



## Improving the Measurement of Cross-Border Securities Holdings: The Treasury International Capital SLT

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Understanding and accurately measuring cross-border financial flows and positions has long been important for analysis of portfolio exposures, but the significance of these measures has intensified since the onset of the financial crisis in late 2007, when patterns of cross-border flows changed dramatically.<sup>1</sup> In the United States, the system for measuring cross-border security investment has to this point consisted of annual surveys that measure securities *positions* and monthly reports that measure *transactions* in securities collected through the Treasury International Capital (TIC) reporting system.<sup>2</sup> During the crisis, estimated cross-border positions based on the more timely transactions data collected on the TIC S form were imperfect and in some cases misleading; in these cases, the more comprehensive survey data later revealed different patterns that would have improved understanding of vulnerabilities had they been known sooner. In the wake of the crisis, interest in improving the measurement of cross-border securities positions and flows was a chief motivation for the introduction of a new TIC reporting form for collecting monthly aggregate cross-border securities position data, the TIC SLT, for which the first wave of data was released on May 15, 2012.<sup>3</sup> This article reviews the general structure of cross-border position and flow data, the benefits that the new SLT can provide, and the incoming information from the first two reporting months of SLT data, September and December 2011. While some patterns and characteristics of the SLT data will only become clear over time, the SLT data have already begun to provide insights on U.S. and foreign cross-border investment flows that are different from the monthly estimates based on existing flow data.

Cross-border financial flows are the other side of current account transactions, or trade in goods and services: When goods or services are bought by one country, the cost of the items acquired must, on net, be covered either by a corresponding sale of goods or services or by financial inflows, or sales of financial assets. For the United States, which has run a current account deficit for about two decades, measurements and analysis of cross-border financial flows and positions is vital for understanding the sustainability of the U.S. current account deficit.

Cross-border financial flows occur mainly in the form of purchases and sales of securities, lending to banks and firms, and direct investment. The first two types of activity are monitored through the TIC reporting system; the third, direct investment, which we will not

<sup>1</sup> See Bertaut and Pounder (2009).

<sup>2</sup> TIC data, documentation, and forms are available at [www.treas.gov/tic](http://www.treas.gov/tic).

<sup>3</sup> SLT is an abbreviation for "Securities Long Term." The form's title is "Aggregate Holdings of Long-Term Securities by U.S. and Foreign Residents."

review here, is collected and administered by the Bureau of Economic Analysis (BEA).<sup>4</sup> The TIC reporting system comprises several monthly forms as well as annual surveys and more-extensive periodic benchmark surveys of securities holdings; [Appendix A: The TIC Reporting System](#) provides an overview. Monthly TIC estimates of cross-border securities positions between surveys suffer from several shortcomings; because of these shortcomings, as well as interest in more-comprehensive, timely, and internationally comparable data, the SLT was developed and was first used in September 2011. The TIC SLT brings U.S. data collection into better alignment with updated international reporting standards, allows for quarterly publication of the U.S. International Investment Position, provides significantly timelier measurements of cross-border securities positions, and should ameliorate some, though not all, of the shortcomings of the current estimates based on the monthly transactions data.

This article reviews four topics. First, we review the data collection and compilation methodology in place prior to the debut of the SLT, including a review of the shortcomings and pitfalls of those reports and methods. Second, we review the SLT methodology and its ability to improve upon the existing system. We also discuss ongoing challenges to reporting and corresponding cautions that apply to interpretation of the data. We then review, based on the initial data received, the additional coverage provided by the SLT and the differences between the SLT data and the previous estimates based on cross-border flows. Finally, we compare the changes in cross-border holdings reported on the TIC SLT for the fourth quarter of 2011 with the estimates of the same changes based on the previous methodology. In general, the SLT data confirm trends indicated by the existing transactions-based position estimates: Cross-border positions in both claims and liabilities have largely recovered from the pullbacks that occurred during the financial crisis.

Although the initial SLT data for September and December should still be regarded as somewhat preliminary, the SLT readings nonetheless indicate changes in patterns of securities holdings that are in some ways quite different from the movements estimated using other available data. First, the new data indicate that U.S. investors shed rather than augmented their holdings of European long-term bonds late last year, a time that saw unusual strains in European financial markets. Second, these data indicate two trends in foreign holdings of U.S. Treasury securities in late 2011: a stronger overall foreign appetite for U.S. Treasury securities but a considerably larger decline in Chinese holdings of U.S. Treasury securities during late 2011 than had been estimated earlier. This data revision for China was not surprising: Data for China are typically revised when the annual TIC survey data become available. However, the magnitude and direction of the revision were surprising relative to earlier years, and with the SLT, we are able to see that change much sooner than we have in the past.<sup>5</sup>

### Measuring Securities Positions and Flows Prior to the SLT: The Annual Surveys and the TIC S

The TIC SLT will be a complement to the two older TIC system elements that focus on collecting securities data: the annual surveys, which collect detailed data on cross-border secu-

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<sup>4</sup> The BEA compiles the most comprehensive measures of cross-border financial flows and positions in the quarterly balance of payments accounts and in the annual net international investment position. The BEA's data on international accounts, including the balance of payments accounts and the international investment position, are published in both the BEA's Survey of Current Business ([www.bea.gov/scb/index.htm](http://www.bea.gov/scb/index.htm)) and on its International Economic Accounts webpage ([www.bea.gov/ea/di1.htm](http://www.bea.gov/ea/di1.htm)).

<sup>5</sup> These data were reported in late February as part of the Major Foreign Holders of U.S. Treasury Securities table at [www.treasury.gov/resource-center/data-chart-center/tic/Documents/mfh.txt](http://www.treasury.gov/resource-center/data-chart-center/tic/Documents/mfh.txt).

rities positions; and the TIC S, which collects cross-border securities transactions data. (See appendix A for a review of all of the TIC forms.) Prior to the introduction of the TIC SLT, accurate estimates of cross-border securities positions were available from the surveys only with a substantial lag. In the months after the release of TIC S transactions data and prior to the release of the next survey, cross-border positions could be estimated using TIC S transactions and valuation adjustments. These position estimates, which we call Survey-S estimates, are useful but have significant limitations. The methodology for calculating these Survey-S estimates and its limitations are described more fully in the section Estimating Monthly Positions from Survey and TIC S Data, following a review of the features of the survey data and of the TIC S data.

## Measuring Cross-Border Securities Positions: The Annual TIC Surveys

Annual surveys of cross-border security holdings provide the most accurate and detailed information on cross-border securities holdings by the United States and the rest of the world.<sup>6</sup> The TIC system currently conducts two sets of comprehensive position surveys annually for both long- and short-term securities.<sup>7</sup> First, the liabilities survey measures foreign holdings of U.S. securities at the end of June each year. Data are collected at the individual security level by country of holder, and by type of holder (official or private). Second, the claims survey measures U.S. holdings of foreign securities at the end of December each year. Data are collected at the individual security level and by broad type of holder. For both surveys, data are collected at the market value. Staff members at the Federal Reserve Bank of New York and at the Federal Reserve Board conduct extensive reviews of the data, including reporters' valuations of each security and reporters' designation of each security's characteristics, most importantly the security issuer's country of incorporation. In addition to any corrections, the raw aggregated data are also adjusted for securities that are reported by both issuers and custodians, and to make reporting samples comparable across annual and benchmark years.<sup>8</sup>

### The Annual Liabilities Survey

**Figure 1**, panel A, shows foreign holdings of U.S. securities by asset type for the years 2003 to 2011. Most foreign holdings of U.S. securities are in debt (almost 70 percent as of June 2011), especially in long-term debt. Treasury securities and corporate bonds are the two largest categories of debt that foreigners hold. The share of long-term Treasury securities in total foreign holdings of U.S. securities has increased from about 20 percent in 2007 to more than 30 percent in 2011, mainly due to investment of substantial foreign exchange accumulations by foreign official investors. Foreign official investors are the largest foreign investors in U.S. Treasury securities; their share in total foreign holdings of U.S. long-term Treasury securities has grown from 62 percent in June 2002 to 77 percent in June 2011. Short-term debt holdings (not shown) have been small, generally less than 10 percent of total foreign holdings since 2002.

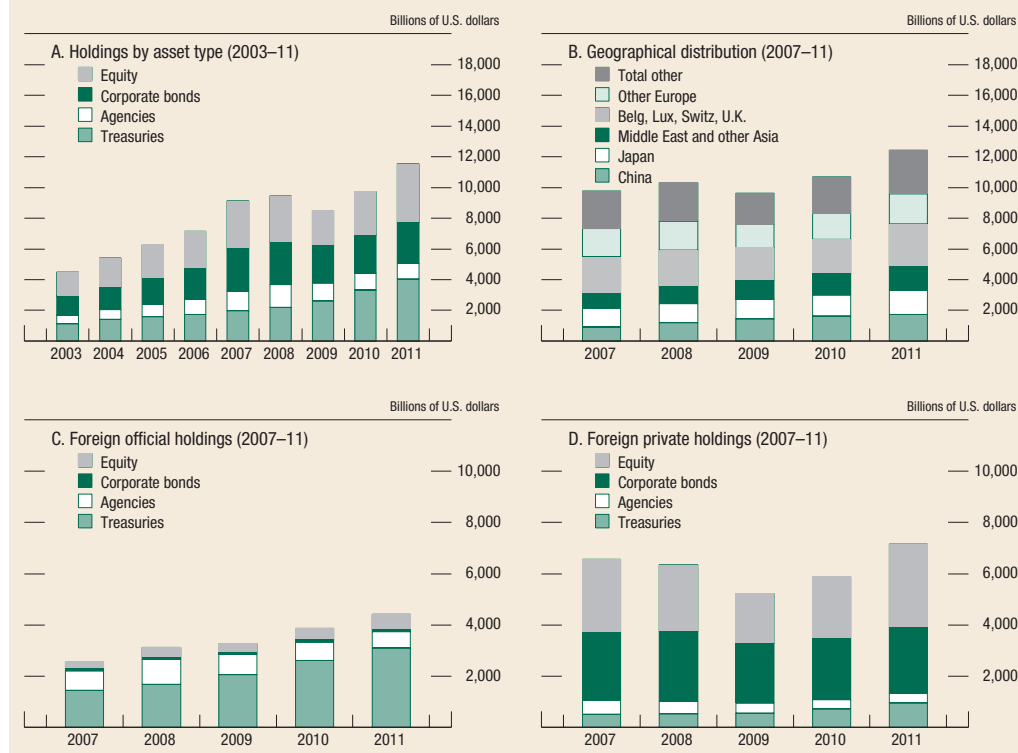
Figure 1, panel B, reports the geographic distribution of foreign holdings of U.S. securities. China and Japan are currently the two largest foreign holders of U.S. securities, but hold-

<sup>6</sup> For additional background information on the surveys, see Grier, Lee, and Warnock (2001); Bertaut, Grier, and Tryon (2006); and the annual survey reports released by the Treasury Department available at [www.treasury.gov/resource-center/data-chart-center/tic/Pages/fpis.aspx](http://www.treasury.gov/resource-center/data-chart-center/tic/Pages/fpis.aspx).

<sup>7</sup> In addition, benchmark surveys from a more comprehensive panel of reporters have been conducted periodically; currently, they are conducted every five years. The most recent benchmark claims survey was conducted in December 2011 and the most recent benchmark liabilities survey was conducted in June 2009.

<sup>8</sup> See chapter 2 of the annual survey reports for more details on the survey methodology. Annual survey reports are available at [www.treasury.gov/resource-center/data-chart-center/tic/Pages/fpis.aspx](http://www.treasury.gov/resource-center/data-chart-center/tic/Pages/fpis.aspx).

Figure 1. Foreign holdings of U.S. long-term securities



ings by other Asian countries and Mideast countries have also grown rapidly in the past few years. Belgium, Luxembourg, Switzerland, and the United Kingdom collectively have large foreign holdings of U.S. securities; of this group, the United Kingdom is the largest holder, and the third-largest holder of U.S. long-term securities overall. The large volume of holdings in this group of countries highlights the main pitfall in the liabilities survey—“custodial bias.” The country attribution of foreign holdings of U.S. securities as reported in the liabilities surveys is imperfect because many foreign owners entrust the safekeeping of their securities to institutions that are neither in the United States nor in the owner’s country of residence. For example, a German investor may buy a U.S. security and place it in the custody of a Swiss bank. In the surveys of foreign holdings of U.S. securities, such a holding typically is recorded against Switzerland rather than Germany. This custodial bias contributes to the large recorded foreign holdings of U.S. securities in major financial centers, such as Belgium, Luxembourg, Switzerland, the United Kingdom, and the Caribbean banking centers.<sup>9</sup>

The large holdings of U.S. securities by entities in offshore financial centers—especially those in the Caribbean—pose additional obstacles to interpreting foreign investors’ cross-border financial activity because these holdings largely reflect the securities portfolios of the numerous investment funds that have been established in such offshore locations rather than the portfolio preferences of residents of those countries. Moreover, because many

<sup>9</sup> In addition, the country attribution in the liabilities survey is complicated by bearer, or unregistered, securities. Bearer securities generally cannot be issued in the United States, but U.S. firms can and do issue such securities abroad, and typically little or no information is available about the owners of these securities because they need not make themselves known. The vast majority of the debt securities attributed to owners whose country of residence is unknown in the liabilities surveys are bearer securities.

Caribbean banking centers include the Bahamas, Bermuda, the Cayman Islands, the Netherlands Antilles, Panama, and the British Virgin Islands.

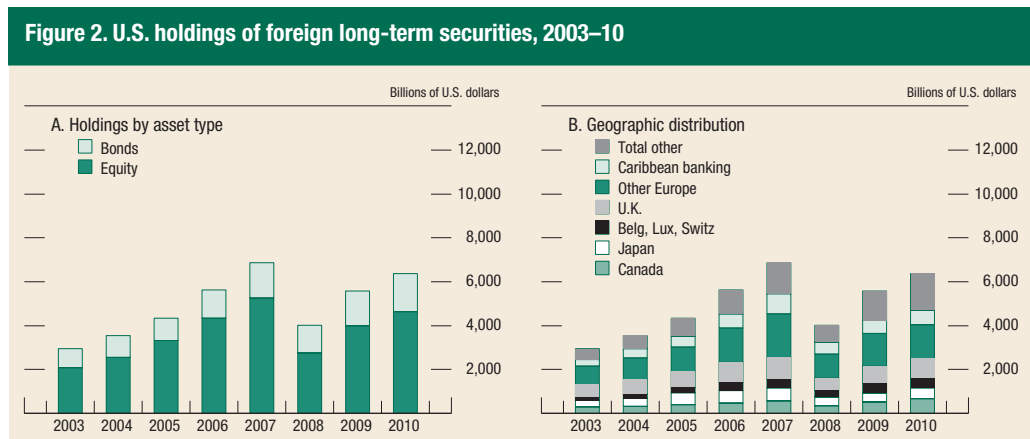
financial institutions have affiliated banking and nonbanking offices in these offshore locations, analyzing securities transactions through these centers can be difficult without knowing whether offsetting transactions are occurring through other parts of the financial accounts. For example, when entities located in financial centers buy U.S. securities from U.S. broker-dealers, those transactions are recorded as financial inflows to the United States. However, such transactions could well be offset by equally sizable net outflows to the same financial centers but reported in other parts of the financial accounts, such as the TIC banking data.

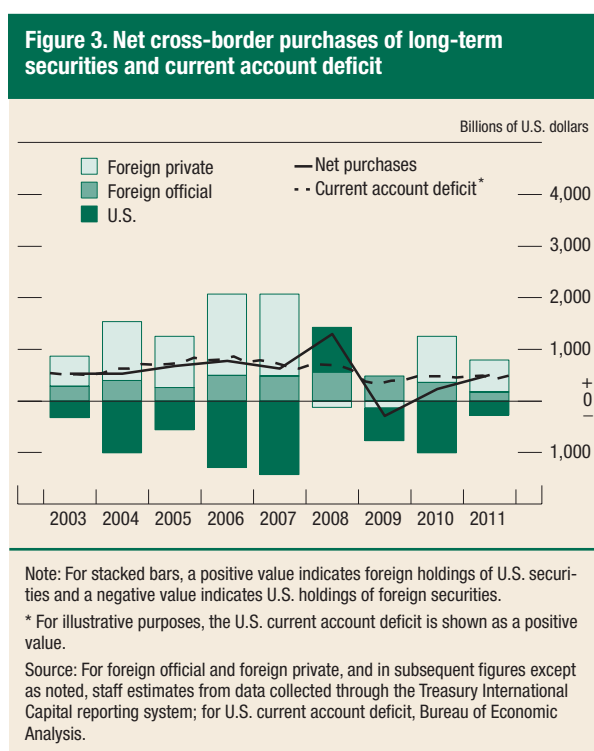
Foreign official and private investors have very different portfolios of U.S. long-term securities, as seen in panels C and D of figure 1. Foreign official holdings of U.S. securities are dominated by Treasury securities and U.S. agency securities, which together account for about 85 percent of such holdings. In contrast, foreign private investors' holdings of U.S. long-term securities are dominated by equity and corporate bonds, each of which account for about 40 percent of such holdings.

### The Annual Claims Survey

The claims survey measures U.S. holdings of foreign securities at the end of December each year. These data are collected at the individual security level by country of issuer for U.S. holdings of foreign bonds, equities, and short-term debt. **Figure 2**, panel A, shows U.S. holdings of foreign securities by asset type from 2003 to 2010. Most U.S. holdings of foreign securities are in foreign equities (about two-thirds as of December 2010), followed by long-term debt. As with foreign holdings of U.S. securities, U.S. investment in short-term foreign debt (not shown) is small, generally less than 10 percent of total U.S. cross-border portfolio holdings.

Panel B of figure 2 shows the United Kingdom, Canada, and Japan as some of the countries with the largest U.S. securities investments. Besides Europe, Caribbean banking centers are also a significant destination of U.S. investment overseas, which reflects the main shortcoming in the claims survey—that is, the claims survey identifies the country of issue of securities based on their country of legal incorporation, which may not be the center of the security issuer's activity. For example, equity of a U.S. multinational firm reincorporated in Bermuda or the Cayman Islands is officially identified with Bermuda or the Cayman Islands even though its center of activity is still in the United States and its equity trades on U.S. exchanges. Thus, TIC survey data based on where the issuer is incorporated can cause odd patterns of U.S. holdings that can be hard to reconcile with measures of foreign country market capitalization. For example, U.S. holdings of equities registered in Bermuda and Ireland in 2010 exceeded 100 percent of those countries' domestic market capi-





talization.<sup>10</sup> Likewise, growth in special purpose vehicles (SPVs) in offshore financial centers can pose a challenge to measuring and interpreting U.S. investors' portfolios.<sup>11</sup> Although securities issued by multinational corporations reincorporated in the Caribbean or through offshore SPVs fit the definition of foreign securities, U.S. investors may not regard them as such because they trade in U.S. dollars on U.S. exchanges and are often issued by firms that conduct their market activity largely in the United States and otherwise behave like U.S. firms. In addition, since most Caribbean banking center debt is dollar denominated, growth in dollar-denominated debt securities issued in Caribbean banking centers obscures other important developments in the currency composition of U.S. holdings of foreign bonds.

Overall, both U.S. cross-border liabilities and claims are substantial. However, as shown in **figure 3**, net purchases of U.S. long-term securities by foreigners have exceeded flows in the opposite direction, net purchases of foreign long-term securities by U.S. residents. This difference generally coincides with net foreign official purchases of U.S. long-term securities. Overall net cross-border purchases of long-term securities—foreign purchases of U.S. securities less U.S. purchases of foreign securities—the solid line, roughly balance the current account deficit, shown with a positive value as the dashed line in figure 3.

### Shortcomings of the Survey Data

Both liabilities and claims survey data are collected primarily from large U.S. custodian banks and U.S. broker-dealers, but also from issuers of U.S. securities directly issued in the foreign markets and from large U.S.-resident end investors who do not use U.S. custodians for holdings of foreign securities (for example some pension funds, foundations, and endowments).<sup>12</sup>

Despite the richness of the TIC survey data at the security level, major shortcomings of the survey data are that these data are only available annually, are collected at different times for liabilities and claims, and are only usable with a substantial lag: Preliminary data from each survey are typically released eight months after the survey date. For example, the preliminary data from the June 2011 liabilities survey were released at the end of February

<sup>10</sup> See table A14 in U.S. Department of the Treasury, Federal Reserve Bank of New York, and Board of Governors of the Federal Reserve System (2010).

<sup>11</sup> See Bertaut, Griever, and Tryon (2006).

<sup>12</sup> All U.S.-resident entities that have been contacted by the Federal Reserve Bank of New York must report, regardless of the size of their consolidated holdings.

2012, and the preliminary data from the December 2011 claims survey are due to be released at the end of August 2012.

### **Measuring Cross-Border Transactions: The TIC S Data**

In addition to the survey data, which measure positions in securities at a certain point in time in a year, the TIC system also collects financial flow data on the S form. The TIC S form collects monthly transactions data on cross-border purchases and sales of U.S. Treasury and agency securities, U.S. corporate bonds and other bonds, U.S. equities, and foreign stocks and bonds. These data are collected primarily from U.S.-resident broker-dealers responsible for securities transactions with nonresidents, but are also collected from some issuers, end investors, and money managers.<sup>13</sup> Unlike the survey data, TIC S data are collected only in aggregate by security type but become available with a much shorter lag—about 45 days. Thus, TIC S data provide us with a timely and useful tool to gauge cross-border investment at a monthly frequency. For example, are U.S. investors investing abroad, in equities or debt? Are foreign investors buying U.S. securities? Are they mainly official or private investors? The TIC S data can help to answer these questions between surveys, but it is important to note three pitfalls of the TIC S data that can cause misleading interpretations of cross-border flows.

First, by design, the TIC S data are recorded according to country of the first cross-border counterparty, not the country of the ultimate buyer or actual seller or issuer of the security. By recording direct transactions with foreign residents, who are often broker-dealer counterparties, the TIC S data record financial transactions between the two countries, information that is important for the U.S. balance of payments statistics. As a result, the geographical distribution of transactions is distorted by activity through financial centers, or suffers from a “transactions bias.”<sup>14</sup> For example, when a German resident buys a U.S. Treasury bond through a London broker, the TIC S will record a sale to the United Kingdom rather than Germany. As a result, the reported monthly transactions data are concentrated in major international financial centers. In contrast, position data collected by the surveys and the SLT record the holder and so do not suffer from this transactions bias.

Second, measured transactions do not fully account for transactions made on behalf of official foreign investors. For example, if the Chinese government buys U.S. agency bonds through an intermediary in Hong Kong, the TIC S (correctly) will report a purchase of U.S. agency bonds by a private Hong Kong counterparty. The TIC S does not capture the foreign-to-foreign transaction showing the final owner to be an official mainland China counterparty; these distinctions can be important when trying to assess, for example, official and private demand for U.S. assets.

Third, the TIC S data do not record important cross-border flows in securities that do not pass through standard broker-dealer channels. In particular, the TIC S cannot account for principal repayment flows of asset-backed securities (ABS). Thus, the large holdings of U.S. asset-backed agency and corporate bonds result in overestimates of foreign net acquisitions of these securities. Similarly, the TIC S does not collect data on cross-border acquisitions of stocks through merger-related stock swaps or re-incorporations because these transactions are considered direct investment transactions, for which data are collected by the BEA. For example, when a U.S. firm buys a foreign firm and the transaction is financed through a stock swap, or when a foreign firm relocates to the United States,

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<sup>13</sup> Reporting is legally required for these entities if their monthly cross-border transactions are above the \$50 million threshold during the reporting month.

<sup>14</sup> See Grier, Lee, and Warnock (2001) and Warnock and Cleaver (2002).

U.S. residents' holdings of the foreign firm's stock are no longer considered foreign securities, but the change in ownership is not reported on the TIC S.<sup>15</sup> To assist users in obtaining more-comprehensive net transactions data, Federal Reserve Bank of New York and Federal Reserve Board staff construct estimates of ABS repayment flows and stock swaps, and these estimates are published on the TIC website.<sup>16</sup>

A final complication that can affect both the TIC S data and the annual survey data, and that also affects the SLT data, arises from the activities of U.S. investors who entrust their securities holdings to foreign investment managers or foreign custodians. Typically, a U.S. investor who keeps foreign securities abroad will use a domestic investment manager who will report the investor's holdings on the annual claims survey on behalf of the U.S. investor. However, if the U.S. investor uses a foreign investment manager, these holdings and associated securities transactions may be missed because the TIC reporting system can collect data only from U.S.-resident entities and cannot collect information from individual U.S. persons. As a result, U.S. holdings of foreign securities may be somewhat underreported in the TIC system. On the other hand, if a U.S. resident holds U.S. securities with a custodian abroad, it is possible that these holdings will be counted as foreign holdings of U.S. securities because the U.S. custodian who has subcustodian responsibilities may not know that they are held on behalf of a U.S. investor. This particular form of custodial bias can lead to overreporting of foreign holdings of U.S. securities.

### **Estimating Monthly Positions from Survey and TIC S Data: The Survey-S Estimates**

In order to obtain timelier information on cross-border securities positions between surveys, we can estimate monthly time series of positions to date by combining the annual survey data with the TIC S data.<sup>17</sup> The monthly estimated positions between surveys are constructed in three steps for each asset type in the liabilities and claims surveys, as indicated in the following equation:

$$x_t = x_{t-1}(I + V_t) + S_t + A_t$$

First, beginning with data from the survey month,  $x_{t-1}$ , the next month's position,  $x_t$  is adjusted for valuation changes,  $V_t$ , using a combination of standard price indexes of U.S. or foreign securities. The combination of price indexes is chosen to approximate the portfolios held by foreign and U.S. investors as indicated by earlier surveys. Next, the current month's net transactions,  $S_t$ , are added. Finally, adjustments,  $A_t$ , are included to account for repayment flows of principal on asset-backed agency securities, acquisitions of equity through stock swaps, and transactions in nonmarketable Treasury bonds. We refer to these monthly position estimates as the Survey-S estimates.

As noted in Bertaut and Tryon (2007), however, there are often considerable discrepancies between the reported survey positions and position estimates derived from the monthly transactions data as published by the Treasury. At the individual country level, such discrepancies are largely due to the transactions bias in TIC S reporting. Constructing estimated positions based on the country-level monthly transactions data tends to generate estimates of holdings by residents of such financial center locations that considerably over-

<sup>15</sup> For more details, see Bertaut and Tryon (2007).

<sup>16</sup> See [www.treasury.gov/resource-center/data-chart-center/tic/Pages/ticsec2.aspx](http://www.treasury.gov/resource-center/data-chart-center/tic/Pages/ticsec2.aspx), sections 4a and 4b.

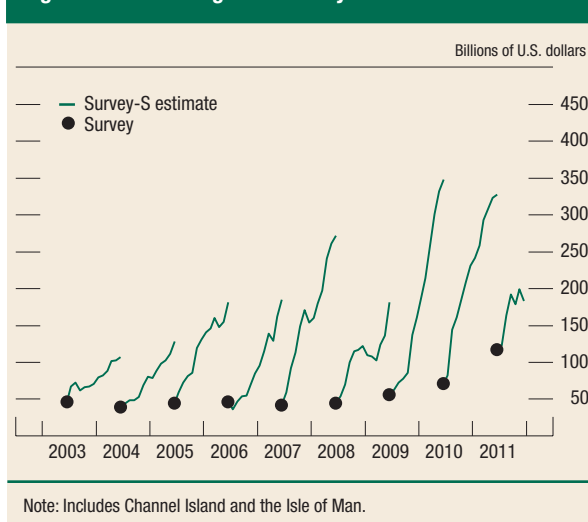
<sup>17</sup> Monthly transaction data and annual survey data are integral to the BEA's estimate of holdings in the annual International Investment Positions (IIP) publication. The BEA also uses the information obtained from TIC S and survey data in calculating investment income and financial flows in the U.S. Balance of Payments statement.



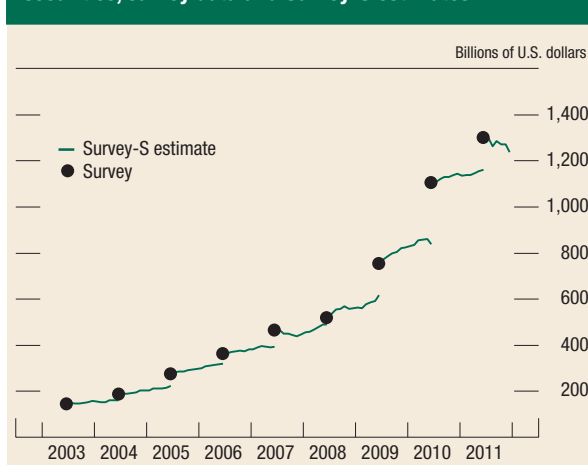
state actual holdings as reported in the next survey, and will tend to underestimate holdings by residents of other countries.

**Figure 4** and **figure 5** illustrate both sides of this problem for holdings of U.S. Treasury bonds by the United Kingdom, a transactions center, and holdings of U.S. Treasury securities by China, whose transactions are apparently often executed offshore. The solid lines indicate estimated positions based on the previous year's survey, cumulated transactions from the TIC S, and adjustments for valuation changes. The dots indicate reported survey positions. For the United Kingdom, estimated positions, even after adjusting for valuation changes, are consistently much higher than the survey results, presumably representing transactions in U.S. securities made in the United Kingdom on behalf of third parties. Conversely, estimated positions for China are much lower than reported positions, which reflect transactions conducted via overseas accounts. More generally, because of the transactions bias, our position estimates could give a misleading impression about which country is buying U.S. securities, and how U.S. and foreign investors are adjusting their portfolios.

**Figure 4. U.K. holdings of Treasury bonds**



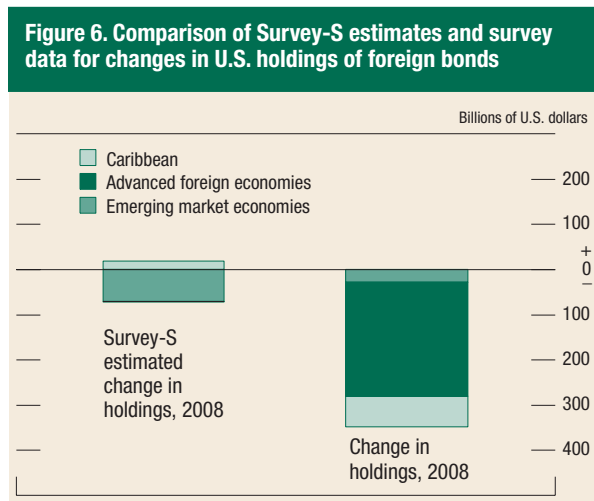
**Figure 5. China holdings of long-term U.S. Treasury securities, survey data and Survey-S estimates**



### Conflicting Signals: Readings from the TIC S and Survey during and after the Crisis

Under the existing system, although the TIC S reporting provides us with a way to estimate positions data between surveys, misleading interpretations caused by the transactions bias are not revealed until the next annual survey. Given such limitations, there has been a growing demand for more-accurate and timely positions data by market participants and policy-makers, especially in light of the recent financial crisis.

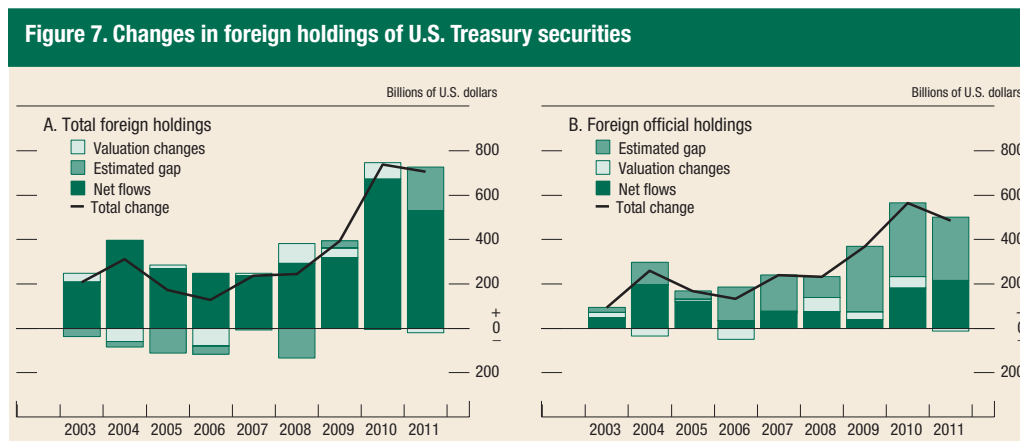
**Figure 6** provides an example of what the existing system indicated about U.S. investment in foreign bonds in 2008, and what we could have learned earlier had a more-accurate and timely data source been available. As the crisis was unfolding, the TIC S indicated that, on net, U.S. investors were sharply reducing their holdings of foreign government and corporate bonds, especially those issued from emerging market economies (EMEs). These movements suggested that the EMEs might face difficulty obtaining funding in interna-



tional markets. In fact, these data were somewhat misleading: Survey data received much later, in the summer of 2009, indicated that the situation for EMEs was less severe than had been indicated by the TIC S but that the situation for other countries was more severe. The value of foreign bonds held by U.S. investors fell by considerably more than the TIC S had indicated, and the reductions had been concentrated not in the EMEs but rather in advanced economies. The difference between the country attribution of the Survey-S estimates and that of the survey data is likely due

to the transactions bias in this instance. Purchases of EME securities, especially those issued in international markets, could have been recorded as purchases of securities issued by the country in which the sale occurred while redemptions of the same bonds would have been correctly attributed to the issuing country. In addition, the survey data revealed that actual U.S. sales of foreign bonds were apparently larger than were reported on the TIC S.

A more recent example is movements in foreign holdings of U.S. Treasury securities, a topic of interest given the large issuance of debt by the Treasury, large purchases of Treasury securities by the Federal Reserve, and the announcements by some large holders of U.S. Treasury securities, most notably China, of intentions to diversify their reserve asset holdings, presumably away from Treasury securities. The Survey-S estimates, shown in panel A of **figure 7** by the sum of the pale green and dark green bars, indicate that total foreign holdings of U.S. Treasury securities rose about \$500 billion in 2011—substantially less than the \$750 billion increase over the previous 12-month period. However, the survey data from June 2011, released in late April 2012 and shown by the black line, indicate that foreign holdings of U.S. Treasury securities from mid-2010 to mid-2011 increased nearly as much as they had in the previous year—about \$700 billion. The discrepancy between the actual change in holdings and the Survey-S estimates is shown by the positive medium green bar. Because valuation changes for Treasury securities are typically fairly small relative to the total change in holdings, this positive “gap” indicates the extent to which reported net purchases of Treasury securities likely understated actual foreign acquisitions. There are several possible explanations for this gap and investigation is ongoing. First, it is possible that



some cross-border transactions in the huge Treasury securities market are missed in the TIC S reporting: In 2011, average *daily* trading volume in Treasury bonds was on the order of \$500 billion or more than twice the amount of the gap for the *year* of 2011.<sup>18</sup> Alternatively, custodial bias could be a complicating factor: If U.S. residents purchase Treasury securities in the U.S. market but then entrust them to foreign custodians, the TIC S would (correctly) not record the purchases but the survey could count the securities as held by foreigners.

Foreign official purchases of Treasury securities were subject to a larger but more typical revision: As shown in panel B of figure 7, the Survey-S estimate for mid-2010 to mid-2011 indicated an increase in foreign official holdings of about \$200 billion, but the survey revealed a change of about \$500 billion. Foreign official purchases are typically subject to such revisions, as shown by the positive medium green bars, because foreign official entities often execute their transactions through foreign private intermediaries. In this case, the gap between the Survey-S estimates and the survey data suggest that foreign official acquisitions of Treasury securities over this period were likely quite a bit larger than reported on the TIC S, which by design attributes such transactions to the foreign private parties that conduct the transactions. Thus, it is important to note that gaps may arise from reporting errors but can also result from the reporting structure.

## The TIC SLT: Building on the TIC S and the Survey

### Background

Analysis of the financial crisis that began in late 2007 highlighted the importance of collecting timely information on cross-border securities positions: As noted above, as the crisis unfolded, accurate and timely position information was not available, and the survey data released in 2009 indicated some different trends than the earlier TIC S had provided. The differences between the TIC S estimates and the survey data received later were due to the measurement and estimation problems mentioned above: Transactions bias likely resulted in underreporting of purchases of EME securities, especially those issued in international markets, while redemptions of the same bonds would have been correctly attributed to the issuing country. In addition, transactions that resulted in changes in U.S. residents' holdings of foreign securities appear to have been conducted by financial intermediaries that were not part of the reporting panel of the TIC S.

Additional securities reporting to address the shortcomings of the TIC survey and TIC S had been under consideration prior to the crisis, but the crisis accelerated the development and introduction of the TIC SLT “Aggregate Holdings of Long-Term Securities by U.S. and Foreign Residents,” which addresses many, though by no means all, of these shortcomings. Relative to the survey, the SLT will provide much more timely and frequent reporting; relative to the TIC S, the TIC SLT will provide market-value reports of actual holdings rather than flows. During the process of developing and introducing the SLT, considerable efforts were made to ensure that all reporters meeting the reporting threshold, especially hedge funds, private equity firms, and other types of managed funds, understand how to report correctly.

Despite these improvements, the SLT will still not be perfect, and custodial bias in particular will remain a challenge. In addition, the older elements of the TIC reporting system—the TIC S and the annual surveys—will remain important as complements to the TIC SLT. The TIC S will remain the timeliest indicator available of cross-border securities flows—ac-

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<sup>18</sup> See Securities Industry and Financial Markets Association, [www.sifma.org/research/statistics.aspx](http://www.sifma.org/research/statistics.aspx).

tual cross-border securities acquisitions or sales—and will, along with the SLT, allow us to decompose position movements into recorded transactions, valuation changes, and “gaps” that reflect unrecorded transactions or errors in valuation estimates.<sup>19</sup> It also remains to be seen how closely the SLT data will anticipate the corresponding survey data. In principle, the SLT and survey data for the same dates should be nearly identical, but experience to date suggests that reporting differences can and do emerge. As a result, the detailed information provided by the survey will remain valuable as a complement to the SLT.

The recent financial crisis offers at least three examples of the added usefulness of survey data, even though it arrives with such a long lag. First, the survey provides the most detailed information available about the distribution of investment flows between valuation changes, or “passive” changes, and purchases or sales, or “active” changes. Over the course of 2008, the survey confirmed that U.S. investors’ holdings of foreign equity declined \$2.5 trillion, or nearly 50 percent. In isolation, this figure might indicate that U.S. investors were abandoning foreign equities. However, analysis of price changes and position changes at the security level revealed that the change was nearly all due to declines in valuation: After adjusting for price changes, U.S. net sales of foreign equity amounted to only about \$10 billion, or less than 1 percent of the overall change. Second, the security-level reporting on the survey also can illuminate trends in cross-border portfolio composition that are difficult to identify otherwise. For example, the survey data allow analysis of exposures, by country and sector, to securities whose values are changing rapidly, such as ABS.<sup>20</sup> Finally, the survey will allow for confirmation that positions reported in aggregate on the SLT are calculated correctly. For example, it can sometimes be difficult for reporters to distinguish between securities issued in the U.S. market by foreign entities (considered to be foreign securities by the TIC system) and similar securities issued by the U.S. branches or subsidiaries of such foreign entities (considered to be U.S. securities by the TIC system). By examining the detailed security-level data reported in the annual surveys, proper guidance can be provided to reporters regarding classifications of such securities holdings.

Taken together, the combination of the more-frequent positions data from the SLT, the monthly transactions data, and the annual surveys should together result in a more complete and accurate system for recording cross-border flows and positions. Although the exercise of reconciling changes in cross-border holdings of securities between recorded transactions, valuation changes, and sources of “gaps” has long been conducted for the annual surveys, with resulting improvements in valuation estimates and clarification of reporting responsibilities to collect missed TIC S transactions, the more timely SLT holdings data will allow for this type of analysis to be conducted more frequently.

### Data Collected on the SLT

The SLT requires monthly reporting on own and custodial cross-border positions in long-term securities at market value by country of holder for U.S. liabilities to foreigners and by country of issuer for U.S. claims on foreigners.<sup>21</sup> In addition, for liabilities, holdings must be divided into official and private holdings. Finally, for total positions across all countries, reporters must provide information on several memo items, including ABS positions, fund-

<sup>19</sup> Beginning with the December 2011 report, the TIC SLT collects data monthly just as the TIC S does. However, the filing deadline for the TIC SLT is a bit later and, at least in the short run, the more intensive data review process required for a new form will result in later release of the TIC SLT data than the TIC S data.

<sup>20</sup> See Beltran, Pounder, and Thomas (2008).

<sup>21</sup> Position information for short-term securities is already collected on the TIC B forms. See appendix A and [www.treasury.gov/resource-center/data-chart-center/tic/Pages/forms-b.aspx](http://www.treasury.gov/resource-center/data-chart-center/tic/Pages/forms-b.aspx).

share positions, and the sector of the holder (for liabilities) or issuer (for claims).<sup>22</sup> The SLT form has two parts, A and B, for reporting of custodial and issuer or end-investor holdings, respectively. Although the structure of the SLT form parallels the TIC S in many respects, the differences reflect efforts to bring TIC reporting in line with recent initiatives to improve and harmonize data on this topic as described in **box 1**, “The TIC SLT and New Data Initiatives.” In particular, the categories for the sectoral breakdowns were selected to meet the standards established in the sixth edition of the *Balance of Payments and International Investment Position Manual*, 6th edition (BPM6), and the separation of holdings into own and custodial holdings parallels reporting on the annual TIC surveys.

The SLT will provide considerably timelier position data, though initially not quite as timely as the estimates now available by cumulating adjusted TIC S data. The first two SLT report dates were September 30 and December 31, 2011; beginning with January 31, 2012, report dates will be monthly for the last business day of the month, with reports due to Federal Reserve Banks by the 23rd calendar day of the following month. As with any new report form, the lag for data releases will initially be somewhat longer as more extensive validation checks are conducted and reporting consistency is reviewed. Therefore, the current release includes full security type and country data from the two initial filings of the TIC SLT, for September and December 2011. As reporters become more accustomed to the form’s requirements and procedures, we anticipate that the review and validation process will be quicker and data release will occur more promptly. In the longer run, publication is anticipated with an additional one-month to two-month lag, or a total of two to three months after the report date. We expect that SLT data will be available for use in quarterly international investment position calculations with a lag of less than one quarter, as specified in BPM6, by the end of 2012.

In addition to the new items collected on the TIC SLT, two factors have resulted in a significant expansion of the SLT reporting panel relative to the TIC annual survey panel. First, the reporting threshold is a bit different, and is generally lower. Second, significant outreach efforts were made in order to inform managers of hedge funds, private equity funds, and other types of managed funds of potential reporting responsibilities. As part of these efforts, instructions and other materials to clarify the reporting responsibilities of such entities were developed.<sup>23</sup> These factors resulted in an increase in the number of reporters from about 100 on each of the annual survey panels to over 300 on the SLT.

## A First Look at the SLT Data

### New Reporting

As noted above, substantial efforts were made to ensure that all eligible reporters were familiar with the TIC SLT form and its instructions, and the reporting panel expanded by over 200 reporters, or more than double the number of recent survey reporters. The first few reporting dates indicate that these efforts resulted in increased reporting on the order of 2½ percent—about \$300 billion—for liabilities, and 6 percent—or about \$400 billion—for claims. **Table 1** presents SLT totals for two sets of reporters: all reporters, and only those who reported on the SLT but not on the annual surveys. As shown in the upper panel, these new reporters’ positions were concentrated in equities and, to a lesser extent, in corporate

<sup>22</sup> Forms and instructions are available at [www.treasury.gov/resource-center/data-chart-center/tic/Pages/forms-slt.aspx](http://www.treasury.gov/resource-center/data-chart-center/tic/Pages/forms-slt.aspx).

<sup>23</sup> These materials, which include FAQs and flowcharts, are available at [www.treasury.gov/resource-center/data-chart-center/tic/Documents/slt\\_faqs.pdf](http://www.treasury.gov/resource-center/data-chart-center/tic/Documents/slt_faqs.pdf) and [www.treasury.gov/resource-center/data-chart-center/tic/Documents/slt\\_flowcharts.pdf](http://www.treasury.gov/resource-center/data-chart-center/tic/Documents/slt_flowcharts.pdf).

## Box 1. The TIC SLT and New Data Initiatives

Although researchers have long been aware of the informational gaps in the monthly TIC S and the disparities between the TIC S estimates and annual survey data, concerns about reporting burden and costs to data compilers were sufficient to prevent the introduction of a new, improved TIC report. Instead, efforts were largely devoted to incremental enhancements to the existing data collection system. For example, reporters were required to identify transactions in asset-backed securities (ABS) on the TIC S, estimates of repayment flows on foreign holdings of ABS were made available to data users, and additional tabulations of the survey data were added to the annual survey reports.

However, the financial crisis of 2008 altered the balance of priorities between concerns over reporting burden and the need for more complete financial information, and highlighted the importance of moving the TIC forms into closer compliance with the Group of Twenty (G-20) data initiatives, especially those stressing the collection of more complete global financial data. In particular, the crisis revealed the value of a form such as the SLT. The crisis showed the importance of understanding, on a *timely* basis, how cross-border portfolio investors are responding to changes and how exposures are building in the global financial environment.

In November 2009, in the aftermath of the global financial crisis, the G-20 Data Gaps Initiatives were developed by the Financial Stability Board Secretariat and International Monetary Fund (IMF) staff.<sup>1</sup> These initiatives were endorsed by the G-20 Finance Ministers and Central Bank Governors and by the International Monetary and Financial Committee. The G-20 meetings that occurred as part of the Data Gaps Initiatives emphasized the importance of international collaboration and coordination to better assess current versus desired data collection, risks posed to institutions, especially global systemically important financial institutions, and how to optimally allocate resources to close existing data gaps. These key components are reflected in the 20 recommendations that were generated by the meetings. The recommendations balanced the desire to close gaps in financial data reporting against various constraints to data collection, including reporting burden, confidentiality concerns, and legal constraints.

In general, the recommendations focused on obtaining more-specific data in several dimensions. In particular, it was argued that data reported on a residence basis, disaggregated by country, sector, instrument, maturity, and currency denomination should facilitate the identification of interest rate and exchange rate risks, maturity mismatches or funding gaps, and the potential for spillovers.

In order to move the TIC reporting system into closer compliance with the G-20 data initiatives, the new form SLT was introduced in September 2011.

### SLT's Link to Recommendations

The new SLT form addresses 3 of the 20 recommendations of the G-20 finance ministers and central bank governors in the May 2010 report *The Financial Crisis and Information Gaps* that pertain to cross-border securities positions.

First, central banks and statistical offices are to participate in the Bank for International Settlements (BIS) data collection on securities.<sup>2</sup> This recommendation is quite general. As noted elsewhere, the SLT will provide more timely, frequent, and reliable estimates of securities holdings, and thus will contribute to more-complete global cross-border data sets. Because the SLT collects holdings of securities at market value, the SLT in combination with the monthly transactions data will also provide a better approximation of valuation changes.

Second, countries are to work toward reporting their international investment positions (IIPs) quarterly and, to the extent possible, reporting their IIPs in accordance with the standards established in the *Balance of Payments and International Investment Position Manual*, 6th edition (BPM6).<sup>3</sup> The United States is already in partial compliance with the IIP "pipeline project," which aims to increase the number of countries reporting annual and

*continued on next page*

**Box 1.—continued**

quarterly IIP data to the IMF. The SLT will move the United States into full compliance with the BPM6 reporting timeline of quarterly reporting with a maximum lag of one quarter. BPM6 also emphasizes sector of issuer (for U.S. portfolio liabilities) and sector of holder (for U.S. portfolio assets). The “of which” memo lines on the SLT will move the United States into closer compliance with the BPM6 sector requirements.

Third, the report more generally recommended improved sectoral breakdowns in order to narrow financial data gaps.<sup>4</sup> The key recommendation from the early reports emphasizes the importance of improving data on international financial network connections and monitoring the vulnerability of domestic economies to shocks. In addition to satisfying BPM6 sector requirements, the “of which” items from the SLT allows for analysis of exposures to, for example, financial or nonfinancial or municipal issuers, and the more timely measures of cross-border securities holdings will strengthen coverage of the “rest of the world” sector of the U.S. national balance sheet and flow of funds data.

<sup>1</sup> See IMF and Financial Stability Board Secretariat (2009, 2010) and IMF (2011).

<sup>2</sup> This recommendation is number 7 in the report.

<sup>3</sup> This recommendation is number 12 in the report.

<sup>4</sup> This recommendation is number 15 in the report.

bonds; holdings of agency and Treasury securities were little affected by the increased outreach and clarification of reporting responsibilities. Likewise, the new reporting is geographically concentrated: Of the \$293 billion in new reporting on foreign holdings of U.S. securities, about \$225 billion, or nearly 75 percent, is in Europe and the Caribbean, which

**Table 1. TIC SLT reporting by reporter group, security type, and residence of owner or issuer**

Billions of dollars except as noted, December 2011

	Total reporting	Reporting by new SLT reporters	Reporting by new reporters as share of total reporting
<b>Total liabilities</b>	<b>11,910</b>	<b>293</b>	<b>2.5%</b>
Treasury securities: Official	3,257	0	0.0%
Treasury securities: Private	1,091	6	0.6%
Agency securities: Official	615	0	0.0%
Agency securities: Private	436	2	0.5%
Corporate bonds: Official	98	0	0.0%
Corporate bonds: Private	2,562	30	1.2%
Corporate stocks: Official	594	31	5.2%
Corporate stocks: Private	3,258	223	6.8%
<b>Total claims</b>	<b>6,575</b>	<b>390</b>	<b>5.9%</b>
Government bonds	363	8	2.2%
Corporate bonds	1,732	70	4.0%
Corporate stocks	4,480	312	7.0%
<b>By residence of owner or issuer</b>			
<b>Total liabilities</b>	<b>11,910</b>	<b>293</b>	<b>2.5%</b>
Europe	4,339	99	2.3%
Canada	547	21	3.8%
Latin America	451	4	0.9%
Caribbean	1,448	125	8.6%
Asia	4,729	29	0.6%
All other	396	14	3.5%
<b>Total claims</b>	<b>6,575</b>	<b>390</b>	<b>5.9%</b>
Europe	2,876	89	3.1%
Canada	693	37	5.3%
Latin America	394	5	1.3%
Caribbean	1,032	227	22.0%
Asia	1,153	16	1.4%
All other	428	16	3.7%

together account for slightly less than half of total holdings. Of the nearly \$400 billion in new reporting on U.S. positions abroad, about \$225 billion—over half—comes from new reporters' Caribbean positions, which account for about 15 percent of such positions overall.

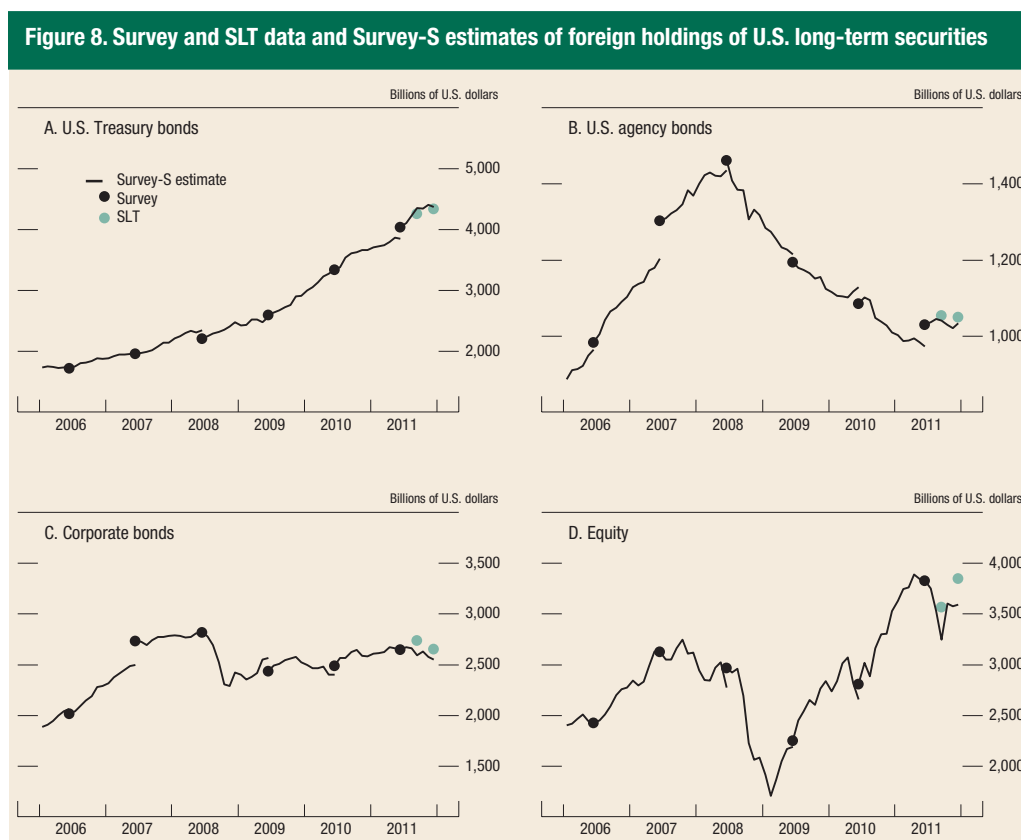
## Aggregate Data in Comparison with Recent Survey Data

### Holdings of U.S. Securities by Foreign Investors

The September and December 2011 SLT data, in terms of level, or position, are broadly in line with the most recent available survey data, from June 2011 for liabilities and from December 2010 for claims.

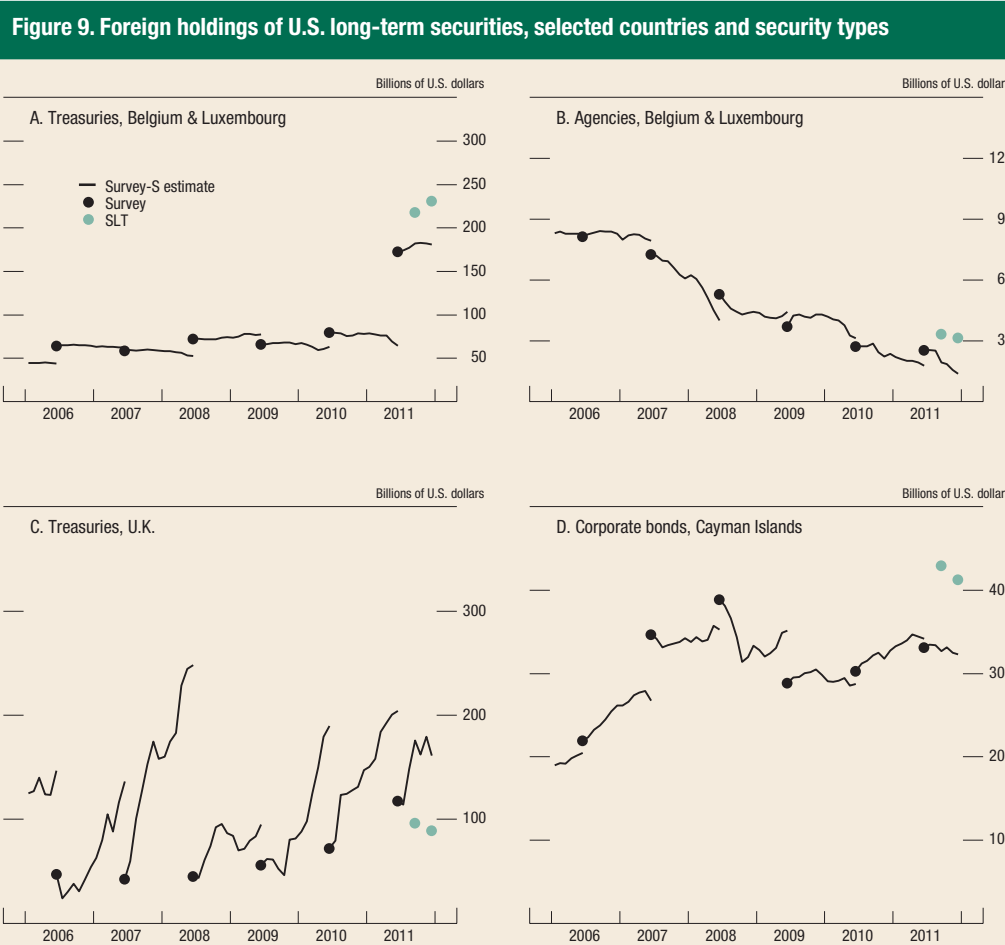
**Figure 8** displays survey data and Survey-S estimates of U.S. liabilities for foreign residents through September 2011 and SLT data for September and December 2011. The lines indicate Survey-S estimates for total foreign holdings. The black and green circles indicate survey and SLT readings, respectively.<sup>24</sup> Thus, the vertical distance between the green circles and the black lines indicates the differences between SLT data and our Survey-S estimates based on the June 2011 liabilities survey.

For Treasury bonds, the SLT data indicate holdings that are a bit below the Survey-S estimates, but, like the estimates, indicate that foreign holders continue to increase their holdings. For U.S. government agency bonds, the SLT data are a bit above the Survey-S esti-



<sup>24</sup> As in the earlier figures, the position estimates are calculated as the valuation-adjusted level from the previous period plus TIC S transactions adjusted for ABS repayments and stock swaps.





mates, suggesting that foreign positions in U.S. agencies might be recovering a bit more quickly than the earlier estimates indicate. For corporate bonds and equity, the SLT shows slightly higher positions than the Survey-S estimates; in large part, these higher positions are due to new reporting, as shown in table 1. In addition, unlike the Survey-S estimates, the SLT data do not include an adjustment for overreporting of securities, which can occur if an issuer reports securities issued directly into foreign markets as fully foreign held, while U.S. custodians simultaneously report foreign holdings of those securities.<sup>25</sup> As a result, the SLT data for existing reporters will typically exceed amounts reported in the liabilities surveys. Even with this expanded reporting coverage, though, the SLT data show that foreign holdings of U.S. corporate debt remain well below their pre-crisis levels.

For specific countries, however, the SLT data show some unexpected developments (**figure 9**). For example, Treasury bonds held in Belgium and Luxembourg on the SLT are considerably higher than the Survey-S estimates would indicate (panel A). This pattern has appeared in previous years and is likely due to transactions bias, where the purchases are recorded through other financial centers such as the United Kingdom. Agency debt holdings also appear to be moving up, contrary to earlier patterns (panel B). However, the concentration of these holdings—especially of Treasury securities—in such known custodial centers also serves as a reminder that, for U.S. securities, the SLT data are subject to the

<sup>25</sup> This adjustment can only be made at the security level with the annual surveys (the SLT is collected at the aggregate level). In recent years, this adjustment has been around \$70 billion.

same custodial bias as the annual liabilities survey, and that these increased holdings in Belgium and Luxembourg are not necessarily on behalf of residents of those countries. Thus, these movements might point to changes in custodial or transactions behavior by investors outside Belgium and Luxembourg.

SLT data on Treasury holdings by the United Kingdom are considerably lower than the Survey-S estimates; such a discrepancy is to be expected given transactions bias (panel C). The SLT data indicate lower U.K. holdings in late 2011 than was indicated by the June 2011 survey; this movement could likewise indicate changes in custodial patterns.

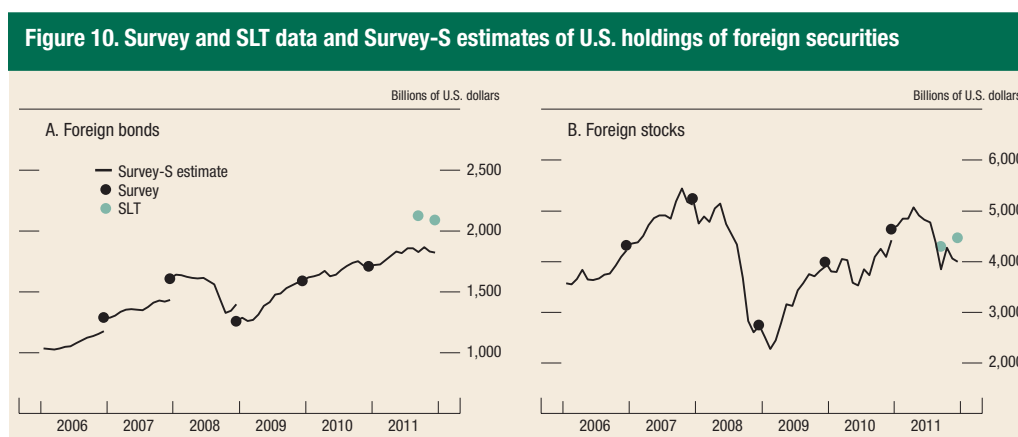
Finally, U.S. corporate bond holdings by residents of the Cayman Islands as reported on the SLT are well above S-based estimates (panel D). Although the expanded reporting panel overall accounts for much of the higher foreign holdings of U.S. corporate bonds, in this instance, it is contributing relatively little—less than \$10 billion. More thorough reporting by existing reporters contributes another significant piece—as much as \$30 billion—of the approximately \$80 billion increase. A more complete explanation for this difference will likely only be possible through comparison with the data from the next annual survey for June 2012.

### Holdings of Foreign Securities by U.S. Investors

In contrast to the TIC SLT data on U.S. liabilities to foreign residents, which are broadly in line with Survey-S estimates, the TIC SLT data for U.S. holdings of foreign bonds and equity in September and December were significantly higher than Survey-S estimates.

The December SLT data for U.S. holdings of foreign bonds ([figure 10](#), panel A) point to a fairly sharp run-up over 2011, about \$300 billion above the Survey-S estimates—the vertical distance between the green dot and the black line and about \$400 billion up from the end of 2010—the vertical distance between the last black dot and the latter green dot.

These increases are only partially explained by the new reporters on the TIC SLT. As noted in table 1, new SLT reporters accounted for only about \$80 billion of U.S. holdings of foreign bonds in December; about \$10 billion in additional reporting came from entities that had been reporting on the liabilities survey but not on the claims survey. Aside from the new reporting, the remaining difference of about \$200 billion is likely due to some combination of missing transactions on the TIC S, incorrectly estimated valuation changes, and, possibly, incorrect reporting or valuation on the SLT. We will be looking for further clarification from the December 2011 survey data.



U.S. holdings of foreign equity (figure 10, panel B) were about \$4.7 trillion at the end of 2010. Using the Survey-S estimation approach discussed above, these holdings dropped about \$700 billion, to around \$4 trillion, by the end of 2011. Of the estimated \$700 billion decline, cumulative valuation losses totaled about \$725 billion, which was partially offset by roughly \$25 billion in purchases, as recorded by the TIC S. The December 2011 SLT measurement of about \$4.5 trillion is considerably higher, largely due to expanded reporting. As noted in table 1, new SLT reporters accounted for a total of about \$300 billion in newly reported holdings of foreign equity. Of this \$300 billion, nearly \$200 billion was in the Cayman Islands, reflecting the efforts to incorporate reporting from hedge funds, private equity funds, and other managed funds. In addition to the increase in reporting from new reporters, as with bonds, the SLT collected data from reporters who had been reporting on the liabilities survey but not the claims survey: this group of reporters accounted for a total of about \$130 billion in U.S. holdings of foreign equity on the December 2011 SLT.

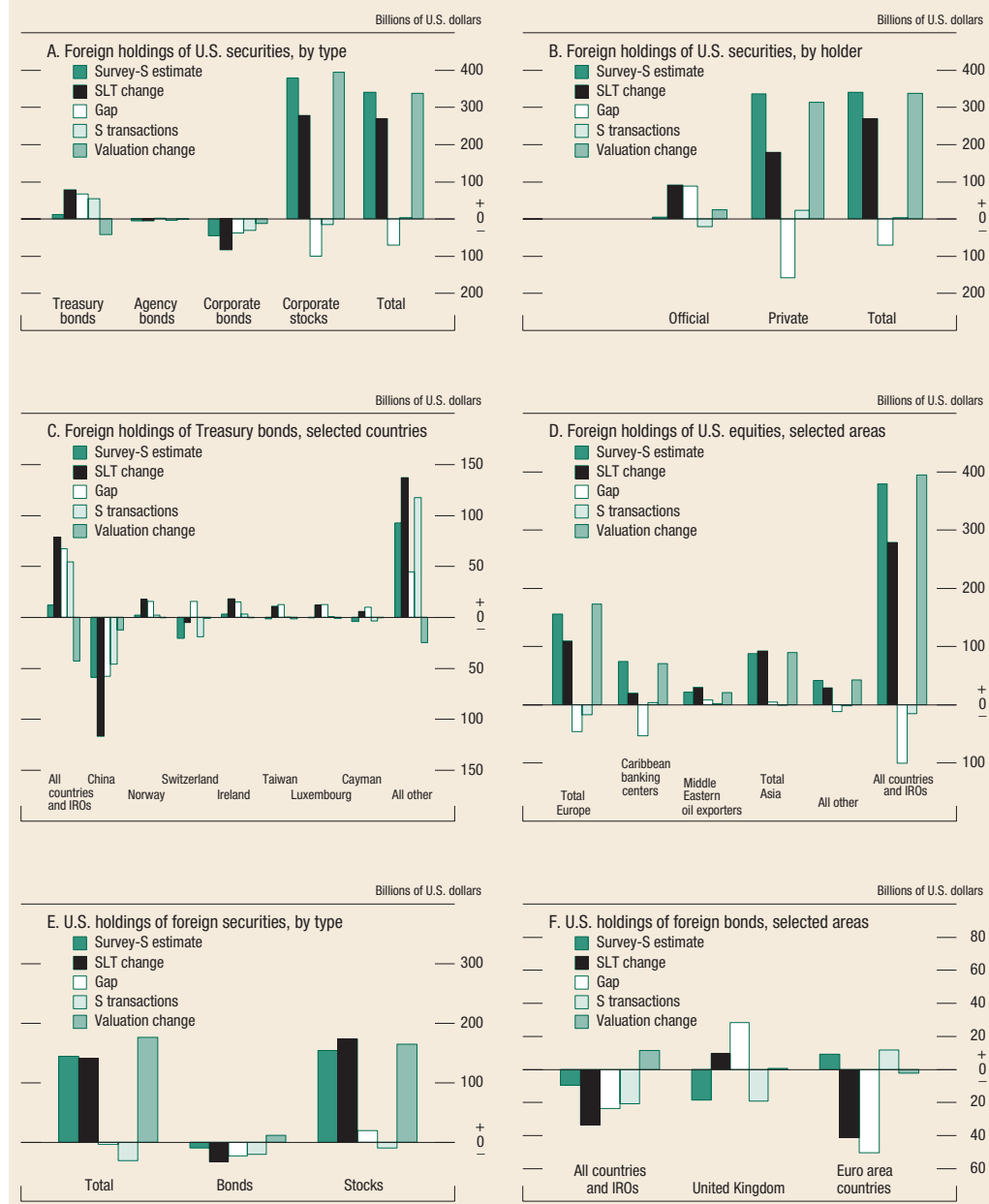
Assuming that the SLT data turn out to be consistent with the December 2011 claims survey data, this first look at the SLT suggests that U.S. residents' holdings of foreign bonds have increased more rapidly than previous estimates suggest. As did the annual survey, the SLT confirmed that U.S. investors' holdings of foreign bonds are concentrated in corporate debt securities. Holdings of government bonds account for roughly 20 percent of foreign bond holdings; this proportion is about the same as in the survey. Thus, the SLT data indicate that foreign bond holdings—most likely holdings of foreign corporate bonds—now exceed their 2007 peak by a substantial margin, perhaps suggesting that U.S. investors are increasingly interested in overseas investments. The SLT data also suggest that U.S. residents' holdings of foreign equity, while well below earlier peaks, seem to have declined less than earlier estimates indicated.

#### **Fourth-Quarter Changes in Positions: SLT and Survey-S Estimates**

As discussed above, the SLT data for September and December generally indicate higher cross-border positions than the Survey-S estimates would suggest. With the release of the September and December 2011 SLT data, it is possible to examine fourth-quarter changes in holdings from the SLT data with changes from the Survey-S estimates. (In previous years, such comparisons were only possible with the release of survey data nearly a year after the reporting date.) The differences between the SLT movements and those implied by the Survey-S estimates result from several factors: custodial and transactions bias, the effects of applying price index values to all holdings of U.S. securities by foreigners in construction of the Survey-S estimates, possible misreporting of the market value of securities on the TIC SLT, and gaps that arise from cross-border acquisitions or sales of securities that are not reported on the TIC S. These transactions may not be reported because they are conducted through intermediaries that fall outside of the TIC reporting system or because of missed reporting.

As seen in [figure 11](#), large portions of the estimated movements, especially for equity, come from estimated valuation changes, the medium green bars. Precisely estimating valuation changes can be challenging. In the Survey-S estimates, we assume that valuation changes can be approximated by standard indexes of equity prices such as the MSCI. However, with much of the new reporting coming from a variety of managed funds, it is difficult to know how well valuation gains or losses on these funds can be approximated by standard broad equity indexes. For example, cross-border holdings of all types of funds—including funds that invest in foreign bonds, U.S. Treasury securities, or commodities, as well as money market funds—are classified as “equity” in the surveys and the SLT. Thus, the securities portfolios of these diverse types of funds might have price movements that differ from those of standard indexes. In the coming year, the incoming December 2011 claims survey and the June 2012 liabilities survey data should allow us to better assess the actual returns

**Figure 11. SLT measurements and Survey-S estimates of changes in cross-border long-term securities holdings**



earned on cross-border investments over this period as well as to assess the potential magnitude of missed transactions.<sup>26</sup>

Although there are only two observations to compare, the SLT is already signaling movements in some asset categories that suggest different trends in cross-border portfolios than the Survey-S estimates. Overall, as shown in the rightmost set of bars in figure 11, panel A,

<sup>26</sup> Initial indications are that reporting errors are minor. The data screening and evaluation process for the new SLT data included analysis of each reporter's filings at the country and SLT item level compared to the analogous data from the most recent survey. These data reviews indicated that valuations as reported on the SLT were generally consistent with reporters' survey filings, which in turn generally provided accurate valuations.

the SLT shows an increase in foreign residents' holdings of U.S. securities of nearly \$300 billion, the rightmost black bar, in the fourth quarter of 2011, a smaller increase than the nearly \$350 billion increase indicated by the change in the Survey-S estimates, the rightmost dark green bar. The difference between these two measures—the estimation gap (shown in white)—however, is not evenly distributed across security types, as indicated by the other sets of bars. The TIC SLT indicated that foreign holdings of Treasury securities increased nearly \$80 billion between September and December, the leftmost black bar. This increase is substantially larger than suggested by the Survey-S estimates: TIC S transactions, the leftmost pale green bar, indicated that foreign investors purchased on net roughly \$50 billion in Treasury securities over the quarter. But because Treasury prices declined roughly 1 percent over the period, valuation changes, the leftmost medium green bar, are estimated to have reduced the market value of foreign holdings about \$40 billion, generating a combined Survey-S increase of only about \$10 billion, the leftmost dark green bar. With the SLT indicating that foreign holdings of U.S. Treasury securities rose about \$80 billion, this difference suggests that foreign net purchases could have been larger than recorded in the TIC S.

The SLT shows small declines in foreign holdings of U.S. agency bonds and corporate debt securities, broadly consistent with the Survey-S estimates. In contrast, the SLT indicated that foreign investors' holdings of U.S. equity increased about \$280 billion, the fourth black bar, considerably less than the Survey-S estimate of \$380 billion, the fourth dark green bar; we discuss these differences in more detail in the following section.

The SLT also indicated a different breakdown of such changes by type of holder (figure 11, panel B): Foreign official positions increased more than earlier estimates indicated while private positions increased by less; as discussed above, these differences are likely due to transactions bias that does not classify purchases of U.S. securities as foreign official purchases if they occur through third-party countries.

The SLT data also show some surprising changes by country for foreign holdings of Treasury securities (panel C). The SLT showed that holdings attributed to China declined by more in the fourth quarter of 2011—about \$120 billion—than suggested by the Survey-S estimates—about \$60 billion. The larger-than-estimated decline in holdings could indicate that Chinese official investors sold more Treasury securities than recorded, or that they have shifted some of their Treasury holdings and transactions to custodians and financial intermediaries abroad. Such shifts are not recorded as sales because the ownership of the security is unchanged—only the location of ownership is changed.<sup>27</sup> In contrast, Treasury holdings for several countries, including Norway, Switzerland, Ireland, Taiwan, Luxembourg, and the Cayman Islands increased considerably more than the estimates indicated.

### Foreign Holdings of U.S. Equity

As displayed in panel D of figure 11, the fourth-quarter change in foreign holdings of U.S. equity as measured by the SLT was about \$100 billion less than the change implied by the Survey-S estimate, showing that foreign investors' holdings of U.S. equity increased about \$280 billion rather than \$380 billion. This category of securities is heavily affected by measures of valuation changes. Indeed, nearly all of the Survey-S estimated changes are due to valuation changes, as shown by the medium green bars. The differences between the SLT and estimated Survey-S changes were dominated by gaps in Europe and the Caribbean,

<sup>27</sup> See FAQ A.5, "How are TIC data used by BEA and the Federal Reserve? Where else are TIC data reported or used?" on the Treasury's webpage, "Frequently Asked Questions Regarding the TIC System and TIC Data," [www.treasury.gov/resource-center/data-chart-center/tic/Pages/ticfaq1.aspx](http://www.treasury.gov/resource-center/data-chart-center/tic/Pages/ticfaq1.aspx) at the TIC website, [www.treasury.gov/resource-center/faqs/Treasury-International-Capital/Pages/tic-faqs.aspx](http://www.treasury.gov/resource-center/faqs/Treasury-International-Capital/Pages/tic-faqs.aspx).

regions known to be subject to substantial transactions bias. In addition, these regions are centers of incorporation for many foreign investment funds, and as discussed above, returns earned on fund holdings may not be well approximated by the standard equity price indexes applied in the estimated Survey-S changes. Overall, the SLT indicates lower foreign holdings of U.S. equity in Europe and the Caribbean, but larger-than-estimated holdings by investors in the Middle East and in Asia.

### **SLT Data on Changes in U.S. Holdings of Foreign Securities**

The SLT indicates slightly smaller increases in total U.S. holdings of foreign securities in the final quarter of 2011 than indicated by the Survey-S estimates (panel E)—about \$170 billion rather than about \$150 billion.<sup>28</sup> The Survey-S estimates for equity were reasonably close to those for the SLT, but the estimates for bonds were quite different. The SLT indicates that U.S. holdings of foreign bonds declined by about \$30 billion (the first black bar)—compared with the \$10 billion decrease suggested by the Survey-S estimates (the first dark green bar). Within Europe, though, there are large and offsetting gaps (panel F): The SLT indicates an increase in U.S. residents' holdings of U.K. bonds (the second black bar) whereas the Survey-S estimate points to a decrease (the second dark green bar). In contrast, for euro area countries, which suffered from severe financial strains during the latter half of 2011, the SLT indicates a decline in U.S. bond holdings of over \$40 billion (the third black bar), a sharp contrast to the Survey-S's increase of about \$10 billion (the third dark green bar). These differences likely reflect the transactions bias in the Survey-S estimates, with sales of euro area bonds that occurred through U.K. intermediaries recorded as "U.K. sales" and misinterpreted as decreases in holdings of U.K. bonds. In this case, the SLT provides much different information than would have been available otherwise about an area of ongoing concern.

### **Memo Items**

As noted in box 1, the SLT incorporates reporting for memo items indicating the type of issuer of U.S. corporate securities, the type of U.S. holder of foreign securities, and two categories of securities: ABS and fund shares. These groupings were selected to conform to BPM6 guidelines. Feedback from respondents indicated that categorizing this information was a challenge, but nonetheless reporting in the first few months of the SLT was fairly complete and broadly consistent with analogous survey data. Respondents were able to categorize roughly 95 percent of both claims and corporate liabilities.

### **U.S. Issuers of Long-Term Securities Held by Foreign Residents**

SLT reporting on the breakdown of cross-border holdings of U.S. long-term securities by issuer for December 2011 indicate that the largest share—about 60 percent—of U.S. long-term corporate debt and equity held by foreign investors was issued by nonfinancial firms, with the next substantial portion—just under 30 percent—issued by financial firms other than depository institutions, such as mutual funds, investment banks, issuers of corporate ABS, and insurance companies. Of the remaining 10 percent, about 8 percent was issued by depository institutions and the residual was issued by state and local governments. These shares are roughly in line with the industry classifications derived from the 2010 and 2011 liabilities surveys.<sup>29</sup>

<sup>28</sup> Although the SLT collects data on U.S. holdings of foreign bonds separately for government and corporate bonds, the TIC S collects data only for bonds, and so comparisons to Survey-S estimates must be calculated at the higher level of aggregation.

<sup>29</sup> See table 18 in U.S. Department of the Treasury, Federal Reserve Bank of New York, and Board of Governors of the Federal Reserve System (2011).

**Table 2. Comparison of Survey and SLT data on cross-border holdings of asset-backed securities**  
Billions of dollars except as noted

	U.S. government agency securities <sup>1</sup>		U.S. corporate bonds <sup>1</sup>		Foreign corporate bonds <sup>2</sup>	
	Total	Share	Total	Share	Total	Share
SLT	730	70%	487	18%	266	16%
Survey	712	69%	428	16%	193	11%

<sup>1</sup> Survey data from June 2011 liabilities survey.  
<sup>2</sup> Survey data from December 2010 claims survey.

## U.S. Holders of Foreign Long-Term Securities

The SLT also collects data on U.S. holders of foreign securities. Reporting coverage was reasonably good for these items as well. This breakdown shows that, for debt as well as equity, U.S. holders were largely financial firms other than depository institutions, such as investment banks, securities broker-dealers, managed funds, and insurance companies. Although the TIC claims survey collects some broad categories on type of owner for foreign securities, there is currently only limited overlap in these categories and those collected on the SLT, and it is therefore difficult to make comparisons between the SLT and survey data.

## Fund Shares and ABS

SLT and survey data on foreign holdings of U.S. ABS and equity fund shares are broadly comparable (**table 2**). Both data sources indicate that foreign holdings of U.S. government agency securities were dominated by ABS (nearly all mortgage-backed securities), which accounted for about 70 percent of all cross-border holdings of agency debt securities. Both data sources report a considerably lower ABS share for foreign holdings of U.S. corporate bonds, around 15 to 20 percent.

However, on the claims side, U.S. holdings of foreign securities, the survey and SLT figures for cross-border holdings of ABS differ by a substantial margin. The survey figure for U.S. holdings of foreign corporate ABS as a share of all such holdings is 11 percent while the corresponding SLT figure is 16 percent. While this difference could indicate that U.S. acquisitions of foreign ABS picked up markedly since December 2010, it seems likely that at least part of this difference might be due to changes or differences in valuation methods adopted by reporters in the SLT compared with those in the claims survey data; as noted in Bertaut and Pounder (2009), valuation is especially challenging for ABS. For such differences, the detailed survey data will be critical. We expect that comparison of the December 2011 SLT and claims survey data will reveal whether this difference reflects movements in ABS holdings or difficulties with ABS valuation.

SLT and survey data for U.S. holdings of foreign equity fund shares are likewise fairly comparable (**table 3**) though comparisons are somewhat more challenging in this category because reporting requirements are slightly different for the survey and the SLT. Both sources indicate that common stock (as reported on the survey) or all equity less fund shares (as reported on the SLT) account for about 80 percent of cross-border holdings of domestic equity and about 90 percent of such holdings of foreign equity.

**Table 3. Comparison of Survey and SLT data on cross-border holdings of equity fund shares and common stock**

Billions of dollars except as noted

	Domestic equity: Common stock		Foreign equity: Common stock	
	Total	Share	Total	Share
SLT	3,056	80%	3,965	89%
Survey	3,070	79%	4,327	93%

Note: SLT common stock totals estimated as total equity less fund shares.

## Conclusion

The new TIC SLT is designed to provide readings on cross-border positions in long-term securities that are much timelier than the existing annual surveys and more accurate than estimates based on the TIC S transactions. Movements in ownership of these securities are an important barometer of cross-border investor sentiment; in times of financial strain and crisis, more timely and accurate measurements of cross-border financial movements can indicate where strains might be more or less acute, and can point to near-term and longer-term prospects for asset prices and for the financing of current account imbalances.

The SLT data are subject to the same custodial bias present in the liabilities surveys, which means that the SLT also cannot fully attribute foreign holdings of U.S. securities by country of ultimate investor. Moreover, despite ongoing efforts to reconcile holdings reported on the SLT with data reported on the annual surveys and through the TIC S, some degree of reporting error likely remains. We anticipate that fuller analysis and comparisons with annual survey data from months when the SLT was also being compiled (December 2011 for claims and June 2012 for liabilities) will allow for more-expansive analysis of SLT data quality and trends.

The initial TIC SLT data for September and December 2011 are generally consistent with the more comprehensive measures of securities holdings collected in the annual surveys and with the intermediate estimates, which are based on subsequent transactions and adjustments for valuation changes in securities holdings, providing considerable comfort that this new data initiative will be able to provide reliable measures of U.S. cross-border securities positions on a timely basis. Nonetheless, the first two data collections for September and December 2011 reveal some important developments. First, the SLT data, partially due to expanded reporting, are showing somewhat higher foreign holdings of U.S. securities and U.S. holdings of foreign securities than expected, based on the most recent surveys and intermediate transactions-based estimates. For the final quarter of 2011, the first period for which a time-series comparison is possible, the SLT data point to smaller changes in holdings in both foreign holdings of U.S. securities and U.S. holdings of foreign securities than the Survey-S estimates. More specifically, contrary to earlier estimates based on TIC S and survey data which indicated that U.S. investors slightly increased their holdings of euro area bonds, the SLT indicates the reverse: U.S. investors reduced their holdings of these assets by about 10 percent during this difficult time for European financial markets. The SLT also points to stronger foreign demand for U.S. Treasury securities overall but a steeper decline in China's holdings of Treasury securities than had been estimated earlier. Going forward, the SLT will allow for much more timely and accurate tracking of these and other developments—up to a year earlier than had been possible—and, as circumstances warrant, correspondingly more timely policy responses.



## Appendix A: The TIC Reporting System

Under the current Treasury International Capital (TIC) reporting system, an assortment of monthly and quarterly reports are filed with district Federal Reserve Banks by commercial banks, securities dealers, other financial institutions, and nonbanking enterprises in the United States (**table A.1**). These data are centrally processed and maintained at the Federal Reserve Bank of New York, which, along with the district banks, acts as fiscal agent for the U.S. Treasury. Since late 1998, the Federal Reserve Board also has supported the TIC data collection system by providing final review and dissemination of TIC data to the Treasury as well as to other agencies, including the Bureau of Economic Analysis and the Bank for International Settlements. The TIC reports of individual respondents are treated as confidential and access to the respondent-level data is strictly limited to specific staff of the Treasury and the Federal Reserve System.

Data derived from Treasury reports are posted monthly on the TIC website, [www.ustreas.gov/tic](http://www.ustreas.gov/tic). TIC data aggregates are also published monthly at the Federal Reserve's website, [www.federalreserve.gov/econresdata/releases/secholdtrans/current.htm](http://www.federalreserve.gov/econresdata/releases/secholdtrans/current.htm), and are used in the U.S. international transactions and investment position compilations published by the Department of Commerce in the *Survey of Current Business*.

### Report Forms

**TIC BC (for U.S. claims)** collects data on U.S.-resident banks' claims on foreigners, including deposit accounts, loans, and foreign short-term securities held by U.S. residents as reported by banks, other depository institutions, and securities brokers and dealers in the United States. Bank holding companies (BHCs) and financial holding companies (FHCs) also report for their domestic nonbank and nonsecurities firm affiliates, other than their insurance affiliates, who report separately on the C-series forms. Data on respondents' own dollar claims are collected monthly on Form BC. Data on claims held for domestic customers as well as on claims denominated in foreign currencies is collected on a quarterly basis only on forms BQ-1 and BQ-2, respectively.

**TIC BL forms (for U.S. liabilities)** cover U.S.-resident banks' liabilities to foreigners, including deposits, U.S. short-term securities held by foreigners, and other liabilities as reported by banks, other depository institutions, and securities brokers and dealers in the United States. BHCs and FHCs also report for all domestic nonbank, nonsecurities firm affiliates, other than their insurance affiliates, who report separately on the C-series forms. Banks' own dollar-denominated liabilities are reported monthly on form BL-1, and customers' dollar-denominated liabilities are reported monthly on form BL-2. Liabilities denominated in foreign currencies are reported quarterly on form BQ-2.

**TIC CQ forms** collect quarterly data on the liabilities to, and claims on, unaffiliated foreigners of exporters, importers, industrial and commercial concerns, financial institutions (other than banks, other depository institutions, and securities brokers and dealers), and other nonbanking enterprises in the United States. Financial claims and liabilities, such as deposits and short-term securities, are reported on the CQ-1. Commercial claims and liabilities, such as trade receivables and payables, are reported on the CQ2. Data exclude claims on foreigners held in custody by banks in the United States.

**TIC D** collects quarterly data on holdings and net cash settlements of cross-border derivatives contracts reported by banks, securities brokers, dealers, and nonfinancial companies in the United States with sizable holdings of derivatives contracts. Total holdings are divided between those contracts with positive fair values and those contracts with negative fair values from the perspective of the reporter. The fair (market) value is generally defined

Table A.1. Summary of TIC reporting forms

TIC form	Position or flow	Item	Valuation method	Frequency	Reporter type	Magnitude** (Billions of U.S. dollars as of last reporting date in 2011)
<b>BC:</b> Report of U.S. Dollar Claims on Foreigners	Position	Deposit accounts, loans, short-term securities, and other claims	Face	Monthly	U.S.-resident entities	\$3,177
<b>BL-1:</b> Report of U.S. Dollar Liabilities to Foreign Residents	Position	Deposits, short-term securities, and other own liabilities	Face	Monthly	U.S.-resident entities	\$3,628
<b>BL-2:</b> Report of Customers' U.S. Dollar Liabilities to Foreigners	Position	Short-term securities and other custody liabilities	Face	Monthly	U.S.-resident entities	\$1,022
<b>BQ-1:</b> Report of Customers' U.S. Dollar Claims on Foreigners	Position	Deposit accounts, short-term securities, and other custody claims	Face	Quarterly	U.S.-resident entities	\$676
<b>BQ-2:</b> <b>Part 1</b> – Report of Foreign Currency Liabilities and Claims on Foreigners <b>Part 2</b> – Report of Customers' Foreign Currency Liabilities to Foreigners	Position	Deposits, short-term securities, and other liabilities in foreign currency	Face	Quarterly	U.S.-resident entities	\$655
<b>BQ-3:</b> Report of Maturities of Selected Liabilities to Foreigners	Position	Deposits, short-term securities, and other liabilities	Face	Quarterly	U.S.-resident entities	Not published <sup>†</sup>
<b>CQ-1:</b> Report of Financial Liabilities to, and Financial Claims on, Unaffiliated Foreign-Residents	Position	Deposits, short-term securities, and other liabilities and claims	Face	Quarterly	U.S.-resident entities	\$61
<b>CQ-2:</b> Report of Commercial Liabilities to, and Commercial Claims on, Unaffiliated Foreign-Residents	Position	Trade payables, advance receipts, and other liabilities; trade receivables, advance payments, and other claims	Face	Quarterly	U.S.-resident entities	\$118
<b>D:</b> Report of Holdings of, and Transactions in, Financial Derivatives Contracts	Position and net flows	Derivatives contracts	Fair value	Quarterly	U.S.-resident entities with derivatives contracts	Gross pos. FV: \$4,705 Gross neg. FV: \$4,578 Net settlements: \$33
<b>S:</b> Purchases and Sales of Long-Term Securities by Foreign-Residents	Flow	Long-term securities	Market	Monthly	Brokers and dealers, security underwriters, issuers of securities, end investors	U.S. securities: • For. purch.: \$1,650 • For. sales: \$1,669 • For. official purch: \$101 • For. official sales: \$111 Foreign securities: • U.S. purch.: \$505 • U.S. sales: \$543 \$6,763
<b>SHCA:</b> Report of U.S. Ownership of Foreign Securities, Including Selected Money Market Instruments	Position	Long- and short-term securities	Market	Annual: December	Large custodial banks, security broker-dealers, end investors	\$12,440
<b>SHLA:</b> Foreign-Residents' Holdings of U.S. Securities, Including Selected Money Market Instruments	Position	Long- and short-term securities	Market	Annual: June	Large custodial banks, issuers, security broker-dealers	\$12,440
<b>SLT:</b> Aggregate Holdings of Long-Term Securities by U.S. and Foreign Residents	Position	Long-term securities	Market	Monthly	Large custodial banks, issuers, end investors, managed funds	U.S. liabilities: \$11,910 Foreign claims: \$6,575

Note: U.S.-resident entities include depository institutions, bank holding companies, financial holding companies, and securities broker-dealers.

\*\* Totals as of end-December 2011.

\* The BQ-3 data include maturity breakdowns used for supplemental calculations.

as the amount for which a derivative contract could be exchanged in a current transaction between willing parties, other than in a forced or liquidation sale.

**TIC S** collects monthly data on gross purchases and gross sales between U.S. residents and foreign residents in long-term domestic and foreign securities as reported by banks, securi-

ties brokers and dealers, and other financial intermediaries in the United States. A memorandum section reports the transactions in U.S. securities that represent purchases or sales by foreign official institutions.

**TIC SHCA and SHC** forms collect the annual and benchmark TIC survey data on U.S. holdings of foreign long- and short-term securities at the individual security level.

**TIC SHLA and SHL** forms collect the annual and benchmark TIC survey data on foreign residents' holdings of U.S. long- and short-term securities at the individual security level.

**TIC SLT** collects monthly data at the aggregate level on foreign holdings of U.S. long-term securities and on U.S. holdings of foreign long-term securities by broad security type.

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