

## REMITTANCES TO CUBA: A SURVEY OF METHODS AND ESTIMATES

Jorge Pérez-López and Sergio Díaz-Briquets<sup>1</sup>

A cursory search of the internet reveals at least a dozen firms engaged in sending money remittances to Cuba.<sup>2</sup> For example, one of the websites associated with the Cuban government, [www.cubaweb.cu](http://www.cubaweb.cu), advertises the services of Duales, a Canadian company established in 1994 that facilitates money transfers to Cuba from the United States and other countries and allows money senders to charge their remittances to a major credit card (e.g., Visa, MasterCard, American Express); it also advertises a like service, Cash2Cuba, offered by Canadian Financial Services. Other businesses engaged in facilitating remittances to Cuba readily identifiable in the internet include Canadian companies Transcard International, through its QuickCashCuba program, and Antillas Express; Swiss AWS Technologies Company; and U.S. company Western Union. Also prominently advertised are the money transfer services offered by SerCuba, a debit card system launched in August 2004 by the Cuban telecommunications company ETECSA.<sup>3</sup>

There is considerable disagreement with regard to the magnitude of cash remittances to Cuba. Such a con-

troversy is not unique to Cuba, as the issue is similarly debated in other countries that receive substantial remittance inflows. In the case of Mexico, for example, the results of a recent academic study questioning the magnitude of remittance estimates have been challenged by critics claiming it has political undertones. Its intent, critics allege, is to cast a more positive glow on President Fox's anti-poverty policies, when in fact poverty declines in Mexico are associated with growing remittances from Mexicans abroad to relatives at home (Malkin 2005). Comparable controversies, as we note below, surround the remittance issue in Cuba.

In a recent report on Cuban economic development and prospects, the United Nations Economic Commission for Latin America (Comisión Económica para América Latina y el Caribe, CEPAL) estimated that remittances to the island from residents in the United States amounted to \$900 million in 2003, roughly 3% of the country's gross domestic product, further stating that such remittances "had determinative influence on the country's financial stability and on the level of consumption of households" (CEPAL

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2. In addition to these money transfer companies, there are myriad organizations advertising in-kind remittances to Cuba, such as packages of goods and pre-paid purchases from state-owned stores of electric appliances, clothing, personal hygiene products, food, etc. This paper focuses on money remittances and does not address the larger issue of overall transfers to the island including in-kind remittances.

3. In October 2004, the U.S. Treasury Department barred U.S. nationals from using the services of SerCuba to remit cash to Cuba because it determined that SerCuba operates under Cuban law and it is supported by Cimex S.A., a government-owned trading company (Bachelet 2004).

2004, p. 2). Meanwhile, a large survey of individuals in the United States that send money to friends and relatives in Cuba conducted in February 2005 found that they remitted about \$460 million per annum (Bendixen 2005), or roughly half of the amount estimated by CEPAL.

Regard about the magnitude of remittances to Cuba, and disparities in estimates, goes beyond academic interest and has significant policy implications:

- The Report to the President of the United States by the Commission for Assistance to a Free Cuba (Report 2004:34) states that remittances from abroad accounted for \$400 to \$800 million annually, with some estimates placing as high as \$1 billion. The U.S. Administration's policy announced in mid-2004 of enforcing existing limits on remittances and restricting remittances to immediate family was predicated on the premise of a very large amount of remittances and substantial benefits accruing to the Cuban government as a result of such remittances flows.<sup>4</sup>
- However, a Cuban economist (Aguilar Trujillo 2001, p. 102) argues that the very high estimates of remittances to Cuba "are unlikely given current circumstances, indicating that such estimates of remittances received by Cuba in recent years, generally made by analysts abroad, overestimate actual remittances flows and are politically manipulated to suggest a very high dependence of the Cuban economy on remittances, a proposition that is not sound."
- Finally, a U.S.-based researcher (Betancourt 2000) has argued that the very high estimates of remittances (in the \$800 million to \$1 billion per year range in the late 1990s) are not consistent with the capacity to remit of the Cuban-American community abroad and actually hide foreign exchange that flows illegally to Cuba from drug trafficking and/or money laundering.

The purpose of this paper is to survey different methods that have been used to estimate remittances to Cuba. In particular, five approaches—and their applications to Cuba—are discussed: (1) estimates from balance of payments data; (2) estimates based on information culled from remittances senders; (3) estimates based on information culled from remittances recipients; (4) ad hoc estimates by Cuban scholars; and (5) estimates of the capacity of migrants to remit. To the extent possible, the magnitude of remittances derived from each approach is compared to determine consistencies and potential sources of differences.

### OFFICIAL BOP ESTIMATES<sup>5</sup>

Most nations of the world collect and publish annual statistics on their money receipts from abroad (inflows) and payments to persons or entities abroad (outflows) using a framework developed by the International Monetary Fund (IMF) in the 1940s called the balance of payments (BOP). Among the receipts from abroad recorded in BOP statistics are income earned from exports of goods and services, income earned from foreign investments abroad, and transfers from abroad such as foreign aid and family remittances. Payments recorded in BOP accounts include loans received from abroad and foreign investment.

Cuban authorities halted publication of BOP statistics in 1960. This practice changed in the mid-1990s, when the Banco Nacional de Cuba (BNC) resumed publication of BOP statistics, an activity that has been continued by the BNC's successor, the Banco Central de Cuba (BCC). Presumably, Cuban BOP statistics are compiled on the basis of international guidelines. Thus, the methodological notes to the most recent issue of the *Anuario* (AEC 2003) state that Cuban BOP statistics "follow generally the methodology developed by the International Mone-

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4. The report argues that the Cuban Government captured a portion of the remittances through transfer fees levied on activities of licensed U.S. remittance companies, charges to unlicensed remittance carriers ("mules"), and sales—at very high prices—of goods and services at state-controlled dollar stores, *Tiendas de Recaudación de Divisas*.

5. This section draws on Pérez-López (2000).

**Table 1. Cuban Balance of Payments Statistics, 1993–2001 (in million pesos)**

|                    | 1993   | 1994   | 1995    | 1996    | 1997    | 1998    | 1999    | 2000    | 2001    |
|--------------------|--------|--------|---------|---------|---------|---------|---------|---------|---------|
| Current Account    | -371.6 | -260.2 | -517.7  | -166.8  | -436.7  | -392.4  | -461.8  | -776.0  | -552.7  |
| Goods and Services | -370.7 | -307.6 | -639.1  | -417.9  | -745.5  | -756.7  | -746.6  | -894.2  | -863.4  |
| Goods              | -847.4 | -971.4 | -1483.3 | -1790.3 | -2264.5 | -2688.8 | -2909.3 | -3117.2 | -3076.2 |
| Exports            | 1136.6 | 1381.4 | 1507.3  | 1866.2  | 1823.1  | 1540.2  | 1456.1  | 1676.8  | 1661.5  |
| Imports            | 1984.0 | 2352.8 | 2991.6  | 3656.5  | 4087.6  | 4229.0  | 4365.4  | 4876.7  | 4383.3  |
| Services           | 476.7  | 663.8  | 845.2   | 1372.4  | 1519.0  | 1932.1  | 2162.7  | 2223.0  | 2212.8  |
| Income             | -263.8 | -422.8 | -524.8  | -492.6  | -482.9  | -448.7  | -514.1  | -622.0  | -502.2  |
| Current Transfers  | 262.9  | 470.2  | 646.2   | 743.7   | 791.7   | 813.0   | 798.9   | 740.4   | 812.9   |
| Capital Account    | 356.1  | 262.4  | 596.2   | 174.4   | 457.4   | 409.4   | 484.9   | 805.4   | 594.5   |
| Long-term Capital  | 118.4  | 817.4  | 24.2    | 307.9   | 786.9   | 632.7   | 209.9   | 1018.4  | 367.2   |
| Direct Investment  | 54.0   | 563.4  | 4.7     | 82.1    | 442.0   | 206.6   | 178.2   | 448.1   | 38.9    |
| Other              | 64.4   | 254.0  | 19.5    | 225.8   | 344.9   | 426.1   | 31.7    | 570.3   | 328.3   |
| Other Capital      | 237.7  | -555.0 | 572.0   | -133.5  | -329.5  | -223.3  | 275.0   | -213.0  | 227.3   |
| Change in Reserves | 15.5   | -2.2   | -78.5   | -7.6    | -20.7   | -17.0   | -29.4   | -29.4   | -41.8   |

**Note:** By convention, a negative change in reserves is a gain in such reserves.

**Source:** Sources: 1993–96—AEC 1997; 1997–2001—AEC 2003.

tary Fund in order to allow international comparisons.”

Table 1 presents Cuban BOP statistics for the period 1993–2001 compiled from the official statistical yearbook, *Anuario Estadístico de Cuba* (AEC).<sup>6</sup> It is readily observable that the BOP statistics are highly aggregated (for example, no breakdown of income flows to differentiate among interest, dividends, or profits). For the purpose of this paper, the most significant weakness of official Cuban BOP statistics is that they do not break down current transfers into their constituent parts.

The IMF (1996, p. 88) defines current transfers as “offsetting entries for real resources or financial items provided, without a quid pro quo, by one economy to another.”<sup>7</sup> Current transfers, in turn, are divided into two sub-components:

- general government transfers, which includes subsidies and grants to current budgets; gifts of food, clothing, medicines, etc.; gifts of military equipment that has no civilian uses; technical assistance; indemnities imposed under peace treaties (reparations); government contributions to the budget of international organizations; and

scholarships given to citizens in a foreign country.

- other sectors transfers, which consist primarily of workers’ remittances, that is goods or financial instruments transferred by migrants living and working abroad to residents of the economies where the migrants formerly resided. An import caveat is that workers’ remittances include only those transfers made by workers who stay in foreign economies for at least one year, i.e., they are migrants; workers who remain in a foreign country less than one year are not considered as residents of the foreign economies and their remittances to the home country represent transfers of labor income earned rather than remittances, and are recorded elsewhere in the BOP framework. Finally, if a migrant is self-employed in a foreign country, his or her remittances abroad are considered as current transfers but are not counted as workers’ remittances since they arise from entrepreneurial activities rather than labor.

Returning to Table 1, Cuban official BOP statistics report that current transfers rose from 263 million pesos in 1993 to 646 million pesos in 1995 (146% increase), peaking at 813 million pesos in 1998; cur-

6. The most recent issue of the Cuban statistical yearbook, for the year 2003 (AEC 2003), only contains BOP statistics through 2001.

7. To stress the absence of a quid pro quo, transfers are often referred to as “unrequited transfers.”

rent transfers fell slightly in 1999 (to 799 million pesos) and in 2000 (to 740 million pesos) and recovered in 2001 to 813 million pesos. Methodological notes in Cuba's statistical yearbook indicates that current transfers include "donations, family remittances, etc." (AEC 2003). Unknown is which portion of the current transfers are donations and which portions represent family remittances and other forms of transfers.

Of particular significance here is how expenditures in Cuba by emigrants visiting their families are recorded, and whether or not these expenditures are segregated from those of other foreign visitors (e.g., tourists). This is not an inconsequential distinction as Cuban emigrants returning for visits, and bringing cash remittances with them, are assumed to be (see below) an important source of money transfers, not only for their direct expenditures, but for the dollar transfers they provide to relatives and friends. The significance of these direct transfers cannot be overestimated as they have a magnified net impact since they bypass customary transfer payments that may range anywhere from 7% (e.g., wire transfers) to 20% (for the services of the fastest and most reliable *mulas*, or informal money couriers), depending on the transfer channel used. Restrictions imposed by the Bush Administration in 2004 that have brought about a 60% decline in the number of Cuban-American travelers to the island are believed to have cost Cuba by mid-2005 close to \$100 million (Cancio Isla 2005). How much of this loss can be attributed to a diminution in remittance flows is unknown, but the amount could be substantial particularly if some of the visitors were *mulas* no longer able to enter Cuba at will.

CEPAL has published more detailed statistics on Cuba's current transfers that separate out donations, remittances, and other forms of transfers. These statistics, presumably CEPAL estimates based on information provided by Cuba's National Statistical Office (Oficina Nacional de Estadísticas, ONE) and by the BCC, are only available for the period 1995–2001 (Table 2). According to these estimates, over the entire period 1995–2001, donations accounted

for 9.0% of current transfers, remittances for 85.6%, and other transfers for 5.4%; in 1999 and 2000, remittances accounted for nearly 88% of current transfers. Remittances rose from about 540 million pesos in 1995, two years after Cuban citizens were first allowed to hold foreign currencies, to 740 million pesos in 2000 and 730 million pesos in 2001.

**Table 2. Cuban Current Transfers, 1995–2001 (million pesos)**

|                                   | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|-----------------------------------|------|------|------|------|------|------|------|
| Current transfers                 | 646  | 744  | 792  | 813  | 799  | 842  | 850  |
| Donations                         | 109  | 88   | 92   | 47   | 42   | 47   | 70   |
| Remittances                       | 537  | 630  | 670  | 690  | 700  | 740  | 730  |
| Other                             | 0    | 26   | 30   | 76   | 57   | 56   | 50   |
| Remittances/current transfers (%) | 83.1 | 84.7 | 84.6 | 84.9 | 87.6 | 87.9 | 85.9 |

Source: CEPAL (1999, p. 46; 2002, Table 17).

It should be noted that there is quite a bit of uncertainty even among Cuban economists about what might be included in the series that Cuban statistical sources call "remittances":

- Some Cuban economists interviewed by Spadoni (2003, pp. 416–7) assert that the "remittances" series refers exclusively to transactions through official channels (such as Western Union, Transcard, and other officially-sanctioned money transfer services) and exclude informal money transfers physically carried by *mulas* as well as by friends and family during visits to the island.
- Others contend that "remittances" include both formal money transfer transactions plus estimates of informal transfers derived from sales in dollar stores, activity in government-sanctioned foreign exchange outlets (CADECA), and estimates of hard currency hoarding by the population (Spadoni 2003, p. 417). This conceptualization is consistent with the observation by Morris (2000, p. 147) that remittances statistics also reflect earnings from the informal tourist sector: "If asked, Cubans offering services for tourists would of course declare that the money [their income] was remittances, because there are no laws against receiving remittances."

### ESTIMATES BASED ON SURVEYS OF REMITTANCES SENDERS

A popular method of estimating remittances flows, particularly from persons residing in the United States to persons in Latin American nations, is through the use of surveys of remitters. Results of these surveys are sometimes combined with information obtained from money transfer companies to provide a broader picture of the supply of remittances. One weakness of this method is that, since it focuses on remittances senders who reside in the United States, it underestimates overall remittances flows because remittances sent from other countries (e.g., European nations) are not covered. The Multilateral Investment Fund (MIF) of the Inter-American Development Bank and the Inter-American Dialogue, a policy analysis organization based in Washington, D.C., have been at the center of much of the work conducted in the last five years to document the magnitude of remittances to Latin America and the Caribbean from the United States and to promote their expansion and constructive use in the development process. Much of the survey work involving remitters based in the United States has been carried out by U.S.-based public opinion firm Bendixen and Associates on behalf of the MIF, the Inter-American Dialogue, and other clients.

A study of remittances to Central America and the Caribbean by the MIF (2002), based on a survey of remitters in the United States conducted by Bendixen and Associates, reported that remittances to Cuba in 2001 amounted to \$930 million; Orozco (2002b) also refers to the \$930 million estimate and states that this level of remittances was equivalent to 5% of Cuba's gross domestic product (GDP) and 40% of the value of exports. In a paper based in part on the results of the survey underlying the mentioned MIF study, Orozco (2002a) discusses the channels of sending remittances to Cuba and posits that Cuban Americans sending remittances to the island rely more heavily on informal channels or *mulas* than other groups of remitters to Latin America and the Caribbean: thus, according to Orozco, 46.4% of Cuban-American remitters used informal channels, compared to 13.3% for other groups sending remittances to Latin America and the Caribbean. The au-

thor goes on to suggest, based on interviews with Cuban government officials, Cuban academics, and money transfer industry officials in the United States, that up to 80% of remittances sent to Cuba used informal channels; this is consistent with a statement to Orozco by an official of CIMEX—the Cuban government agency in charge of managing remittances—that only about 25% of remittances go through their channels (Orozco 2002a, p. 10). Orozco posits that at least 3,000 “mulas” may have been at work in the late 1990s and early 2000s, making on average 20 trips to Cuba per annum and carrying \$6,000–\$10,000 per trip, for a flow of remittances ranging from \$360 million to \$600 million. If these figures were accurate, the 60 percent drop in the number of Cuban-American visitors to the island noted above would have had a dramatic impact on the flow, although it seems certain that many *mulas* would have sought and found alternate routes (e.g., through Mexico and other countries) to travel to Cuba. In a subsequent report, the MIF (2004) reported remittances to Cuba in 2002 at \$1,094 million.

In July 2002, Bendixen and Associates conducted a study of remittances senders in Miami and Los Angeles on behalf of the Inter-American Development Bank and the Pew Hispanic Center (Pérez Rodríguez 2003). A total of 300 remittances senders were interviewed, 150 in Miami and 150 in Los Angeles. Among the Miami interviewees were 27 individuals who remitted to Cuba. Although this number of interviews is too small to draw statistically valid conclusions, nevertheless the characteristics of remittances senders to Cuba and their level of remittances are instructive:

- A third of the respondents indicated that they sent money to Cuba monthly, while 48% indicated that they remitted every 2 to 3 months.
- The average amount of remittance was \$100.
- 41% of respondents indicated that they sent their remittances through Western Union (a formal channel), 51% used other companies or travelers, and 8% used other means.

Assuming 500,000 remitters in the United States sending \$100 per month, “the total amount of remittances would be \$600 million, slightly over half of

the \$1,138 million Cuba claims to receive from remittances” (Pérez Rodríguez 2003, p. 432).

A much lower estimate of remittances to Cuba resulted from a survey of 1,811 Cuban-American households in Miami-Dade and Broward counties, Florida, conducted by Florida International University (FIU) in the first quarter of 2004 for the *South Florida Sun Sentinel* and television station WTVJ Channel 6 (Bauzá and Marrero 2004). Slightly over half of the respondents (53.6%) indicated that they sent remittances to relatives in Cuba. The average remittance per household in 2003 was \$387 (recording households that did not send any money to Cuba as sending zero remittances).<sup>8</sup> Since the 2000 U.S. population census reported that there were 269,868 Cuban-American households in the two counties, the authors of the FIU survey estimated that remittances amounted to \$97 million (FIU 2004).<sup>9</sup> If the average remittance estimate were to be applied to all Cuban-American headed households in the United States in 2000 (477,405), regardless of whether the household head was foreign or native born, the estimate would reach some \$185 million.

Finally, Bendixen and Associates conducted a large survey of remittances to Cuba in 2005 for the Inter-American Dialogue (Bendixen 2005). Bendixen and Associates interviewed a national sample of 1,000 Cuban-American adults in February 2005; the sample was selected using probability sampling techniques with a margin of error of +/- 3%. Forty-one percent of respondents indicated that they sent money to a friend or relative in Cuba; the average amount of a remittance was \$150, the average frequency of remittances per year was 7, and 83% of remitters indicated that they used an international remittance

company. Bendixen and Associates estimated that 440,000 Cuban-Americans remitted an average of \$1,050 per person, for total remittances of \$460 million per annum. The substance of this estimate could be questioned, however, since it is generally accepted that sending remittances is a household’s rather than an individual’s decision. Bendixen and Associates’ estimate assumes that 85 percent of all Cuban-American households in 2005 (estimated by the authors as 515,000 households headed by native and foreign-born Cuban-Americans) were sending remittances to Cuba, a rather unlikely proposition.

### ESTIMATES BASED ON SURVEYS OF REMITTANCES RECIPIENTS

Another approach that researchers have used to estimate remittances flows is to conduct household surveys of recipients. Although this approach has been used most commonly to learn about the characteristics of remittances recipients, how they spend remittances, and the contribution of remittances to the overall household income, it can also be used to make estimates of the volume of remittances flows.

In the Cuban case, household surveys of remittances recipients by independent researchers are extremely difficult to conduct because of the control that the Cuban government exercises over social science research in general, and public opinion surveys in particular. We are aware of only one such study, conducted in 2000, that permits indirect estimation of the flow of remittances.<sup>10</sup>

Blue (2004, p. 71) led a team of ten Cuban research assistants who conducted a household-level survey in Havana in December 2000 that, among other topics, elicited information from respondents regarding the remittances they received from abroad. According to

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8. These results do not differ very significantly from those obtained from a small, non-representative sample of respondents in the Miami area (55 oral surveys and 48 written surveys) conducted presumably in late 2003 or early 2004. Of those informants approached, 66% claimed to send to Cuba \$700 or less a year (Spiegel 2004:67).

9. Applying the 95% confidence interval (single sample t-test), 95% of the time the survey were repeated with the same population, the average household remittance would fall between \$322 and \$452, corresponding to total remittances of \$81 million to \$113 million (FIU 2004).

10. Orozco (2005) has reported on a survey of 200 remittances recipients in Cuba. The survey yielded important information on characteristics of remittances recipients, frequency of receipt of remittances, source of remittances, relationship between remittances senders and recipients, and so on, but did not provide estimates of remittances flows.

Blue, Havana was then (in 2000), and has been over time, the origin of the majority of Cuban out migration and the destination of the majority of remittances flowing into the island.

The team of Cuban research assistants under Blue's direction interviewed heads of 334 households to ascertain the demographic characteristics and individual earnings of each member of the household, the number of relatives of the family living abroad, and the year of migration of relatives. The head of household was also asked to report the amount and frequency with which his or her household received remittances from each migrant relative, as well as the degree of communication with the migrant that sent remittances (including visits to Cuba by relatives residing abroad). The 334 households interviewed were selected by the research assistants from their personal networks, including neighbors, friends, and associates, using a "snowball" sampling methodology.<sup>11</sup> According to Blue (2004, p. 71), the surveyed population is somewhat biased toward middle- to lower-middle-status neighborhoods, as higher-status neighborhoods (such as Miramar and Vedado) were underrepresented in the sample. Thus, Blue argues that although the sample is not representative of remittances patterns for the city of Havana or for Cuba as a whole, the results of a relatively large survey—such as the one she and her team conducted—provide insight into patterns that may exist on a larger scale in Havana. According to the survey, about 51% of the interviewed households reported that they had at least one relative abroad, and about 34% (114) reported that they received cash remittances. Cash remittances ranged from \$20 to \$3,900 per an-

num per household, with a median of \$425 and a mean of \$752.<sup>12</sup>

Although Blue does not make estimates of overall remittances flows in her paper, it is possible to make some very rough calculations based on her work. First, applying the rate of households in La Habana that received remittances (34.13%) to the 649,153 households that existed in the city of La Habana at about that time,<sup>13</sup> we can estimate that 221,556 households in the capital city received remittances. Second, using the \$752 mean remittance per household estimated by Blue we can calculate the amount of remittances these household received in 2000 at approximately \$167 million (221,556 households times \$752 per household). Third, further assuming that Cuban households receive remittances from friends and relatives abroad at a uniform rate irrespective of location, i.e., that the \$752 per household remittances level estimated for La Habana applies to the entire island, and considering that La Habana has been the origin of the majority of Cuban out migration and the destination of the majority of remittances flowing into the island—as high as 60% to 70%<sup>14</sup>—we can estimate the national level of remittances for the nation in 2000 at between \$240 million and \$278 million.

Another estimate of remittances received by remittances recipients in 1998–99 can be made using as a base a survey of then-recent emigres from Cuba conducted by a team led by a researcher from the University of Florida (Roberts 1999). The study used an availability sample of Cuban emigres that had been in the United States three months or less. In all, 1,029 subjects were interviewed from December

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11. Snowball sampling is a special non-probability method used when the desired sample characteristic is rare, or in this case, when random sampling is not possible. Snowball sampling relies on referrals from initial subjects to generate additional subjects. While this technique can dramatically lower search costs, it comes at the expense of introducing bias because the technique itself reduces the likelihood that the sample will represent a good cross section from the population. <http://www.statpac.com/surveys/sampling.htm>.

12. The mean of household remittances receipts, which is not reported in Blue (2004), was provided to the authors by Professor Blue. We are grateful to her for making this key information available for this paper.

13. This information was provided to the authors by Omar Everleny Pérez Villanueva of the Universidad de La Habana. We are grateful to Professor Pérez Villanueva for providing us with this key statistic.

14. Rodríguez Chávez (1997a, p. 20) states that 65.3% of migrants from 1985 to 1989 resided in La Habana. Montiel Rodríguez (1996, p. 264) has reported that 60% to 70% of Cuban migrants in the 1990s resided in the city of La Habana.

1998 to April 1999; 41% of the respondents were female and 59% male, 87% were white and 13% non-white, and 64% lived outside of the city of La Habana. Since the data did not come from a probability sample, sampling errors could not be estimated accurately, but the authors of the study posited that margins of error of about 3% would be expected given the sample size.

Among many questions, survey participants were asked to indicate whether or not they received remittances and, if so, their frequency of receipt and amount (Betancourt, 2000, p. 151). About 3% of the participants did not respond to this question. Out of the total of 992 participants who did respond, 629 (63.4%) indicated that they did not receive any remittances at all;<sup>15</sup> 258 (26.0%) that they received less than \$90 per month; 75 (7.6%) that they received between \$90 and \$100 per month; 20 (2.0%) that they received between \$101 and \$200 per month; and 10 (1.0%) that they received over \$200 per month. Making some assumptions about the mean remittance level within each of the ranges,<sup>16</sup> we can estimate a weighted average remittance level of \$71.12 per month, or \$853 per annum. Further assuming that the respondents reported household remittances—rather than individual remittances—and using the same methodology that we used above to estimate the volume of remittances for households in the city of La Habana (\$853 per household times 237,589 households, for remittances of \$189 million in La Habana) and nationally (expanding the estimate considering that 34% of the respondents in the émigré survey lived in La Habana and 66% in the rest of the nation) yields an overall remittances estimate of \$525 million. This estimate probably overestimates remittances levels as the individuals surveyed (recent arrivals from the island) were more likely to have relatives abroad and receive remittances than the rest of the population (Betancourt, 2000, p. 151).

### AD HOC ESTIMATES

Cuban scholars writing on aspects of the island's socioeconomic situation and prospects have also provided estimates of the magnitude of remittances. Although in general these scholars have not documented the methodology underlying their estimates, we believe that they reflect the conventional wisdom of economists and specialists in the island.

In an article published in 1999, Cuban economist Pedro Monreal (1999) recalls Cuba's official BOP statistics indicating that net current transfers in 1996 amounted to \$743.7 million, the bulk of which was presumed to be family remittances, and CEPAL's estimate of \$800 million in family remittances in that year. Monreal writes (1999:50): "Other estimates made in Cuba place remittances [presumably for the period 1995–98] in the range of \$300 to \$400 million ... we cautiously assume that remittances fluctuated around \$500 million." Elsewhere Monreal (2003) has estimated that remittances in 2002 were approximately \$500 million.

Cuban economist Hiram Marquetti has been cited in a press report as estimating that cumulative remittances to Cuba were \$3 billion during the period 1989–97, which is deemed by the author as a conservative estimate ("Cuban Economist," 1999). The press report goes on to state that this would put remittances in recent years at about \$333 million per annum. The latter average does not seem credible as it fails to reflect that remittances probably were relatively low prior to 1993, when Cuban citizens were first permitted to hold and use dollars, and therefore the volume of remittances since then likely were much higher than the average for the entire 9-year period covered by Marquetti's estimate.

### ESTIMATES OF THE CAPACITY OF MIGRANTS TO REMIT

Researchers have also used demographic and socioeconomic characteristics of remittances-sending mi-

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15. This means that about 37% of the respondents received remittances; note the similarity of this result with the 34% in Blue's survey.

16. We have assumed mean remittances of \$45 for those receiving less than \$90 per month; \$95 for those receiving between \$90 and \$100; \$150 for those receiving between \$100 and \$200; and \$400 for those receiving over \$300.



grants and models of remittances-sending behavior to make inferences about the level of remittances flows. Rather than being remittances estimates per se, this methodology serves as a check on the reasonableness of remittances estimates made using other methodologies. Because precise estimates of characteristics of migrants generally are not available, and there are inherent difficulties in modeling remittances-sending behavior, researchers typically have used this methodology to make estimates of ranges of potential remittances flows rather than point estimates.

Díaz-Briquets (1994) used demographic and socioeconomic characteristics of the Cuban émigré community residing in the United States, as reflected in the 1990 U.S. Population Census, and certain assumptions regarding the remittances-behavior of Cuban-American households<sup>17</sup> to “calculate a plausible range of remittance estimates.” In particular, Díaz-Briquets posited that the remittances behavior of Cuban-Americans (1) would differ depending on their time of arrival to the United States, with the propensity to remit of cohorts arriving to the United States prior to 1980 being lower than that of cohorts arriving after 1980; and (2) households headed by U.S.-born Cuban-Americans would have a propensity to remit of zero. Díaz-Briquets’ remittances estimates ranged from \$1.267 billion (based on the highly unrealistic assumption that every one of the 346,510 Cuban-American households remitted 10% of their 1989 mean annual income) to \$154 million (based on differentiated assumption regarding remittances according to their period of arrival). Díaz-Briquets concluded that the most plausible remittances levels from Cuban Americans in 1994 were in the range of \$300 to \$400 million.

More recently, a Cuban researcher (Aguilar Trujillo 2001) used a similar approach to estimate potential ranges of remittances to Cuba from the Cuban-American community. His work also relied on the demographic and socioeconomic characteristics of

the Cuban-American community in the United States as reflected in the 1990 U.S. Census of Population. He made several assumptions regarding the remittances-behavior of Cuban-Americans and estimated potential remittances levels ranging from \$299.1 million to \$734.4 million. Aguilar Trujillo’s estimates clustered around \$300 to \$500 million, a similar range to the most plausible scenario developed by Díaz-Briquets.

Díaz-Briquets’ 1994 estimates are updated here with special tabulations derived from the 2000 U.S. Census and compared with previous estimates obtained from the 1990 Census.<sup>18</sup> The same procedures and assumptions are used to make the two plausible range of remittances estimates, including that the remittance behavior of more recent immigrant arrivals (those entering the United States between 1990 and 2000) is comparable to that of immigrants enumerated in the 1990 census entering the United States during the preceding intercensal period (1980–1990). The estimating equations are given in Box 1, while the population and income data and the different assumptions used in performing the simulation—both for the 1990 and 2000 census years—are given in Tables 3 and 4.

As can be seen in Table 3 a sustained flow of immigration from Cuba in the 1990s, reflected in the entry of several thousand “balseros” and, following the 1994 U.S.-Cuba migration accord, of 20,000 new Cuban immigrants a year, together with the effect of demographic trends, have produced considerable changes in the period of arrival cohort composition of the Cuban-American foreign-born population. Between 1990 and 2000, the number of foreign-born Cuban-American households increased by 54,710. At the same time, the number of foreign-born Cuban-American households headed by a pre-1980 arrival declined by 34,988, a development largely attributable to the mortality experienced during the intercensal period by this entry cohort, which

17. As defined by the origin of the household head.

18. The authors gratefully acknowledge the contributions of Daniel J. Perez-Lopez and Jason Ost in preparing special tabulations based on the 2000 U.S. Census.

**Box 1. Estimating Equations for Capacity to Remit**

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| $R = Hp * Ip$ <p style="text-align: center;">or</p> $R_i = [(Hb * pw)(Ib * px)] + [(Ha * py)(Ia * pz)]$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <p>where:</p> <p>R = Estimated annual volume of remittances (in dollars)</p> <p>H = Number of all foreign-born Cuban-American households (in 1990 or 2000)</p> <p>Hb = Number of foreign-born Cuban-American households arriving before 1980</p> <p>Ha = Number of foreign-born Cuban-American households arriving between 1980 and 1990 (or between 1980 and 2000)</p> <p>I = Annual mean household income for all foreign-born Cuban-American households (whether in 1990 or 2000)</p> <p>Ib = Annual mean income for foreign-born Cuban-American households arriving before 1980 (in 1990 or 2000)</p> <p>Ia = Annual mean income for foreign-born Cuban-American households arriving between 1980 and 1990 (or between 1980 and 2000)</p> <p>p = proportion, and</p> <p>i = various remittance estimates according to assumptions regarding the proportion of households remitting and the proportion of annual mean income remitted, as given by w, x, y and z.</p> |

**Table 3. Number of Cuban-American Households and Annual Mean Income, by Period of Arrival, 1990 and 2000 U.S. Censuses**

|                                                                                         | 1990 census | 2000 census |
|-----------------------------------------------------------------------------------------|-------------|-------------|
| (H) Number of all foreign-born Cuban-American Households                                | 346,510     | 401,220     |
| (Hb) Number of foreign-born Cuban-American households arriving before 1980              | 276,258     | 241,270     |
| (Ha) Number of foreign-born Cuban-American households arriving after 1980               | 70,252      | 159,950     |
| (I) Annual mean household income for all foreign-born Cuban-American households         | \$36,570    | \$50,808    |
| (Ib) Annual mean income for foreign-born Cuban-American households arriving before 1980 | \$39,869    | \$57,578    |
| (Ia) Annual mean income for foreign-born Cuban-American households arriving after 1980  | \$23,593    | \$40,602    |

**Table 4. Estimates of Capacity to Remit by Foreign-Born Cuban-American Headed Households, by Period of Arrival in 1990 and 2000**

| Assumptions                                 | 1990            | 2000            |
|---------------------------------------------|-----------------|-----------------|
| R(a) = H(1)*I(.1)                           | \$1.267 billion | \$2,039 billion |
| R(b) = H(1)*(.05)                           | \$634 million   | \$1,109 billion |
| R(c) = H(1)*(\$1,200)                       | \$416 million   | \$482 million   |
| R(d) = [Hb(.4)*Ib(.05)] + [Ha(.6)*Ia(.1)]   | \$320 million   | \$668 million   |
| R(e) = [Hb(.1)*Ib(.1)] + [Ha(1)*Ia(.1)]     | \$276 million   | \$788 million   |
| R(f) = [Hb(.4)*Ib(.05)] + [Ha(.6)*Ia(.05)]  | \$270 million   | \$473 million   |
| R(g) = [Hb(.1)*Ib(.05)] + [Ha(.6)*Ia(.1)]   | \$154 million   | \$459 million   |
| R(h) = [Hb(.05)*Ib(.05)] + [Ha(.5)*Ia(.05)] | \$ 69 million   | \$197 million   |

already in 1990 had a late median age of 52.7 years (as opposed to 38.8 years for the 1980 to 1990 period of entry cohort). Corresponding figures for 2000 were 60 and 47, with the 1990 to 2000 entry cohort having a young median age of 35 years.

As the pre-1980 household headed entry cohort was being decimated by the force of mortality, the post-1980 household headed entry cohort increased by 89,698 households, or by 128 percent. The potential consequences of these demographic shifts for the vol-

ume of remittances being sent to Cuba (assuming comparable parameters for both census years with due allowance being made for nominal annual mean income increases) are quite substantial, as can be seen in Table 4. In some cases the potential estimated amount of remittances increases by a factor of three, the potential growth rate never falling below 60%, except under the assumption that every foreign-born household remits to Cuba the maximum sum allowed under current law.

By 2005 the potential amount of dollars that could have been remitted, following the logic described above, would have been even higher, as between the 2000 census date (April 1) and mid-2005, approximately 100,000 additional Cubans migrated to the United States. Assuming the average household size of new arrivals is 2.7—the average household size between the 1980 to 1990 arrivals (2.8) and the 1990 to 2000 arrivals (2.6)—nearly 37,000 new post-1980 foreign-born Cuban-American households were added to the potential pool of families with a higher propensity to remit dollars to their relatives in Cuba.

In light of the 2000 simulation results, and considering the steady entry into the United States of Cuban immigrants since then, it can be posited that the potential stream of Cuban-American remittances to the homeland increased considerably since the early 1990s. It appears reasonable to conclude that the remittances capacity of Cuban American community may well have ranged between \$600 million to \$1 billion a year in 2005.

#### **REMITTANCES ESTIMATES: SOME OBSERVATIONS**

Remittances are inherently difficult to measure, and estimates are rife with limitations. Many issues determine the nature and amount of remittances, including economic conditions in sending and receiving countries, policies pursued by migrant-sending and -receiving countries, the nature, maturity, and sustainability of migration flows, the extent of return migration and potential for family reunification in destination countries, and the mechanisms through which remittances are sent, among many others (for a review, see Díaz-Briquets and Perez-López 1997).

This could be significant in the case of Cuba. Also there is the issue of U.S. restrictions and whether those wishing to send remittances abide by the restrictions or use other means. Finally, there is the nagging question that survey respondents tend to be less than candid when responding to questions of a financial nature.

Table 5 shows the estimates of remittances to Cuba associated with the methods discussed in this paper. The first observation that can be made is the sparseness of the estimates; there are relatively few instances where two or more estimates are available for the same year, as the methods described in the paper typically have been used to make estimates for a single year. It is telling that despite the importance of remittances to the performance of the Cuban economy, it is not possible to cobble together a time series on remittances that stands up to scrutiny.

Second, the BOP estimates and the estimates made for the MIF by Bendixen and Associates represent the upper end of the range of estimates. These estimates, which would suggest remittances flows approaching \$1 billion per annum for the early 2000s, are generally quite higher than those associated with the other methodologies, two to three times higher than other estimates that seem to group around \$300 to \$500 million. The estimates of capacity to remit we have made for 2000 and 2005 would support even the high-end estimates of remittances levels.

Third, the non-BOP estimates focus exclusively on remittances flows from Cuban-Americans, and exclude altogether remittances flows from the expatriate Cuban community in Europe, in the rest of Latin America, and in other locations. Considering the steady emigration from Cuba to these locations historically, and the rise in recent years, particularly to Spain, the remittances estimates based exclusively on U.S. residents probably significantly understate actual remittances flows into the island.

To conclude, the quantity and quality of estimates of remittances to Cuba are poor. To some degree this results from the opaqueness of the Cuban statistical system and its failure to disaggregate balance of payments statistics so that remittances flows may be

Table 5. Estimates of Remittances to Cuba (million dollars)

|      | BOP<br>Estimates | Estimates Based on Remittances Senders |                                       |                            |          | Estimates Based on<br>Remittances<br>Recipients | Estimates Based on<br>Characteristics of<br>Remittances Senders |                                       | Ad Hoc<br>Estimates |                             |
|------|------------------|----------------------------------------|---------------------------------------|----------------------------|----------|-------------------------------------------------|-----------------------------------------------------------------|---------------------------------------|---------------------|-----------------------------|
|      |                  | CEPAL<br>1999, 2002                    | MIF 2000,<br>2004;<br>Orozco<br>2002b | Pérez<br>Rodríguez<br>2003 | FIU 2004 | Bendixen<br>2005                                | Blue 2004 <sup>a</sup>                                          | University<br>of Florida <sup>b</sup> |                     | Díaz-<br>Briquets<br>(1994) |
| 1995 | 537              |                                        |                                       |                            |          |                                                 |                                                                 | 300-500                               |                     |                             |
| 1996 | 630              |                                        |                                       |                            |          |                                                 |                                                                 |                                       |                     |                             |
| 1997 | 670              |                                        |                                       |                            |          |                                                 |                                                                 |                                       |                     |                             |
| 1998 | 690              |                                        |                                       |                            |          |                                                 |                                                                 |                                       |                     | 300-400                     |
| 1999 | 700              |                                        |                                       |                            |          |                                                 | 525                                                             |                                       |                     |                             |
| 2000 | 740              |                                        |                                       |                            |          | 240-278                                         |                                                                 | 500-800 <sup>c</sup>                  | 300-500             |                             |
| 2001 | 730              | 930                                    |                                       |                            |          |                                                 |                                                                 |                                       |                     |                             |
| 2002 |                  | 1194 <sup>d</sup>                      | 600                                   |                            |          |                                                 |                                                                 |                                       |                     | 500                         |
| 2003 |                  |                                        |                                       | 96 <sup>e</sup>            |          |                                                 |                                                                 |                                       |                     |                             |
| 2004 |                  |                                        |                                       |                            |          |                                                 |                                                                 |                                       |                     |                             |
| 2005 |                  |                                        |                                       |                            | 450      |                                                 |                                                                 | 600-1,000 <sup>5</sup>                |                     |                             |

Source: See text.

a. Blue does not make volume of remittances estimates. The estimates reported here have been made by the authors based on the results of Blue's study for households in La Habana and other assumptions. See text for explanation.

b. The University of Florida study does not make volume of remittances estimates. The estimates reported here have been made by the authors based on the results of the University of Florida's study and other assumptions. See text for explanation.

c. These estimates have been made by the authors based on the methodology in Díaz-Briquets (1994) and special tabulations from the 2000 U.S. Census of Population. See text for explanation.

d. MIF (2004) reports the \$1,194 estimate as referring to 2002 and 2003.

e. The FIU Poll estimates remittances of \$96 million from households located in Miami-Dade and Broward counties, Florida. The estimate of remittances from the entire Cuban American community reported here has been made by the authors. See text for explanation.

identifiable. It is also the result of lack of attention to this issue by the research community abroad and the lack of funding to conduct the large-scale surveys that would be necessary to make overall remittances

estimates. The Cuban government's restrictions on conducting survey research on the island compound this problem.

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