Commentary on Session III
U.S.–Mexico Remittances: Recent Trends and Measurement Issues

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International migration can be costly to a country in terms of the loss of human capital. In the case of massive out-migration, such as what Mexico has experienced over the past thirty years or so, the losses can be staggering. It is estimated that about 8 million Mexican-born workers—15 percent of the Mexican-born labor force—are in the United States.

The loss of labor results in a smaller economy, and aggregate income falls. However, it is not clear whether income per capita declines as a result of out-migration. That depends largely on who leaves. Remittances—migrants' money transfers to the families they have left behind—provide a migration offset that helps maintain income and consumption in the home country.

As the papers from this panel illustrate, remittances offer many benefits, both to recipient households, as Catalina Amuedo-Dorantes' work shows, and to the larger local economy, as Ed Taylor demonstrates. Taylor studies migration and remittances in a general-equilibrium context and finds that the multiplier effects of remittances are large (Taylor et al. 1996). This finding partly answers critics who complain that remittances that go to consumption do not have the same beneficial impact as remittances directed to investment. New research has even shown that remittances can help build financial markets. In the Mexican case, the process of remitting has sown the seed of financial intermediation in small communities that might otherwise have little access to banking and other formal financial services (Demirgüç-Kunt et al. 2007).

Dilip Ratha argues that given the benefits of remittances, taxing or otherwise creating barriers to legal international money transfers makes for bad public policy.

The rest of this commentary explores recent trends in U.S.–Mexico remittances, explaining how they are measured and comparing them with forecasts of remittances based on an econometric model and with trends in other developing countries.

Growth in U.S. Remittances to Mexico

The panel's compelling research on the development impact of remittances relies overwhelmingly on microdata collected through household surveys in migrants' home countries. For data on total remittance flows between countries, however, researchers, the government, and the media rely on official statistics. In the case of Mexico, the central bank is the best source of remittance data.

Banco de México data indicate both high levels and growth of remittances in the past decade. In fact, the volume and growth rate seen in these official data are much higher than what is implied by household survey data on senders and receivers and by other measures, such as remittance estimates from the U.S. Department of Commerce.

According to Banco de México, remittances totaled $20 billion in 2005 and by 2006 had grown to $23.1 billion. The 2006 level was 375 percent higher in real terms than 1995 remittances. In the post-2000 period, average annual growth was a remarkable 20.4 percent.

Many factors drive remittance growth, while others curtail it. As migrants spend more time away from home, for example, remittances generally fall, particularly if migrants take their families with them or form new families in the destination country. Drivers of growth, on the other hand, include increases in the migrant population and its income, declines in money transfer costs, and a currency depreciation or an economic crisis in the home country.

Several of these factors have been pushing up Mexican remittance totals, but they can't fully explain the recent growth. As real remittances grew 170 percent between 2000 and 2005, for example, the Mexican-born population in the U.S. grew 20 percent and real median weekly earnings of U.S. Hispanics rose 18 percent. Meanwhile, migrant inflows are estimated to have fallen in 2001, 2002, and 2003 as the U.S. economy entered recession and then experienced a weak labor market recovery (Passel and Suro 2005). In addition, in-migration in 2005 was estimated to have been below 2000 levels, and the dollar rose only 7.4 percent against the peso during these years. For remittance drivers, the biggest change came in the transaction cost of money transfers, with average costs falling more than 50 percent since 2000 (Orozco 2006).

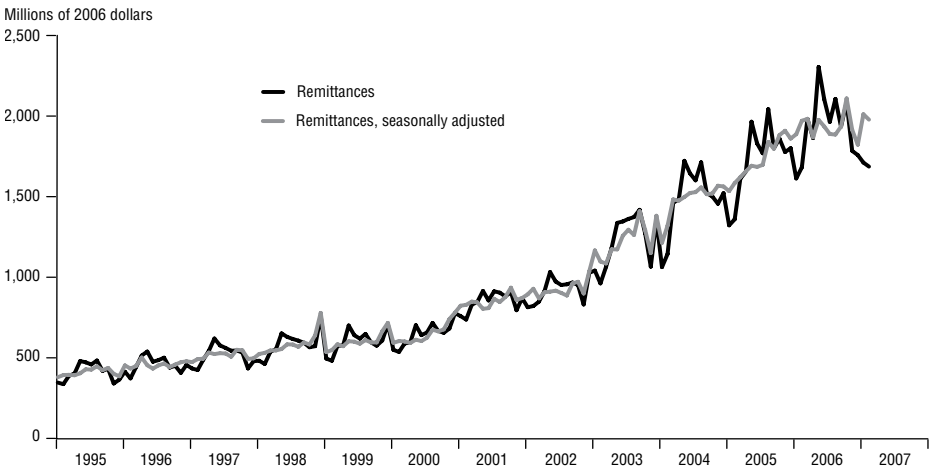
In sum, with the possible exception of transaction costs, it is difficult to reconcile the remittance growth pattern with underlying economic and demographic variables. But there is a third factor that may be the single most important determinant of the increases in observed remittances: better measurement.

Measuring Remittances

In 2000, Banco de México launched a major overhaul of the collection and recording of remittance data. Efforts initially focused on better recordkeeping within the central bank and then on better collection from sources outside the bank (Cervantes 2007). To this end, in October 2002, Banco de México issued rules under which all banks and money transfer companies had to register with the central bank and report monthly remittances by Mexican state of destination. Before 2003, monthly remittance levels were inferred from a 1990 census of financial institutions, money exchange houses, and wire transfer companies. The result of the reporting requirement was much improved data collection and a clear break with past trends in remittance numbers.

Figure 1 shows monthly U.S.–Mexico remittance data in 2006 dollars. In line with the measurement changes, the growth rate of remittances appears to have roughly three phases: 1995 to 2000, 2000 to 2002, and 2002 to 2006.[1] After 2002,

Figure 1
Measured Remittances Climb Faster After 2000



SOURCES: Banco de México; authors' calculations.

the series clearly shows more rapid growth and greater seasonality.

In addition to mandatory direct reporting by money transfer firms, Banco de México also incorporates remittances that go through informal channels. Every December, the central bank conducts a border survey that asks returning migrants questions about cash and goods they are bringing to relatives.

With the border survey and migrants' increased use of formal channels for transmitting remittances, the cash migrants carried home in the past is now being captured by the official statistics. So better measurement of remittances has itself contributed significantly to the growth rate observed in recent years.

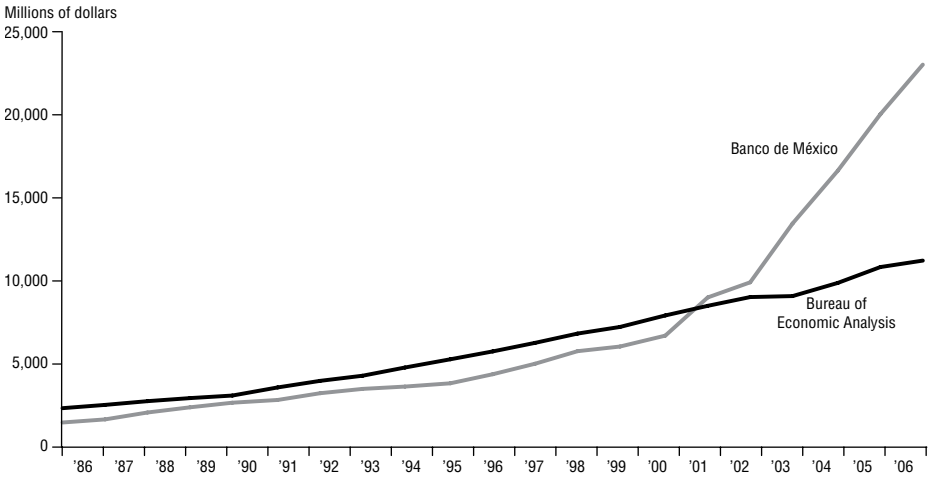
The main reason for the move from informal to formal channels has been the decline in transaction costs for both senders and recipients (Freund and Spatafora 2005). Greater competition and enhanced technology have driven down costs. More than 100 money transfer organizations served Mexico in 2005, compared with only five in 1995 (Mascaró 2007). Technological innovations like debit and credit cards and low-cost options like the Federal Reserve's automated clearing-house system (Directo a México) have further reduced costs. As a result, electronic transfers rose from 53 percent of remittances in 1996 to 85.8 percent in 2003 and 93 percent by 2006 (Cervantes 2007; Coronado 2004).

U.S. Government Data on U.S.–Mexico Remittances

There are other sources of information on remittance flows to Mexico, and some of their estimates differ starkly from the Banco de México's numbers. The U.S. Commerce Department's Bureau of Economic Analysis (BEA) estimates that remittances were $10.7 billion in 2005 and $11.1 billion in 2006—roughly half the official volume. Figure 2, which compares annual remittance data from the BEA and Banco de México, shows the two series diverging after 2002. The timing coincides with the central bank's adoption of the new measurement methodology, but the BEA and Banco de México have always used different remittance estimation techniques.

BEA estimation is not based on direct reporting by banks and other fund transfer companies but on a model built on assumptions about remittance behavior and estimates of the size and characteristics of the migrant population. The BEA methodology has the advantage of being low cost, and it includes transfers sent through both informal and formal channels. However, it is highly sensitive to assumptions about who is remitting and how much they are sending. In addition, while the BEA defines remittances as transfers by migrants who have been in the U.S. for at least one year, one report suggests the BEA model may capture some of the initial transfers (U.S. General Accountability Office 2006). In any case, the exclusion is not large enough to account for the difference between the BEA data and the official, Banco de México numbers. And given recent growth rates in such fundamental measures as population and income of Mexicans in the U.S., any

Figure 2
U.S., Mexico Remittance Data Diverge After 2002



SOURCES: Banco de México; U.S. Department of Commerce.

model-based estimate will clearly not generate the double-digit growth official measures have documented.

Microdata on Remittances

In addition to government, or macro, measures of remittances, there are survey-based, or micro, measures of remittances by senders and receivers. Esquivel and Huerta-Pineda (2005) discuss recipient-based measures from a large, nationally representative household survey in Mexico called ENIGH (Encuesta Nacional de Ingresos y Gastos de los Hogares). ENIGH data report that in 2002, 1.4 million households received an average of $2,560. Based on this, remittances to Mexico totaled $3.6 billion in 2002, only 37 percent of the official estimate.

Some Mexican officials have questioned the discrepancy between the microdata, from such sources as ENIGH, and official remittance estimates. They contend the Banco de México methodology does not do enough to exclude illicit business transactions, such as payments to human smugglers and drug traffickers, or legitimate nonfamily transfers, such as donations to nonprofit organizations (Muñoz 2006).

Sender-based microdata on the quantity of remittances also differ from official

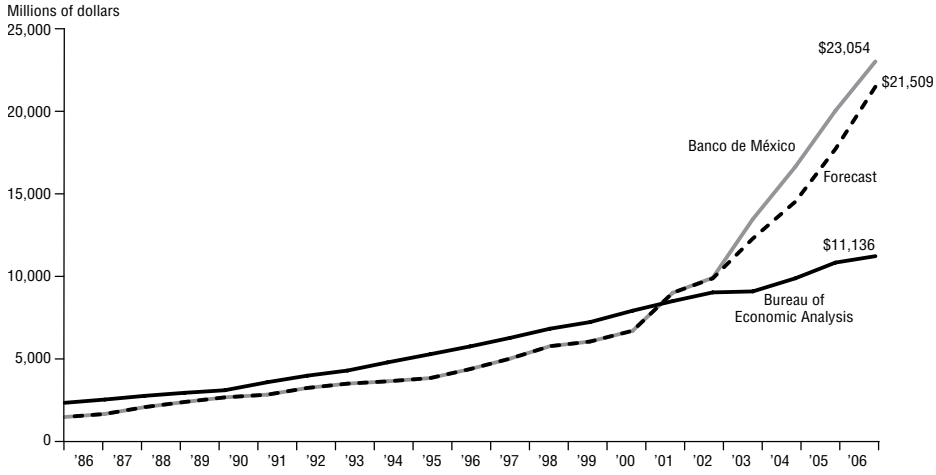
estimates. Amuedo-Dorantes finds that in Mexican Migration Project (MMP) data, 79 percent of Mexican workers in the U.S. remit an average of $350 per month. If migrants in the MMP were representative of Mexicans in the U.S., these numbers would be consistent with official remittance estimates of more than $20 billion. Of course, MMP is a survey of return migrants with characteristics that distinguish them from Mexican immigrants in general. MMP migrants tend to be experienced migrants who maintain households in Mexico while they work temporarily in the U.S. and send or carry very large percentages of their incomes back home. They are poorer and have less education than Mexicans on average and tend to come from states with established migrant networks in the U.S. In sum, it would not be prudent to apply the characteristics of MMP migrants to the Mexican population in the U.S., which is more affluent but also has fewer ties to home.

A Model of Remittances

The BEA and microdata cannot replicate the trends found in the remittance data from Banco de México in the post-2002 period. What would a macroeconomic forecast based on official data before the measurement changes predict for this period? To explore this question, we construct an autoregressive integrated moving average model (ARIMA) of quarterly remittances as a function of several macroeconomic variables, including U.S. and Mexican GDP, the dollar–peso exchange rate, the U.S. Consumer Price Index, and maquiladora employment. We difference the data to ensure stationarity and use autocorrelation functions to estimate the lagged structure of each variable and the residuals vis-à-vis remittances. Then we run the model of remittances on its determinants and lagged values of itself, including current and lagged values of independent variables and allowing for the appropriate ARIMA structure of the residuals. A forecast is generated by projecting the fitted values of remittances as of fourth quarter 2002.

The results, together with remittances and BEA estimates, are shown in Figure 3. Interestingly, macroeconomic determinants plus lagged remittances can explain most of the gap between BEA and Banco de México estimates. The model predicts that remittances would have been $21.5 billion in 2006, only about $1.5 billion short of the actual number. The central bank's new methodology, discussed above, and the decline in transactions costs more than account for the shortfall. Adding control variables to capture the effect of the post-2002 change suggests the impact of the new methodology amounted to $700 million at most in 2006.[2] Estimates of the cost elasticity of remittances suggest that the decline in transfer costs between 2000 and 2005 likely boosted 2006 transfers by $1.5 billion.[3]

Figure 3
Model Captures Most of Post-2000 Surge in Remittances



SOURCES: Banco de México; U.S. Department of Commerce; authors' calculations.

Comparing Remittances Across Countries

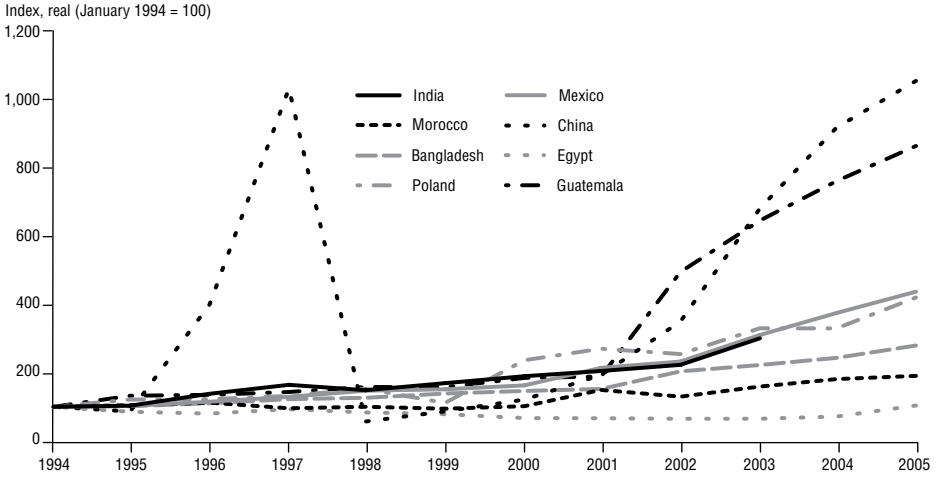
Remittances have been rising worldwide, and other countries' experiences are helpful for putting the Mexican case into context. Mexico's double-digit annual growth rates are not unusual. Figure 4 shows an indexed series of real remittances from 1994 to 2005 for a group of developing countries, many of which have experienced growth rates as high as or higher than Mexico. According to International Financial Statistics data, remittances more than doubled in real terms in India, Mexico, the Philippines, China, Bangladesh, Poland, Colombia, Guatemala, El Salvador, the Dominican Republic, Nigeria, Ecuador, Indonesia, Sri Lanka, and Jamaica, among other countries.[4]

Conclusion

There is no doubt that remittances to Mexico are high and have grown quickly. What factors are driving the rapid growth are less well known, particularly since microdata and other sources are out of line with official statistics. This situation is not unique to Mexico. As we have seen, remittances to many developing countries have more than doubled over the past decade, far outpacing changes in demographic or economic fundamentals.

Better measurement is the most important factor underlying changes in the data. At the same time formal transfers are being better measured, informal trans-

Figure 4
Remittances Rising for Many Countries



SOURCE: International Monetary Fund, International Financial Statistics database.

fers are shrinking as migrants increase their use of formal channels. The switch is due to many factors, but none as important as the sharply falling cost of remitting.

Remittance data have historically been of poor quality and grossly underestimated migrant transfers. To remedy this, a global effort is under way to standardize the definition and measurement of remittances. This will facilitate cross-country comparisons and analysis as well as appropriate policy responses to growing transfer flows.

Given the significance of remittances to the home country, precise measurement is extremely important. Governments need accurate measures of where remittances are going and how large they are to track the impact on the poor and better target social programs, infrastructure improvements, and financial industry regulation. In Mexico, several government matching programs leverage the power of remittances to improve conditions through investment in schools and infrastructure.

Remittances give rise to policy issues in the host country as well. A crucial issue is financial access for immigrants, particularly those who are undocumented. Governments struggle with trying to block illicit money flows that may go to terrorist groups or other criminals, while at the same time allowing immigrants access to banks. As measurement and standardization issues are resolved, the policy issues will surely come to dominate the debate over remittances.

Notes

The views expressed are those of the authors and do not necessarily reflect those of the Federal Reserve Bank of Dallas or Federal Reserve System.

[1] The average annual growth rate in each period was 10.3 percent, 16 percent, and 20.6 percent, respectively.

[2] To approximate the effect of the change in methodology, we fully interacted the model with a postchange dummy variable that takes the value 1 starting in fourth quarter 2002.

[3] The cost elasticity of remittances is assumed to be −0.4, as reported in Freund and Spatafora (2005).

[4] Data for India are available only through 2003.

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