’s reliance on the LPS was about the same in both periods – BEA used the LPS as just one source of information under both methodologies.

17. Page 48, 2<sup>nd</sup> sentence – It says that “BEA provided GAO with country estimates...” We would prefer if this was reworded as follows: “BEA provided GAO with underlying tabulations of data that enabled GAO to construct estimates for the same 21 countries for which IDB provided estimates in 2003.”

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The following are GAO's comments on the Department of Commerce's March 10, 2006, letter.

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## GAO's Comments

1. BEA commented on the Highlights page that the IDB estimates differ from BEA's estimates because the IDB estimate includes "net compensation" of foreign workers and the BEA estimate does not. BEA also commented that data provided by foreign central banks and financial establishments are sometimes overstated because U.S. correspondent banks are used in transmitting funds for senders not living in the United States. We disagree with BEA on these points. This "net compensation" of foreign workers is a new concept that was just proposed by the Technical Subgroup on the Movement of Natural Persons (TSG) in June 2005, and we are not aware of any remittances estimates for 2003 that use this definition. Further, IDB never stated that any of the funds accounted for in their estimates came through U.S. correspondent banks for workers who were not located in the United States. This was true for the Philippines, which we noted in the report. BEA also commented that IDB's estimates are substantially derived from data reported from central banks and private money transfer establishments. BEA is correct on the latter point and we have corrected the Highlights page to be consistent with the letter and reflect that IDB uses a variety of sources in making its remittances estimates.
2. BEA suggested that we place Mexico in North America or create a separate bar in our graphic in the Highlights page for Mexico. In this report, we used the United Nations' Standard Country and Area Codes Classification, which places Mexico in Central America.
3. BEA commented that to develop an estimate that corresponds to our definition of remittances, we should have used BEA's estimates of personal transfers and compensation of employees, net of their expenditures. However, we make it clear in footnote 6 that we are focusing only on personal transfers and that we call these remittances for the purpose of this report.
4. BEA states that it has confirmed with the Bank of Mexico that Mexico's estimates of remittances include net compensation of migrant Mexican workers in the United States. BEA states that if we added BEA's net compensation of employees figure to its estimate of personal transfers, the two figures for 2003 would be closer. As stated above, this new

definition was proposed in June 2005, and, to our knowledge, the Mexican central bank has not published 2003 figures for “net compensation” of employees. The Mexican central bank figures for 2003 as reported by the IMF in its balance of payments statistics are almost \$13.4 billion for workers’ remittances, which we use in our report, and \$1.5 billion in compensation of employees. The \$12.9 billion estimate BEA attributes in its comments to the Mexican central bank is the IDB’s estimate.

5. BEA commented that the data used in our analysis of the potential effects of BEA’s judgmentally determined values in its remittance estimating methodology are unclear, as are the particulars of our modeling technique. As we stated, we replicated BEA’s methodology using its underlying tabulation of remittances by country and included additional information from the sources that BEA primarily used to arrive at its estimate. BEA further stated that there is a very small probability that the BEA estimate would be near the end points of the intervals and suggested that we use the midpoint of the intervals instead. As explained in appendix III, the purpose of our analysis was to show the effect of BEA’s judgmentally determined values on its estimate \$28.03 billion in 2003. Using a range illustrates the uncertainty in BEA’s estimate. BEA also commented on our use of the lognormal distribution for the percentage of income remitted and the percentage of the adult foreign born population that remit. We chose the lognormal distribution because it satisfied the requirements that both of these variables were nonnegative and distributed in a bell-shaped curve.
6. BEA commented that we left the impression that BEA’s estimates of personal transfers contain a double count of \$377 million and that any double count that may exist probably involves the compensation of employees, not the personal transfers account. We modified the text of our report to reflect that BEA’s personal transfers are therefore potentially overstated by up to \$377 million because BEA’s estimate includes remittances sent by some of the foreign born who have been in the United States for less than one year.
7. Commerce reiterated its concerns about our comparison between BEA’s estimates and those of other organizations. Commerce restated its view that the methods used by the Mexican central bank and others capture both remittances and compensation of employees and further stated that BEA’s estimates for personal transfers and compensation of employees should be summed when making these comparisons to

other organizations. However, none of the organizations with which we compare BEA's estimates indicated that their methods captured compensation of employees, therefore, we believe our comparisons are appropriate.

8. BEA states that the TSG now recommends that "personal transfers" also include capital transfers. This is incorrect. The paper BOPCOM-05/9 states that the TSG agreed to define "personal transfers" as consisting of all current transfers in cash or in kind.
9. BEA disagreed with our statement that remittance data cannot be reconciled and stated that, because reconciliation projects are resource intensive and difficult, BEA must choose the statistical items it reconciles with which trading partners. We concur that reconciliation cannot be done easily. However, our observations were on reconciliation of remittance data on a global level, not between individual countries, as shown in figure 4. The global discrepancy has grown in recent years.

# Comments from the Department of the Treasury



DEPARTMENT OF THE TREASURY  
WASHINGTON, D.C. 20220

MAR 13 2006

Yvonne D. Jones  
Director, Financial Markets and Community Investment  
United States Government Accountability Office

Dear Ms. Jones:

The Government Accountability Office is to be commended for examining, at the request of the Congress, the important issue of remittance statistics. Remittances are increasingly recognized in the policy community as a significant international financial flow. Personal remittances are now acknowledged to have a positive impact on financial stability, and at times of financial crises have contributed to cushioning the impact of the crises on the economic well-being of households. Furthermore, recent studies, including those by World Bank, add to the growing body of evidence that remittances can have a strong positive impact on the growth and development of emerging economies.

The Administration has long underscored the importance of remittances. In this regard, the Treasury launched a series of bilateral and multilateral initiatives to address the factors that have historically contributed to the high cost and inconsistent quality of remittance services, as well as the factors that have limited the potential positive impact of remittances on development. These initiatives include, among others, the APEC (Asia-Pacific Economic Cooperation) Finance Ministers' work on remittance systems, the on-going Summit of the Americas Remittance Initiative, and our work with Mexico on remittances under the Administration's Partnership for Prosperity.

The 2004 Sea Island Summit, with U.S. leadership, secured the G-8's commitment to address key global remittance issues. One of the two remittance issues identified for action by the G-8 was the poor quality of remittance statistics. The G-8 specifically pledged to work with the World Bank and the IMF to enhance global remittance statistics. The Bureau of Economic Analysis within the Department of Commerce has been a major participant in this global effort.

The Treasury fully agrees with GAO's conclusion that more accurate remittance data are important to provide policy-makers with the information necessary to improve the decision process. Such improved data would also enhance private sector decision making, better inform the activities of non-governmental agencies, especially those involved in development assistance, and make a positive contribution to US bilateral discussions on financial sector issues.

Sincerely,

A handwritten signature in black ink that reads "Mark Sobel".

Mark Sobel  
Deputy Assistant Secretary for  
International Monetary and Financial Policy



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# GAO Contact and Staff Acknowledgments

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## GAO Contact

Yvonne D. Jones (202) 512-2717 or [jonesy@gao.gov](mailto:jonesy@gao.gov)

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