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Foreign-owned banks: (way) underestimated — and volatile — participants in the U.S. banking market

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Abstract
Banking and financial industry participants, analysts, and policy makers appreciate the fact that foreign banks play an important role in the U.S. financial system, but many lack a precise understanding of the size, composition, and impact of the foreign banking sector. In large measure, that vagueness is due to the fact that standard statistical reports on the banking industry, and analyses based on data underlying those reports, have traditionally “under-accounted” for foreign-owned banks in the U.S. The purpose of this study is to explain the nature of this statistical “blind spot,” and to suggest how it might best be addressed. The issue is far from trivial. As this study shows, it is crucial from an economic point of view to account fully for foreign-owned banks’ presence and activities in the U.S. banking market. That point is driven home by a consideration of the radical changes in foreign banks’ U.S. operations over the past decade of extreme turbulence in financial markets. In particular, the study shows that despite the well-documented, large swings in the performance and stability of U.S.-owned domestic banks over the decade surrounding the financial crisis, the volatility of foreign-owned banks in the U.S. was even more dramatic.

JEL Classification Codes: G21, G15, F3.
Keywords: Foreign banks, foreign banking, branches and agencies of foreign banks, foreign-owned subsidiary banks, internal capital markets, intra-company funding flows, net due-to balances.

1 The opinions expressed in this paper are those of the author alone, and should not be interpreted as representing those of the Office of the Comptroller of the Currency, or the United States Treasury Department.
**Introduction**

Financial market participants, analysts, and policy makers in the United States readily acknowledge that foreign-owned banks play an important role in the U.S. banking system, but many are somewhat unclear about the size, composition, and impact of the foreign banking sector. In large measure, that vagueness is due to the fact that standard statistical reports on the banking industry, and analyses based on data underlying those reports, have traditionally “under-counted” foreign-owned banks in the U.S. The first section of this study explains the nature of this statistical “blind spot,” and suggests how it might best be addressed. The issue is far from trivial. As this study shows, it is crucial from an economic point of view to account fully for foreign-owned banks’ presence in the U.S. banking market. That message is driven home by a consideration of the radical changes in foreign banks’ U.S. operations over the past decade of extreme turbulence in financial markets. In particular, the paper shows that despite the well-documented, large swings in the performance and stability of U.S.-owned domestic banks over the decade surrounding the financial crisis, the volatility of foreign-owned banks’ activities was even more dramatic. That greater volatility was manifested in significant ways on both sides of the balance sheet, as the sections below show.

**Foreign banks in the U.S.: understanding terms, definitions, and the data**

The concepts “international,” “cross-border,” and “foreign” banking are complex by nature because they involve the interactions of entities operating in two or more national financial markets and regulatory systems. Given this inherent conceptual complexity, clarity and transparency in the use of terms and data is especially important. In a recent paper, Goulding and Nolle (2012) construct a clear route through both the conceptual and statistical complexities. Their starting point is a discussion of the major concepts making up what has been called “the architecture of global banking.” At its foundation, the nature of global banking rests on two basic organizational dimensions: corporate structure and funding and liquidity strategy. Both involve choices along a spectrum, each of which is defined by its end-points. The end-points for the structure spectrum are the “international bank” model and the “multinational bank” model. An international bank operates out of its home country or from a major financial center, and conducts cross-border business – that is, it does not rely on establishing a physical presence in foreign banking markets. Alternatively, a multinational bank establishes a physical presence in foreign markets in the form of branch offices and/or subsidiary banks. The end-points for the strategy spectrum are the centralized strategy and the decentralized strategy. Under the centralized funding/liquidity strategy, a banking company “pools funds at major offices and redistributes them around the banking group.” Under a decentralized funding/liquidity strategy, a banking company “lets affiliates raise funds autonomously to finance assets in each location.”

Most global banks do not strictly adhere to end-points of the spectrums, in two respects. First, many banks use a mixture of both the multinational and the international bank structural models, emphasizing to different degrees physical presence abroad and cross-border operations. Second, the intersection of the two dimensions introduces complexities. In particular, banking companies that follow (exclusively or predominantly) the multinational model may choose to employ either the centralized funding strategy, the decentralized strategy, or a mixture of both. Multinational banking companies favoring a centralized funding strategy do so by establishing a branch network abroad. Those following a decentralized funding strategy do so by establishing separately capitalized subsidiary banks abroad, which tend to be more adept at attracting local deposits and other funding.

Foreign banking companies operate in the U.S. under both structural models and funding strategies. In this paper, foreign banks in the U.S. refers to operations under the multinational model, that is, foreign-owned banks with a physical presence in the U.S., whether in the form of a branch or a subsidiary bank.

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2 This section of the current paper draws heavily on sections I.A, I.B, and I.C in Goulding and Nolle (2012).
4 Phrases in quotes come directly from McCauley et al. (2010), p. 28.
5 As Goulding and Nolle (2012) note, foreign branches can and do use local funding to some extent, and subsidiary banks do not always, and everywhere, operate completely autonomously. Significantly, Bank for International Settlements (BIS) statistics show a roughly equal use of branches (1,764) and subsidiary banks (1,874) by banking companies [as pointed out in McCauley et al. (2010), p. 26]!
6 This definition follows the practice under U.S. banking law: specifically, Subpart B of the Federal Reserve’s Regulation K defines a “foreign bank” as “an organization that is organized under the laws of a foreign country and that engages directly in the business of banking outside the U.S.” See Goulding and Nolle (2012) for a detailed discussion of definitions under U.S. banking law.
In actually, federal and state banking laws permit a wide variety of different legal entities that together constitute a foreign “banking presence in the U.S.” However, the vast majority of banking activity takes place in branches, agencies, and subsidiary banks. For example, as Goulding and Nolle (2012) document, branches and agencies of foreign banks (commonly considered together) accounted for two-thirds of the total $3.356 billion assets held in all foreign-owned offices in the U.S. in 2011q3, while foreign-owned subsidiary banks accounted for 31 percent – almost all of the remainder – of assets in foreign-owned banking offices in the U.S.

In recognition of these facts, this paper includes as “foreign banks in the U.S.” only U.S. branches and agencies of foreign banks, designated as FBAs, and foreign-owned, U.S.-chartered subsidiary banks, designated as FSUBs. Branches (whether foreign-owned or U.S.-owned) are not separately capitalized, and do not report their earnings on a stand-alone basis. A key difference between foreign-owned branches and U.S.-owned domestic branches is that foreign-owned branches are, with few exceptions, prohibited from accepting retail deposits from U.S. citizens or residents. Foreign-owned agencies are very similar to branches, functionally and legally. FSUBs are commercial banks of which more than 25 percent is owned by a foreign banking organization; as with all other commercial banks, FSUBs are separately capitalized entities. Together, FBAs and FSUBs comprise “foreign banks in the U.S.,” designated in this paper by the acronym FBUSA.

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Commercial banks are designated as domestic banks in the remainder of the paper.

Federal bank regulatory authorities routinely publish detailed statistical releases on U.S. banking industry structure and performance. Several of the most widely-cited releases are commonly regarded as covering the entire U.S. banking industry. However, none of those statistical releases provide a comprehensive picture of the foreign bank sector in the U.S. For reasons discussed in detail in Goulding and Nolle (2012), either those releases do not include data for branches and agencies, or they do not separately account for foreign subsidiary banks, or both.

Table 1 clearly illustrates that this statistical “blind spot” is substantial. That table shows how foreign banks in the U.S. have traditionally been accounted for (or not) in widely referenced statistical releases, using, as an example the FDIC’s Quarterly Banking Profile (QBP). It also shows (in the right-hand side columns entitled “Comprehensive account of foreign banks”) how big an impact occurs as a result of including FBAs and separately identifying FSUBs. The first data row in Table 1 (“U.S. branches and agencies of foreign banks [FBAs]”) highlights two major facts: (1) the QBP does not include FBAs in its calculations of banking industry assets or number of institutions; and (2) their inclusion in the Comprehensive data set means that an additional U.S.$2,207 billion dollars in assets in 236 FBAs is added to the overall size of the U.S. banking industry. Moving down two rows, the QBP columns show that, although FSUBs are included as part of the commercial bank sector, they are not separately identified as foreign-owned entities. As noted

7 The term “banking presence in the U.S.” is in quotes in order to emphasize that it has a specific meaning under federal banking regulation. See, e.g., Supervisory Letter 00-14 (SUP) on Interagency Program for U.S. Operations of Foreign Banks, Board of Governors of the Federal Reserve System (23 October 2000) ("... banking presence in the United States ... can take the form of branches, agencies, Edge and Agreement corporations, commercial lending companies, and subsidiary banks.

8 For underlying details see Nolle (2012), Table 1 and Box 2.

9 Several foreign-owned branches which had traditionally accepted retail deposits before that activity was prohibited with the enactment of the International Banking Act of 1978 were allowed to continue accepting retail deposits, and to insure those deposits under the FDIC’s deposit insurance system. As of 2011q3, the FDIC’s Quarterly Banking Profile listed nine such insured branches; note that the Federal Reserve’s Structure and Share report for that period lists ten insured branches, one of which reported U.S.$0 assets and was not included in the FDIC’s report.

10 See Nolle (2012), Box 2 for a detailed explanation.

11 Note that this paper’s designation of FBAs as “banks” is not a manifestation of “poetic license.” Rather, following Goulding and Nolle (2012), the application of the term “bank” to branches and agencies accords perfectly with the conceptual literature on the architecture of global banking, usage in federal bank regulatory language, and usage under legal language prescribing significant financial activities in which “banks” may engage.


13 It should be emphasized that the focus in this study on the FDIC’s Quarterly Banking Profile (QBP) is meant as illustrative, not comprehensive. In addition to the QBP, two other widely-cited reports or sources of aggregate data for the “U.S. banking industry are the so-called “H.8” release [Assets and Liabilities of Commercial Banks in the United States], and the Flow of Funds Accounts of the United States, both published by the Board of Governors of the Federal Reserve System. Goulding and Nolle (2012) provide detailed descriptions of each of these two data sources and the QBP, and explain the ways in which each release “under-counts” the foreign banking sector in the U.S.

14 This dataset is the same one underlying much of the empirical analysis in Goulding and Nolle (2012). For complete underlying details see Nolle (2012), Box 4.
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in the corresponding right-hand side cells, in 2011q3 there were 60 FSUBs among all commercial banks, accounting for over U.S.$1,000 billion in U.S. banking system assets.

The two rows quantifying the “Total U.S. banking industry” reveal two additional facts. First, FDIC-insured savings institutions are counted in the QBP as part of the grand total of 7,436 “banks,” 456 more institutions than counted in the Comprehensive dataset (which does not include savings institutions among “banks”);15 but even so, at U.S.$15,011 billion in 2001q3, the banking industry - including FBAs - in the Comprehensive dataset is U.S.$1,204 billion larger than is commonly appreciated.

Second, using reports such as the QBP, it is simply not possible to ascertain how large the foreign bank presence is in the U.S.

The bottom section of Table 1 offers further perspective. The exclusion of FBAs means that a sector accounting for an almost 15 percent market share of the total U.S. banking industry is also excluded. Finally, the inclusion of all foreign-owned banks in the U.S., either in the form of branches and agencies or as subsidiary commercial banks, in a manner consistent with economic concepts and regulatory and legal language, means accurately accounting for a sector with more than a 20 percent share of the overall U.S. banking industry.

15 As noted at the bottom of Table 1, the Comprehensive data set uses a slightly broader definition of “commercial bank” than does the QBP.

Table 1 - “Under-counting” the presence of foreign-owned banks in U.S. [2011q3]

<table>
<thead>
<tr>
<th>U.S. banking industry sectors</th>
<th>Traditional coverage: FDIC Quarterly Banking Profile</th>
<th>Comprehensive account of foreign-owned banks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Assets [Billion]</td>
<td>Number of banks</td>
</tr>
<tr>
<td>U.S. branches and agencies of foreign banks (FBAs)</td>
<td>not included1</td>
<td>not included1</td>
</tr>
<tr>
<td>Commercial banks</td>
<td>U.S.$12,559.9</td>
<td>6,352</td>
</tr>
<tr>
<td>of which in U.S.-chartered foreign-owned subsidiary banks (FSUBs)</td>
<td>not separately identified1</td>
<td>not separately identified1</td>
</tr>
<tr>
<td>Total U.S. banking industry</td>
<td>U.S.$13,807.7</td>
<td>7,436</td>
</tr>
<tr>
<td>of which in All Foreign-Owned Banks in the U.S. (FBUSA)1</td>
<td>unascertainable</td>
<td>unascertainable</td>
</tr>
</tbody>
</table>

Foreign banking market share comparisons [percent of total U.S. banking industry assets]

<table>
<thead>
<tr>
<th>Foreign banking groups</th>
<th>FDIC Quarterly Banking Profile</th>
<th>Comprehensive account of foreign-owned banks</th>
</tr>
</thead>
<tbody>
<tr>
<td>FBA market share of U.S. banking system assets</td>
<td>not included</td>
<td>14.7%</td>
</tr>
<tr>
<td>FBUSA market share of U.S. banking system Assets1</td>
<td>unascertainable</td>
<td>21.6%</td>
</tr>
</tbody>
</table>

Source: Adapted from Goulding and Nolle (2012), Table A.2.

1 - FBUSA = FBAs + FSUBs.
2 - Nine U.S. branches of foreign-owned banks which are permitted to offer FDIC-insured retail deposit accounts, but are not counted in the main industry aggregate tables in the Quarterly Banking Profile. These FBAs have approximately U.S.$30 billion in assets and U.S.$15 billion in insured domestic deposits. All of these FBAs were in existence, and taking insured deposits, prior to 20 December 1991 and hence were grandfathered in under the Foreign Bank Supervision Enhancement Act of 1991 as insured deposit-taking institutions.
3 - The Quarterly Banking Profile includes tables segregating groups of banks into “asset concentration groups;” one such group is labelled “International banks;” but this group should not be confused with FSUBs, as defined in the current paper. Specifically, international banks are “banks with assets greater than U.S.$10 billion and more than 25 percent of total assets in foreign offices.” This group, which could otherwise be characterized as “large, internationally-active banks,” includes both domestic banks (as defined in the current paper) and FSUBs meeting the minimum thresholds (but not separately identified as FSUBs). See, for example, Table V-A (p.10) in the third quarter 2011 issue of the Quarterly Banking Profile.
4 - Includes 6,352 FDIC-insured commercial banks and 1,084 FDIC-insured savings institutions.
5 - Following guidelines for “U.S. commercial banks” in the Federal Reserve Board’s Micro Statistics: Reporting Panels, Identification of Entity Types instructions, includes banks in the 50 states chartered as a commercial bank, a nondeposit trust company, or an industrial bank.
6 - FSUBs are a subset of commercial banks, as defined in the note 5 above, which are 25 percent or more foreign-owned.
Foreign banks’ volatility an even more important factor than sector size: key asset-side activities

The previous section explains how, by excluding U.S. branches and agencies of foreign banks and/or not separately identifying U.S.-chartered foreign-owned subsidiary banks, “traditional” banking statistics and analyses understate the size of the U.S. banking industry and obscure important dimensions of its structure. By itself, that observation argues for a careful rethink of standard operating procedures in reporting on, and analysis of, the U.S. banking industry. However, the next two sections of this paper “up the ante” by showing that in addition to its traditionally “under-counted” size, the foreign-owned banking sector in the U.S. warrants close attention because of the truly astonishing swings in foreign banks’ activities over the turbulent first decade of the 21st century. Indeed, despite the volatile behavior of domestic banks over that period, U.S. branches and agencies of foreign banks were measurably more volatile on both sides of the balance sheet.

Long-run trends in assets

Figure 1 provides a starting point for examining assets-side activities. The figure shows trends in total assets over the 2001-2011 period for FBAs, FSUBs, and domestic banks. Because FBAs and FSUBs operate at a smaller scale than domestic banks in aggregate, the figure uses two axes. That artifice makes it easy to identify the main point illustrated in Figure 1: swings and trajectories, both up and down, in total assets for FBAs were proportionally more extreme than for domestic banks. A secondary point illustrated in the figure is that FSUBs’ assets trends were similar overall to those of domestic banks.

Looking just at long-run assets trends for FBAs as from the onset of the financial crisis can be misleading, however. That is especially true in regard to the inference one might draw from Figure 1 that the late-2010 upward surge in FBAs’ total assets signaled a recovery in credit extension by FBAs. A review of underlying data shows how off-base such an inference is. Figure 2a is a first step toward understanding that point. In the figure, FBAs’ assets are decomposed into three major activities: loans, cash and balances due, and other assets. Looking first at the far right-hand portion of the trend line for FBAs’ loans, it is apparent that the strong overall increase in total assets (shown in Figure 1) was not much aided by a more rapid pace than domestic banks until early 2008, at which point assets dropped off more sharply than in the case of domestic banks. Finally, the downward trend in FBAs’ assets continued well into 2010, turning back up abruptly at the end of that year and, finally, surging in 2011H1.

There are substantial contrasts between domestic banks’ assets growth and FBAs’ trends over almost the entire 2001-2011 period. Unlike the 2002-onward upward trajectory of domestic banks’ total assets, the dashed line in Figure 1 shows that FBAs’ assets did not begin to increase until end-2003/early-2004. Subsequently, FBAs’ assets grew at a more rapid pace than domestic banks until early 2008, at which point assets dropped off more sharply than in the case of domestic banks. Finally, the downward trend in FBAs’ assets continued well into 2010, turning back up abruptly at the end of that year and, finally, surging in 2011H1.
The volatility of FBAs’ loan and cash trends is underscored by comparing them with domestic banks’ activities, shown in Figure 2b. Differences between domestic banks’ and FBAs’ trends abound. Domestic banks’ strong loan growth of 45 percent from 2004 to 2008q3, fueled in particular by home mortgage lending, pales in comparison with the 135 percent surge in FBA lending over that period (illustrated in Figure 2a). On the downside, the 5 percent decline in domestic banks’ lending between 2008q4 and its nadir in 2010q3 was only one-fifth the 25 percent plunge in FBA lending activity over that period. Furthermore, although domestic banks’ cash and balances due spiked amid the rush for liquidity in the second half of 2008, the 86 percent increase between 2008q2 and 2009q1 was less than one-third of the 271 percent explosion in cash balances held by FBAs over that period. As Figure 2b shows, after their late-2008 increase, cash balances at domestic banks remained roughly steady over the next two years before rising 31 percent in 2011q3. Those not inconsequential changes were, however, dwarfed by the great volatility, and the enormous overall surge, in FBAs’ cash balances.17

Lending
The comparison with domestic banks’ trends suggests that FBAs’ extraordinary lending and cash balances activities warrant further investigation. Data on the underlying composition of each of those activities is revealing. First, as past research has uniformly shown, C&I lending is by far the biggest component of the loan

16 See Goulding and Nolle (2012) for a detailed look at the underlying composition of the “other assets” category. That study concludes that “loans” and “cash and balances due” are by far the most significant drivers of FBAs’ assets-side activities; in light of that conclusion, the current paper focuses exclusively on those two assets components.

17 In the interest of keeping a complex story as clear as possible, the current paper does not include comparable information on underlying assets trend for FSUBs, a decision motivated by the findings in Goulding and Nolle (2012). That study explains at length how long-run assets trends for FSUBs differ from those of both FBAs and domestic banks but emphasized that, overall, FSUBs’ trends were roughly similar to those of domestic banks.
book for FBAs’ share. Over the period covered by the current study, of the roughly 70-75 percent of FBAs’ lending directed to the nonfinancial sector, the predominant share (two-thirds to three-quarters) is in the form of C&I lending. Indeed, detailed analysis by Goulding and Nolle (2012) of changes in FBAs’ loan book show that C&I lending was “the driver” of loan trends, with other components remaining proportionally stable over the crisis-through-post-crisis period (and, as that study shows, real estate loans accounted for less than 8 percent of total loans). Figure 3 focuses in on the pattern of C&I lending as the main driver of (1) the large decline in FBAs’ lending activity since the onset of the financial crisis, and (2) the exceptionally anemic recovery in FBAs’ lending. In the figure, two trends highlight the gravity of recent C&I lending patterns by FBAs. The solid line shows the pattern of C&I lending by the entire banking system, including, in particular, the precipitous drop from 2008q3 through the first half of 2010. Thereafter, C&I lending, banking industry-wide, has grown modestly but steadily. However, the bars, which show FBAs’ share of all C&I lending, reveal that FBAs’ participation in the recovery of C&I lending has been especially tepid.

Cash and balances due
Turning now to cash activities, Figure 4 decomposes cash and balances due into constituent activities reported by FBAs on their quarterly call reports. The left-most bar in the figure shows the composition of cash and balances due in the 2004q1-2007q4 pre-crisis period, when FBAs placed the majority of their cash balances with banking offices in the U.S., including other FBAs (almost 56 percent of all cash balances), as well as unaffiliated banks and other depositories (13.3 percent of all cash balances). Almost all the rest of their cash balances were placed with unaffiliated banking institutions abroad, including banks in their home country and the home country central bank (5.1 percent of their total cash balances), and unaffiliated banks and central banks in other foreign countries (almost 20 percent). Very small balances (less than 6 percent) were booked at Federal Reserve Banks. The middle bar in Figure 4 shows the composition of FBAs’ cash positions over the 2008-2009 crisis period. On average, over that period, FBAs’ reserves at Federal Reserve Banks ballooned to more than half (54.5 percent) of their total cash balances which, as illustrated above in Figure 2a, had begun an unprecedented ascent. As this happened, FBAs reduced their reliance on other banks, especially banks abroad (top two segments of each bar): FBAs’ use of home country, and other, foreign banks dwindled from a pre-crisis 25 percent of cash and balances due to less than 10 percent.

Although stability returned to the U.S. banking system as the crisis abated, FBAs did not return to, or even toward, their pre-crisis cash assets practices. As the right-hand bar in Figure 4 shows, 90 percent of their by-then record-high levels of cash

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18 At least since Goldberg (1992), analyses of the importance of foreign banks in the U.S. banking market have focused on foreign banks’ business lending, as measured by commercial and industrial (C&I) loans and/or C&I loans plus commercial real estate loans. That perspective is based on the observation that FBAs in particular do not engage in as wide a range of assets-side activities as do commercial banks, instead focusing on business lending. In the event, foreign banks’ business lending market share has traditionally been half that of their share of total U.S. banking market assets. Indeed, several studies suggest that, from a business-strategy viewpoint, the most accurate measure of foreign banks’ importance relative to U.S. banks is one that includes both the C&I loan figures reported on the regular quarterly call report, and the lending activities (most of which targets business customers) of FBAs’ and internationally-active U.S.-chartered commercial banks’ so-called “Caribbean branches.” Using this more comprehensive measure, focused only on business lending, has shown as much as a 40 percent U.S. banking market share for foreign banks. McCauley and Seth (1992) and Nolle (1994) were the first to emphasize and empirically investigate this issue.

19 See Miu et al. (2012) for a perspective on this focusing on funding pressures faced by banks headquartered in Eurozone countries.
Foreign-owned banks: (way) underestimated — and volatile — participants in the U.S. banking market

The majority of the remaining 10 percent of cash balances were booked at unaffiliated banking offices in the U.S. (mostly with unaffiliated FBAs), while a small proportion (2.7 percent) were placed abroad with unaffiliated banks and central banks. Notably, almost nothing was placed with home country banks or the home central bank (0.25 percent).

Together, the overall surge in FBAs' cash assets, and the radical changes in the underlying composition of those assets had major impacts on the balance sheet of the Federal Reserve System. Figure 5 illustrates this fact. The farthest left-hand set of bars in the figure uses banks' average (and very stable) behavior over the 2001q2-2008q2 period as a reference point for gauging the extraordinary changes in FBAs' cash activities as of the full onset of the financial crisis in 2008q3. Beginning in 2008q3, two sets of trends are plotted in Figure 5. The bold, dotted line in the figure plots the share of total Federal Reserve System liabilities accounted for by reserves at all banks and other depository institutions. Pre-crisis, reserves accounted for 5 percent or less of Federal Reserve liabilities. Figure 5 shows the abrupt change in that situation in the fall of 2008, when reserves surged to more than 50 percent of total Federal Reserve System liabilities. As is well-documented, this increase in reserves is a direct consequence of the massive liquidity provision measures engineered by the Federal Reserve [Fleming (2012), Cecchetti (2009), Willardson and Pederson (2010), and Fleming and Klagge (2011)].

The bars in Figure 5 show the percentage of all reserves at Federal Reserve Banks accounted for by separately by domestic banks, FBAs, and FSUBs. Of particular note are the large declines in the share of total reserves at Federal Reserve Banks accounted for by domestic banks (textured bars), and the correspondingly large increases in FBAs’ share (darkest bars). It is now well-known that foreign-owned banks participated heavily in the Federal Reserve’s liquidity provision programs; perhaps less well-known is the magnitude of the build-up of foreign-owned banks’ reserves. In particular, as the dark FBA bars show, by 2011q3,

Note that in 2011q3, the last quarter covered in our dataset, FBAs’ reserves at Federal Reserve Banks accounted for 95 percent of their total cash and balances due.

Figure 5: U.S. branches and agencies of foreign banks (FBAs) account for increasingly large share of burgeoning reserves at Federal Reserve Banks since the crisis

Source: Flow of Funds, FFIEC 031, FFIEC 041, and FFIEC 002: bank call reports.

20 Note that in 2011q3, the last quarter covered in our dataset, FBAs’ reserves at Federal Reserve Banks accounted for 95 percent of their total cash and balances due.

21 See, for example, Goldberg and Skeie (2011). See also Fleming (2012), who documents the fact that “the 10 most frequent borrowers from the TAF (Term Auction Facility) [were] New York branches of foreign banks” (p. 18, and Table 2 in that paper).
FBAs accounted for almost 50 percent of all reserves, about 10 percentage points higher than domestic banks. Adding the nearly-5 percent share held by FSUBs to the FBA share means that by 2011q3, well over half of all reserves were held by foreign-owned banks in the U.S.

Foreign banks' volatility: key liabilities-side activities
The liabilities side of a bank’s balance sheet, broadly speaking, is a record of how credit extension and other asset-side activities are funded. As the financial crisis rapidly deepened in the fall of 2008, serious concerns about how, and even whether, the inter-bank market would continue to function drew attention to banks’ funding practices and liabilities-side activities more broadly. Relatively unremarked at the time were volatile swings in key liabilities-side components for U.S. branches and agencies of foreign-owned banks which, as this section shows, were considerably more extreme than in domestic banks. Also significant is the fact that, while domestic banks’ liabilities-side activities have returned to, or are near, long-run trends, instabilities continue to characterize FBAs’ liabilities-side activities.

Long-run trends in liabilities
Figure 6a, showing trends over 2001 to 2011 in the major liabilities-side components of domestic banks, provides a useful context. The substantial drop in borrowed funds that began in 2008q3 reflects the abrupt, substantial, and sustained nature of the turmoil in the inter-bank funding market. In distinct contrast, Figure 6a shows that domestic banks’ deposits growth remained relatively smooth over the entire decade, recording a nearly unbroken upward trend over the entire decade. Worth noting here is that long-run trends in FSUBs’ major liabilities components (not shown) were roughly similar to those of domestic banks. Figure 6b, which decomposes FBAs’ liabilities-side activities into the same major categories, presents a sharply different picture in every respect (except for the residual “other liabilities” trends which, as with domestic banks, remained fairly steady, and proportionally small, over the decade). The remainder of this section examines key components underlying the significant changes in deposits, borrowed funds, and net due-to activities of FBAs.

Deposits
Retail deposits (i.e., less than U.S.$100,000), despite their
short-term nature, are considered a stable source of funding because they are relatively interest rate inelastic, tend to serve as transactions accounts, and hence are less likely to drain away in such a large and rapid manner that a bank’s liquidity position would be imperiled. As noted above, with few exceptions, FBAs do not have access to retail deposits, and as a consequence they have relied more heavily on nonretail deposits, broadly defined as large (U.S.$100,000 and greater) deposits from financial and nonfinancial companies. Such deposits are widely regarded as being more volatile than retail deposits in that they are interest rate-elastic, do not underpin transactions accounts, and hence are more likely to move quickly, in financially meaningfully volumes, in response to actual or anticipated market shocks.

Figure 7 shows the retail-versus-nonretail mix of deposits for FBAs, domestic banks, and FSUBs. The lines in the figure represent the share of total deposits accounted for by large (nonretail) time deposits (U.S.$100,000 or greater) for each of the three banking groups, where such deposits are one commonly used gauge of nonretail, large institutional deposits.22 The top, dashed line shows the traditionally much larger role played by large time deposits for FBAs compared to domestic banks and FSUBs. Starting at the left-hand side of Figure 7, in 1994, large time deposits accounted for about one-third of FBAs’ total deposits, a share approximately four times that for both domestic banks and FSUBs.23 Throughout the 1990s and into the early 2000s, amid a banking system-wide struggle for core deposits, large time deposits’ share of total deposits rose for all three groups of banks, but the steep upward trajectory for FBAs was magnitudes greater than the modest increases for the other two groups of banks.24 By the beginning of the baseline period, large time deposits accounted for more than 80 percent of FBA deposits, compared with ratios in the 10-13 percent range for domestic banks and FSUBs. Reliance on large time deposits continued to increase for FBAs through the pre-crisis and crisis periods, while over the same periods domestic banks and FSUBs gradually reduced their large time deposits-to-total deposits shares. By the end of the post-crisis period, domestic banks and FSUBs had reduced those ratios down to, or slightly below, the low levels of the mid-1990s. However, FBAs continued to be overwhelmingly dependent on large time deposits.

Finally, recalling the overall growth of deposits shown in Figure 6a for domestic banks, it is clear that domestic banks’ deposit bases became more stable over the post-crisis period.25 FBAs also experienced a rising deposits base, as illustrated in Figure 6b. However, the increase in deposits was made up overwhelmingly of large nonretail rather than retail deposits, and as a consequence, FBAs’ deposit base has become substantially less stable in the post-crisis period.

**Borrowed funds**

In addition to deposits, banks fund their activities by borrowing, largely short-term, from other banks and financial institutions. Such wholesale funding has traditionally been more important to FBAs than to commercial banks. Even so, Figure 6b showed that, after increased reliance on borrowed funds during the pre-crisis through crisis periods, during the post-crisis period FBAs

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22 See Goulding and Nolle (2012) section V.B for a detailed discussion of this point, part of which centers on the fact that the use of this category of deposits makes possible an “apples-to-apples” comparison of nonretail deposits across commercial banks (in the terms of the current paper, domestic banks and FSUBs) and FBAs.

23 Specifically, in 1994q1, the large time deposits-to-total deposits shares were 33.5 percent for FBAs, 7.1 percent for domestic banks, and 8.3 percent for FSUBs.

24 See, for example, Harvey and Spong (2001) for a description and analysis of banks’ challenges in maintaining the core deposits component of their deposits base.

25 This observation extends to FSUBs; as noted in the discussion about Figure 6a, trends in the major liabilities-side components for FSUBs were similar to those for domestic banks, a generalization that especially applies to deposits.
returned to a lower reliance on borrowed funds, to a degree about equal to that in the more stable early-2000s period.

The top row of Table 2 starts from that relatively benign observation: borrowed funds accounted for 35.46 percent of FBAs’ assets in the baseline period, and 35.57 percent in the post-crisis period. However, underlying details about FBAs’ borrowed funds activities, shown in the remainder of Table 2, paint a less sanguine picture. Below the first line in the table, FBAs’ wholesale funding is divided into two basic categories: funds obtained in the fed funds and the repurchase agreements (repo) markets, and other (largely) short-term funding transactions with banks and other financial institutions. Of these two basic markets for borrowed funds, liquidity and market risk are widely considered to be lower for the fed funds and repo markets. With that in mind, one significant observation about the underlying details in Table 2 is that FBAs reversed their relative reliance on these two basic sources between the baseline and post-crisis period. Specifically, in the relatively stable “baseline” period, fed funds and repos accounted for 70 percent of FBAs’ borrowed funds compared to the 30 percent share provided by other borrowed money. By the post-crisis period, less than half of FBAs’ wholesale funding came from the fed funds and repo markets. Also of note is that, as the use of the fed funds market declined, the share of fed funds supplied by commercial banks operating in the U.S. dropped steeply. The mix of counterparties with whom FBAs dealt in “other borrowed funds” markets also changed in noteworthy ways. Specifically, wholesale funding supplied by other banks dropped decisively, from just over 30 percent of “other borrowed funds” during the baseline period, to less than 8 percent in the post-crisis period, as FBAs became increasingly reliant on nonbank institutions (and, although not shown in Table 2, these nonbanks were located predominantly in foreign countries). Overall, the underlying data on FBAs’ borrowed funds activities strengthens the case for concluding that FBAs’ funding base has become less stable over time.

Intra-company funding
An individual FBA will engage in a variety of financial transactions with its parent bank and related offices in its home country and other foreign countries. Corporate business strategy determines the exact composition of such intra-company transactions, which include deposits, loans and borrowings, fed funds and repos, claims resulting from clearing activities and foreign exchange transactions, etc. Over a given time period, transactions flows can, and do, go both directions. Conceptually, an FBA’s due-from balance is an extension of credit to its parent company (and/or related offices abroad) and, as with a loan, is booked as an asset; a due-to position represents an amount owed by the FBA to its parent (and/or related offices abroad) and hence is a liability. In their periodic reports, FBAs calculate the net value of these two-way flows over the relevant interval: an individual FBA with net balances due from its parent and related foreign offices will book that value on the assets side of its balance sheet, while an individual FBA with a net due-to position with its parent and related offices abroad records that position on the liabilities side. In a given quarter, an individual FBA records either a net

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26 For a more detailed breakout, see Goulding and Nolle (2012), Table 9.
27 A comprehensive list of such intra-company transactions can be found in the instructions for Schedule M of the FFIEC 002 call report that FBAs file quarterly.
28 Note that FBAs do not separately break out and report transactions solely with their parent company on their quarterly call reports.
due-from or net due-to balance, but not both. In contrast, in any given quarter, some FBAs have net due-from balances and others have net due-to balances, and hence aggregated industry statistics for FBAs show net balances on both the assets and liabilities sides.29

Figure 8 illuminates these FBAs-in-aggregate concepts by showing the trends in FBAs’ aggregate (net) due-from (dotted line) and (net) due-to (dashed line) positions with their foreign parent companies and related offices abroad. As the top-most box on the right-hand side of Figure 8 explains, as an asset, a due-from balance represents an intra-company flow of funds out of FBAs to parents and related offices abroad. The box just below that explains, in turn, that due-to balances represent intra-company inflows of funds to FBAs from parents and related offices.30

Figure 8 also includes a third line, the solid Net-due To Related Foreign Offices; that line is replicated from Figure 6b above. It is the difference between the two net-due positions for FBAs in aggregate. Although not based on standard accounting practice, the construct follows the analytic convention established by the Federal Reserve System for its weekly H.8 statistical release as a way to quantify and characterize the direction of overall transactions flows between FBAs in aggregate and their related offices abroad.31 By convention, the resultant value (so to speak, the “netting of the two net-dues”) is calculated as FBAs’ aggregate net due-to positions minus their aggregate net due-from positions. Because the order of the “netting” is liabilities-minus-assets, in the H.8 release “net-due to related foreign offices” is recorded on the liabilities side of the aggregate balance sheet - even if the value is negative.32

The two left-hand side boxes in Figure 8 help explain how to interpret a given value along the solid ‘net-due to’ line. A positive value (i.e., a value above the horizontal axis at 0) along the solid line means that, for the given time period, FBAs’ aggregate due-to positions were greater than their aggregate due-from positions. As the top left-hand box in Figure 8 explains, in terms of funding flows, positive values along the solid ‘net due-to’ line mean that FBAs in aggregate owe more to parents and related offices abroad than those offices owe them, a situation that results in an intra-company funding inflow to FBAs in aggregate from their parents and related offices abroad. Conversely, a negative value along the solid line means that, for the given time period, FBAs’ aggregate ‘due-to’ balances were smaller than their ‘due-from’ balances; that is, FBAs had extended a greater amount of credit to related foreign offices than those offices had extended to the FBAs. The box in the lower left-hand side quadrant indicates that such a result represents a funding outflow from FBAs to parents and related offices abroad.

What particularly stands out in Figure 8 about all three components are their large dollar volumes and erratic behavior, especially in the right-hand “half” of the figure. Starting from the left-hand side and considering all three of the lines together, because ‘due-to’ balances and ‘due-from’ balances registered

29 See, for example, any issue of the Federal Reserve System’s quarterly statistical release (4.30) Assets and Liabilities of U.S. Branches and Agencies of Foreign Banks.
30 Both the ‘due-to’ (a liability) and ‘due-from’ (an asset) components are never negative, consistent with standard accounting practices.
31 The underlying data for the H.8 (Assets and Liabilities of Commercial Banks in the United States) is collected by the Federal Reserve System on its FR 2644 report (Weekly Report of Selected Assets and Liabilities of Domestically Chartered Commercial Banks and U.S. Branches and Agencies of Foreign Banks), submitted by a small, representative set of banks and FBAs in the U.S. Note that in the FR 2644, the accounting entry “net due to related foreign offices” is not the “net-net” concept constructed and employed in the H.8 release for FBAs in aggregate.
32 With few exceptions, standard accounting practice does not allow booking a negative value. A common exception to this principle in bank accounting is that required changes in the “stock” of reserves for expected loan losses, always booked on the assets side, may for a given quarter be negative, in which case the entry is a “contra asset.”
similar values throughout the 1990s, the difference between them, respectively, was small, and hence the solid ‘net due-to’ line was close to the horizontal axis during those years. In the event, for most of that time period, FBAs’ aggregate net ‘due-to’ position was positive, indicating that FBAs as a group saw small but steady funding inflows from parent and other related foreign offices.

The direction of the net funding flows changed decisively in the early 2000s. The negative portions of the solid net ‘due-to’ line indicate that, for a sustained period of time, FBAs and their parents engineered funding outflows to the parents and other related offices abroad. These net outflows grew at an increasing rate through the 2004-2007 pre-crisis period, almost entirely based on steeply rising due-from transactions, as the steeply rising dotted line over that period shows.

As the crisis erupted, these intra-company funding flows changed in several significant ways. Between 2008q2 and 2008q4, net ‘due-to’ balances more than halved, to U.S.$278 billion, from their historical negative “peak” of U.S.$628 billion. This large decrease in funding outflow from FBAs to parents and other related foreign offices was due to large changes in both the asset-side and liabilities-side components of intra-company flows. On their asset side, FBAs sharply reduced funding outflows to parents and other offices abroad, with ‘due-from’ balances declining more than 30 percent over the 2008q2 - 2008q4 period (from U.S.$780 billion to U.S.$538 billion). On their liabilities side, FBAs’ ‘due-to’ balances increased 70 percent, from U.S.$152 billion to U.S.$260 billion, over that same three-quarters period. Hence, as the financial crisis escalated amid a global scramble for liquidity, FBAs as a group not only reduced funding outflows to their parents and related foreign offices, but also received funding inflows from their parents and other offices abroad.

Subsequently, FBAs were able to access liquidity-provision facilities set up by the Federal Reserve System in response to the crisis and, as a consequence, the crisis-induced changes in both components of their intra-company funding flows reversed direction.33 The dotted line in the top portion of Figure 8 shows the increase, over the first part of 2009, in FBAs’ funding outflows to parents and related offices, and the dashed line shows that, at the same time, FBAs somewhat reduced their funding inflows from parents and other offices abroad. The combined effect of those trends was that FBAs’ net ‘due-to’ balances moved back toward pre-crisis levels, as the sharp drop in the solid line over the 2009q1-2009q3 period illustrates.

Thereafter, what might have seemed, in early-2010, to be a return to a traditional, long-run pattern of intra-company funding flows instead turned into an “overshoot” of historic proportions. Two dynamics were at work over the 2010-2011q3 period. First, over the entire period, FBAs reduced their funding outflows to parents and related foreign offices, as the undulating drop in the dotted line at the far right-hand side of Figure 8 shows. Second, beginning in 2011q1, FBAs began to receive historically large intra-company funding inflows, as shown by the upward surge in the dashed line in the figure. The net result of those two trends was that, for the first time in more than a decade, FBAs as a group received net funding inflows from parents and related foreign offices, as the positive values for the solid line indicate. Indeed, as of 2011q3, net funding inflows to FBAs had reached a level double the average characterizing the 1990s.

FSUBs and domestic banks also engage in intra-company funding activities with their offices abroad, and a comparison of their volumes and patterns with those of FBAs is useful. Ahead of such a discussion, it is important to be clear about the perspective conveyed by the call report data for both domestic banks and FSUBs. As a U.S.-chartered commercial bank, an FSUB (or a domestic bank) reports activities on a “consolidated” basis, i.e., for itself plus any branches or subsidiaries it owns, including those located in foreign countries.34 Consolidated reporting in this sense therefore covers “down-stream” operations only. It does not include “up-stream” information on an FSUB as part of a larger corporate network under a foreign-based parent company; i.e., from the point of view of the call report data, FSUBs are the parent bank vis-à-vis their network of branches and subsidiaries, both in the U.S. and abroad, in exactly the same

33 See Goldberg and Skeie (2011) for a description of discount window borrowing by U.S. branches and agencies of foreign banks during the crisis. Cetorelli and Goldberg (2012) look at parent bank-U.S. FBAs funding flows as from the crisis; see also Miu et al. (2012), and Cetorelli and Goldberg (2011).

34 Specifically, instructions for the FFIEC 031 quarterly call report state that it “is to be filed by banks with branches and consolidated subsidiaries in U.S. territories and possessions, Edge or Agreement subsidiaries, foreign branches, consolidated foreign subsidiaries, or International Banking Facilities.”
way as are domestic banks. In the event, FSUBs’ intra-company flows are small in both an absolute sense and in proportion to the total funding picture for FSUBs. Furthermore, FSUBs’ net ‘due-to’ positions follow patterns very similar to those of domestic banks. As shown in Figure 6a, domestic banks’ net ‘due-to’ activities have always been a proportionally small, and relatively stable, component of their liabilities.

Nevertheless, relative to FBAs’ net ‘due-to’ activities, domestic banks’ intra-company funding flows were large, as Figure 9 makes clear. Figure 9 considers the combined impact of the intra-company funding flows of all three groups of banks on U.S. banking system liquidity, as follows. The solid red line in the figure replicates FBAs’ net ‘due-to’ funding flows from Figure 8; the dashed line shows domestic banks’ net ‘due-to’ flows; and the dotted line shows FSUBs’ net ‘due-to’ activities. The bars in Figure 9 show the combined effect of the three intra-company/cross-border funding flows in terms of net inflows into, or outflows out of, the U.S. banking market. As the box in the upper left-hand quadrant of the figure explains, positive values along any line represent funding inflows to the U.S. banking market and negative values represent funding outflows from the U.S. banking market. Adding the positive and negative values of the three flows together for each time period results in a “net” balance, either positive or negative, for that time period; the bars show the pattern of those net balances over time. The small negative bars for most of the pre-crisis period (roughly, 2001-2007) show small declines in U.S. banking system liquidity, as intra-company funding flows to “parent” domestic banks and FSUBs by their foreign offices were not enough to offset FBAs’ funding outflows from the U.S. market to their parents and related offices abroad. During and after the crisis, the net effects on U.S. banking system liquidity were larger and more erratic, as the bars in the right-hand third reveal. That said, in a broader context, the net impact on overall U.S. banking system liquidity via those intra-company liquidity management activities remained small, averaging less than 1 percent of U.S. banking system assets over almost every time period.

Summary and conclusions

The purpose of this study is to call attention to the nature and importance of the “under-count” of foreign-owned banks’ U.S. presence, and explain how this issue can be addressed. The first section of the paper explained the nature of the under-count, showing that a proper accounting for foreign-owned banks results in an increase of about 20 percent in the size of the U.S. commercial banking market “pie” as compared to traditional, widely referenced statistical releases. That section emphasizes in particular that, on conceptual, economic, regulatory, and legal grounds, U.S. branches and agencies of foreign banks (FBAs) should be fully accounted for in statistical profiles and analyses of the U.S. banking industry.

The following sections show why, in addition to their aggregate share of the U.S. banking market, foreign banks in the U.S. have become increasingly important from an economic policy point of view. Those sections identify the most important activities underlying trends on both sides of foreign-owned banks’ balance sheets over the past ten years of historic turbulence in U.S. and

35 There is no separate identification of FSUBs’ transactions with their foreign parents in the call report data. Nevertheless, FSUBs’ net due-to data provide some interesting insights in that regard, as Goulding and Nolle (2012) explain. They note, however, that those inferences are not of the first order of magnitude, especially relative to FBAs’ intra-company funding flows. For this reason, the current study does not delve into the details of FSUBs’ net due-to flows.

36 However, see Goulding and Nolle (2012), section V.D for one interesting, although not especially important, exception to that generalization. See also that study’s detailed description of trends in the underlying ‘due-to’ and ‘due-from’ components of domestic banks’ net ‘due-to’ activities.
global financial markets. The clear conclusion emerging from that analysis is that, on both sides of the balance sheet, foreign banks in the U.S. - especially FBAs - were, and to a large extent remain, more volatile than U.S.-owned “domestic banks.”

Indeed, the measurably greater volatility characterizing FBAs is the central story line in both the asset-focused and liabilities-focused sections of this paper. On the assets side, in addition to their significantly anemic C&I lending performance, FBAs’ cash assets activities are of particular note. The investigation shows that FBAs’ extreme emphasis, post-crisis, on increasing cash balances not only dominates the assets side of their aggregate balance sheet, but now exceeds domestic banks’ balances. In addition, FBA cash balances are almost entirely composed of excess reserves held at Federal Reserve Banks, such that FBAs accounted for approximately one-third of total liabilities on the Federal Reserve System's balance sheet in 2001q3.

Changes in FBAs' liabilities-side activities are, if anything, even more significant. The nature of these changes can be summarized as follows: FBAs, traditionally more dependent on wholesale funding than domestic banks, are currently reliant on an unprecedented level of funding from wholesale and super-wholesale sources of borrowed funds. At the same time, a group FBAs are, for the first time this century, net borrowers from their foreign parents and related offices abroad. The overall profile is one of much less stable funding than at any time in the past two decades. Under those circumstances, the importance of the emerging literature on the effects of banking and financial system problems in Eurozone countries on U.S.-based FBAs via their parents looms ever larger.

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