Irving Fisher Committee on Central Bank Statistics



IFC Working Papers No 19

Using mirror data to track international banking

by Swapan-Kumar Pradhan and João-Falcão Silva

December 2019



BANK FOR INTERNATIONAL SETTLEMENTS

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ISSN 1991-7511 (online) ISBN 978-92-9259-300-1 (online)

Using mirror data to track international banking

Swapan-Kumar Pradhan and João-Falcão Silva¹

Abstract

Recent enhancements to the BIS international banking statistics have led to improvements in data quality and coverage, with more information available about the instrument type, counterparty country by bank nationality and counterparty sector of banks' international positions. This study uses mirror data techniques to examine those data elements that are common both within the various international banking datasets and between these datasets and other external financial statistics such as the Balance of Payments, International Investment Position, Coordinated Portfolio Investment Survey and the BIS International Debt Securities Statistics. We exploit the conceptual relationships between these data sources to check data validity at an aggregate level. The paper thus provides a road map for users to enhance their analyses using mirror data concepts.

Keywords: Balance of payments, data collection and data estimation methodology, international banking, international financial data.

JEL classification: C82, C800, F42, F300.

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Abbreviations

BIS	Bank for International Settlements
BoP	Balance of Payments
BPM6	Balance of Payments and International Investment Position Manual – sixth edition
CBS	Consolidated banking statistics
CBSI	Consolidated banking statistics on an immediate counterparty basis
CBSG	Consolidated banking statistics on a guarantor basis
CGFS	Committee on the Global and Financial System
CPIS	Coordinated portfolio investment survey
DC	Domestic currency
DS	Debt securities
ECB	European Central Bank
EUR	euro currency
FSB	Financial Stability Board
FC	Foreign currency
IB	Interbank
IBS	International Banking Statistics
IDS	International debt securities
IFC	Irving Fisher Committee (on Central Bank Statistics)
IIP	International Investment Position
IMF	International Monetary Fund
LBS	Locational banking statistics
LBSR	Locational banking statistics by residence
LBSN	Locational banking statistics by nationality
LC	Local currency
LD	Loans and deposits
USD	US dollar

A. Introduction

The term "mirror data" refers to different data sources that capture the same concept from alternative perspectives. For example, when looking positions amongst a population of reporting banks, the creditor banks' assets should be equal to the debtor banks' liabilities when valued using the same methodology. The analysis of mirror datasets is important for validation, and can help to fill gaps, apply estimations, correct errors and better understand each of the individual datasets. In addition, it promotes consistency and accuracy by raising statistical quality standards, which are crucial for the production of high-quality data used by economists, analysts and policymakers.

This paper focuses on external statistics for countries, and compares creditor and debtor data sources. It explores linkages between the BIS International Banking Statistics (IBS), the IMF International Investment Position (IIP) and Coordinated Portfolio Investment Survey (CPIS) statistics and the BIS International Debt Securities (IDS) statistics. It seeks to identify statistical consistency tests between these external statistics. It first compares the published data for these different datasets and the methodological aspects that may explain the observed discrepancies. Along the way, it offers guidance on the types of reporting errors that should be avoided. The methodologies developed for consistency could be applied to individual reporting countries as well as to bilateral comparisons amongst reporting countries (eg debtor versus creditor) at a granular level.

Overall, our findings can be characterised as follows.

- First, we examine the internal consistency of interbank positions in the locational banking statistics by residence (LBSR). A comparison of interbank claims and liabilities by currency shows that the data are well matched at the aggregate level, but that discrepancies are apparent at the more granular country level.
- Second, our comparison of the LBSR data and the IMF IIP data for loans and deposits shows a similarly decent match at the aggregate level, but again with discrepancies for certain countries. These two data sources have relatively long time series and comparisons can be done by currency, counterparty sector, and counterparty country.
- Third, the comparison between LBSR and IIP for debt securities claims shows good consistency for a large number of countries. Cross-border debt securities claims from the IIP come with a maturity breakdown (short- and long-term), which is useful in analysing the LBSR data.
- Fourth, our comparison of debt securities liabilities between the LBSR and the CPIS reveals that

 (a) certain countries do not report these data in the LBSR while data are available in the CPIS; and
 (b) a counterparty country breakdown can be obtained, albeit partially, from the CPIS for those
 LBSR reporting countries which mark their positions as "unallocated by counterparty country".
- Finally, the gap in the debt securities liabilities between the LBSR and the IDS has been reduced considerably over time, suggesting improvements in coverage in the LBSR at the aggregate level. The good coverage in the LBSR of the counterparty sector breakdown can usefully complement the information provided by the IDS.

This paper proceeds as follows. Section B describes the data sources used in the following sections. From there, we take the LBSR as the base dataset, and conduct the mirror data analysis in steps. It is useful to divide the analysis by instrument, so Section C focuses on loans and deposits in the LBSR, and Section D focuses on the debt securities positions. In Section C, we start with an analysis of the inherent consistency within the LBSR, by looking at how well interbank asset and liabilities positions match when they are reported from two different country perspectives. From there, we compare the loans and deposits positions in the LBSR with the corresponding positions in the IMF IIP data. In Section D, we compare the consistency of the LBSR debt securities positions with three other datasets, the IMF IIP data, the IMF CPIS data and the BIS IDS data. Section E concludes with proposed future work. Annex 1 provides statistical tables by country for each of the mirror concepts analysed in Sections C and D, and

the list of names of ISO country codes used in the texts and tables; Annex 2 provides the comparable items of claims/liabilities, by bank nationality, between the LBSN and the CBSI.

B. Description of data sources

This study compares data from four key sources: the BIS IBS, the IMF IIP, the IMF CPIS and the BIS IDS. This section explains the basic structure of each of these datasets and how they can be used in mirror data analysis.

B.1. BIS international Banking Statistics

The IBS are comprised of two datasets, the locational banking statistics (LBS) and the consolidated banking statistics (CBS), both of which capture international banking positions. In 2012, the Committee on the Global Financial System (CGFS), which oversees the collection of the BIS international banking statistics (IBS), approved a set of enhancements to the IBS aimed at filling long-standing data gaps and better capturing the new financial landscape (CGFS (2012)). The enhancements expand the coverage of banks' balance sheets to include their domestic positions, not just their international activities. In addition, they provide more information about reporting banks' counterparty subsectors in different countries. These enhancements allow for a better comparison of mirror data items within and across the two datasets, as discussed below. In this paper, we examine how the metrics captured in the LBS compare with similar metrics in the other three datasets listed above.

The LBS follow balance of payments concepts, and tracks the claims and liabilities (including interoffice positions) of banking offices *resident* in a reporting country. It includes breakdowns by instrument (loans and deposits, debt securities, and "other"), currency, bank nationality, counterparty sector (eg intragroup, central banks, unrelated banks and non-banks) and counterparty country. The LBS are divided into two data subsets, the LBS by residence (LBSR) and the LBS by nationality (LBSN). Broadly speaking, the datasets differ in that the LBSR are reported by bank located in a particular country and includes an instrument breakdown for banks' on-balance sheet claims/liabilities, while the LBSN provide the same information on the basis of a reporting bank's nationality regardless of where it is located.

In contrast to the LBS, the CBS follow supervisory concepts, and track the worldwide consolidated claims of banks headquartered in a reporting country, including the claims of their foreign affiliates (but excluding inter-office positions). The CBS are also divided into two subsets: the CBS on an immediate counterparty basis (CBSI), and on a guarantor basis (CBSG). The CBSI aggregate claims based on the contractual obligation of banks' immediate counterparty, while the CBSG aggregate exposures on the basis of ultimate obligor, after taking into account risk transfers across counterparty countries. Annex 2 provides a comparison of the common elements (breakdowns) between the LBSN and the CBSI, since both abide by the principle of immediate counterparty and are aggregated by the nationality of banks.²

B.2. BIS international debt securities statistics

The IDS are a security-level dataset compiled by the BIS using information from commercial data providers. They describe securities issued outside the local market of the country where the borrower resides and/or securities issued under international law. They capture Eurobonds and foreign bonds but exclude negotiable loans. The securities are aggregated, among other criteria, by residence, sector and nationality of issuers, and by currency of issue. The residence of the issuer is the country where the

² The latest version of the reporting guidelines, reporting templates and other documents related to the <u>BIS international</u> <u>banking statistics</u> are available on the BIS website.

issuer is incorporated, whereas the nationality of the issuer is the country where the issuer's parent is headquartered. In principle, the cross-border debt securities liabilities of banks in the LBSR should be comparable with the IDS issued by the bank sector in the same location (residence). However, information may be incomplete if the ownership of securities changes through secondary market transactions.

B.3. IMF balance of payments / International Investment Position data

The IIP is a statement that shows, at a given point in time, the value of financial assets (liabilities) of residents in one economy that are claims (debts) on non-residents or are gold bullion held as reserve assets.³ The LBSR statistics follow the principles of the BoP and the IIP: they track claims and liabilities of banks resident in one country vis-à-vis the rest of the world, and the classification of instruments, sector delineation, valuation and accounting practices are consistent across these datasets. The LBSR are best suited for macro analysis of economic and financial stability issues, and are widely used by BoP compilers especially to measure the external exposure of non-bank sectors. Our analysis focuses on the linkages between LBSR and the IIP with regard to loans, deposits and debt securities of deposit-taking corporations excluding central banks, among all functional categories.

B.4. IMF Coordinated Portfolio Investment Survey

The Coordinated Portfolio Investment Survey (CPIS) is a voluntary data collection exercise conducted under the auspices of the IMF that collects a country's holdings of portfolio investment securities issued by entities in another country. It can be used to derive country estimates of portfolio investment liabilities to non-resident holders. Data are separately requested for equity and investment fund shares, long-term debt instruments, and short-term debt instruments.

The CPIS was first conducted for end-December 1997, but the data are comparable annually only from 2001 to 2012; from 2013 onwards, the CPIS data were published semi-annually (end-June and end-December).

Reporting banks in the LBSR provide information about their debt securities liabilities to resident and non-resident (cross-border) counterparties. The concepts of counterparty country and counterparty sector are identical between the LBSR and the CPIS: both follow the same treatment as in the BoP/IIP. The treatment of instrument classification is almost the same.

The debt securities liabilities of banks from the LBSR are thus comparable to the bank-issued debt securities liabilities (derived from reported assets) in the IMF CPIS.

C. Mirror data analysis with the locational banking statistics by residence

One of the most important ways to validate data and ensure consistency is to analyse linkages with other data sources. Data analysts and decision-makers can exploit these linkages by looking at data that are compiled from different vantage points and under different methodologies to yield a more comprehensive picture of the economic question.

This section introduces the concept of mirror data analysis by first considering the internal consistency of the LBSR data, with a focus on interbank positions. From there, it looks specifically at a single instrument category in the LBSR, loans and deposits, and compares the reported data with the

³ See the IMF Balance of Payments and International Investment Position Manual (sixth edition) (BPM6).

corresponding figures from the IMF IIP data (Section C.2). The following Section D focuses on a comparison of another instrument category in the LBSR, debt securities.

C.1. Internal consistency of the locational banking statistics by residence (bilateral interbank claims/liabilities)

The LBSR provide an instrument breakdown of claims/liabilities of resident banks in a reporting country, together with a full counterparty country and sector breakdowns, and a breakdown by currency. This mirror exercise makes use of only the LBSR loans and deposits data, and consists of a comparison between interbank claims and interbank liabilities.

If the LBSR are internally consistent, the claims of reporting banks in country "*i*" on counterparty banks in country "*j*" should be a good proxy of the liabilities of reporting banks in country "*j*" to banks in country "*i*", and vice-versa.⁴ From the perspective of country "*i*", the tests can be described as:

and

Interbank liabilities $_{i,j}^{LBSR} \approx Interbank \ claims_{j,i}^{LBSR}$

The above comparison is only possible among LBSR reporting countries. We use the reported bilateral positions (ie country i vis-à-vis country j) but we aggregate these for presentation purposes to the total positions (ie country i vis-à-vis all other countries). The total net interbank claims and liabilities of banks in all reporting countries are defined by:

Net interbank claims
$$= \sum_{i=1}^{x} \left[\sum_{\substack{j=1\\i\neq i}}^{x} (Claims_i^j - Liabilities_j^i) \right]$$

and

Net interbank liabilities
$$= \sum_{i=1}^{x} \left[\sum_{\substack{j=1\\i\neq j}}^{x} (Liabilities_{i}^{j} - Claims_{j}^{i}) \right]$$

where the inner sum represents net interbank claims/liabilities for reporting country *i* and *x* is the number of reporting countries (quarterly). The value of *x* has changed over the years due to additions of LBSR reporting countries.⁵

Tables 1 and 2 illustrate how net interbank claims and liabilities in our exercise were derived from the underlying bilateral positions. For simplicity, we assume that there are only three reporting countries: Austria, Belgium and Portugal. Table 1 identifies <u>bilateral</u> claims (loans) and liabilities (deposits) of banks in these reporting countries vis-à-vis banks in the other two reporting countries.⁶ Using these underlying data, aggregated interbank positions and net positions are derived

⁴ According to the valuation principles defined in the reporting guidelines, loans (both claims and liabilities) should be valued in accordance with the reporting country's accounting standards and, in principle, at nominal (or contractual) values. It is recognised, however, that national accounting rules may require different valuation methods for particular positions.

⁵ x = 38 in 2004, 39 in 2005/2006, 40 in 2007, 41 in 2008, 42 in 2009, 43 in 2010 to 2014, 45 in 2015 and 47 in 2016/17.

⁶ The actual reported bilateral positions are unpublished and mostly either restricted or confidential. One could, however, refer to bilateral data published in Table A6.2 as a starting point For example, the link

in Table 2. As shown in the bolded rows of Table 2, the total of net interbank claims across all countries combined must be equal to the total net liabilities, even when the net interbank claims/liabilities for individual countries are non-zero.

Importantly, the above relationship holds only when all banks in country *i* and country *j* report complete data. This is often not the case. For example, banks in country *i* may have claims on banks in country *j* that are not part of country *j*'s reporting population. In addition, there is an asymmetry in the LBS reporting concepts that render a perfect matching for all countries impossible. Specifically, reporting banks in country *i* include their positions vis-à-vis the central bank (official monetary authority) in country *j* in their positions on the "bank sector" in country *j*, even though the country *j* central bank is not part of country *j*'s reporting population.⁷ Therefore, a fair comparison between interbank claims and liabilities is valid only if the counterparty bank sector excludes positions vis-à-vis central banks.

Illustration of bilatera In USD billions	Table 1						
Reporting country	Counterparty country	Claims	Liabilities				
AT: Austria	PT: Portugal	10	15				
AT: Austria	BE: Belgium	15	12				
BE: Belgium	AT: Austria	20	16				
BE: Belgium	PT: Portugal	25	28				
PT: Portugal	AT: Austria	15	24				
PT: Portugal	BE: Belgium	35	28				
Total		120	123				
¹ Numbers are for illustration o	¹ Numbers are for illustration only.						

Prior to Q4 2013, such an exclusion was possible only at the level of aggregate cross-border positions.⁸ The importance of positions vis-à-vis central banks in the reconciliation of interbank claims/liabilities is demonstrated with actual reported data in Table 3, where the names of the reporting countries have been masked using RC1 (one reporting country) and "Five RCs" (aggregate of five reporting countries). It shows that either "Five RCs" or "RC6" is under- or over-reporting interbank claims and liabilities by either including or excluding their positions vis-a-vis counterparty central banks. True reconciliation requires a deeper investigation. From Q4 2013 onwards, with the reporting of enhanced breakdowns in the LBS, a more nuanced reconciliation became possible since banks started to report subsectors for bank counterparties (related office, central banks and interbank or unrelated banks) and for non-bank counterparties (financials and non-financials).

<u>https://stats.bis.org/statx/srs/table/A6.2?c=US&p=</u> provides loans and deposits (claims/liabilities) of banks in different reporting countries vis-à-vis counterparties in the United States. One could derive positions vis-à-vis counterparty sector "Bank" as the difference between "All sectors" and "Non-banks".

⁷ The data structure definition (DSD) for the LBS is available at <u>www.bis.org/statistics/dsd_lbs.pdf#page=2</u>.

⁸ There have been few analyses that considered this aspect when using the aggregate level data on interbank claims/liabilities. See Committee on the Global and Financial System (CGFS) Stage 1 and 2: "Improving the BIS international banking statistics", CGFS Papers, no 47, BIS, November 2012.

In USD billions			Table 2						
Reporting country (net interbank claims)	Reported claims [1]	Mirror liabilities ¹ [2]	Net claims (Gap) [3] =[1]+[2]						
AT: Austria	25	-40	-15						
BE: Belgium	45	-40	+5						
PT: Portugal	50	-43	+7						
Total	120	-123	-3						
Reporting country	Reported liabilities	Mirror claims ²	Net liabilities (Gap)						
(net interbank liabilities)	[4]	[5]	[6]=[4]+[5]						
AT: Austria	27	-35	-8						
BE: Belgium	44	-50	-6						
PT: Portugal	52	-35	+17						
Total	123	-120	+3						
1 Comparable liabilities of other co	1 Comparable liabilities of other countries. 2 Comparable claims of other countries.								

Illustration for derived total and net interbank claims and liabilities

Positions vis-à-vis counterparty bank sector and, of which, central bank						
Actual reported posit	tions, as of Q4 2017, in USD millions		Table 3			
Position	Reporting	Interbank sector	Interbank sector			
POSITION	Countries	including CBs	excluding CBs			
Claims	RC1 on Five RCs	41,327.8	20,579.2			
Liabilities	Five RCs to RC1	45,455.9	20,814.4			
Gap in interbank clai	ms of RC1 on Five RCs	-4,128.1	-235.2			
Desition	Reporting	Interbank sector	Interbank sector			
POSITION	countries	including CBs	excluding CBs			
Liabilities	RC1 to Five RCs	30,216.8	30,096.8			
Claims	Five RCs on RC1	60,988.6	32,712.2			
Gan in interbank liat	pilities of RC1 to Five RCs	-30.771.9	-2.615.4			

Note: Reporting country names are anonymised using positions of reporting country (RC1) vis-à-vis aggregate of selected five counterparty reporting countries ("Five RCs"); amounts in the table may differ from published ones due to revisions.



Total cross-border interbank claims and interbank liabilities¹

Excluding positions vis-à-vis central banks

¹ Interbank positions of banks in 44 reporting countries; CN, PH and RU started reporting after 2011 and are excluded. ² Sum of all bilateral interbank claims among 44 reporting countries (ie conceptually each of 44 reporting countries could have interbank claims on other 43 counterparty reporting countries). ³ Sum of all bilateral interbank liabilities among 44 reporting countries. ⁴ Net claims (=total interbank claims minus total interbank liabilities) as a percentage of total interbank claims; see Tables 1 and 2 above. Sources: BIS LBSR (QR March 2019 release); authors' calculations.

Our analysis below thus excludes banks' positions vis-à-vis central banks for those bilateral pairs where the complete data are available.⁹ Statistical Tables A1.1 –A1.6 in the Annex 1 show the results by reporting country for (a) positions in all currencies, (b) positions denominated in US dollars and (c) positions denominated in euro¹⁰. These six tables show the comparison of net bilateral interbank claims and liabilities for the set of 44 individual reporting countries between two periods, Q4 2011, before the CGFS enhancements, and Q4 2017 when the enhancements had been implemented.¹¹ Between these dates, the size of the differences in net interbank claims in all currencies (summed across all reporting countries) narrowed from –\$322.8 billion to –\$167.5 billion, or from 2.2% of the stock of net interbank claims to 1.6% (Annex 1, Table A1.1).

Graph 1 provides a global overview, by showing comparable total cross-border interbank claims and interbank liabilities among reporting countries, in all currencies (top-panel) and in key currencies (middle and bottom panels). If the data were perfect, bilateral interbank claims would match the corresponding interbank liabilities, and thus the aggregate discrepancy (red lines) would be zero. However, inconsistencies arise for several reasons, including whether countries accurately report all required positions for all counterparty countries with the required currency breakdown.

Graph 2 shows the change between 2011 and 2017 in the degree to which the interbank positions reported by each reporting country matched the corresponding positions reported by their counterparties. Countries near the origin have small gaps, and thus well-matched data. Countries away from the origin but on the 45 degree line have gaps, but these gaps have not changed much between 2011 and 2017. Finally, countries far from origin and not on the 45 degree line have gaps that have changed size between these dates. Austria (AT), Australia (AU), Guernsey (GG) and Switzerland (CH) all stand out (see Table A1.13 in Annex 1 for country codes and names).

As a percentage (absolute) of country's total bilateral interbank claims/liabilities Graph 2 Gap in net interbank claims Gap in net interbank liabilities CH 60 60 • GG KR 45 45 • AT 2017 2017 MY. BR ·JE .⊆ .⊆ • PA 30 30 CA BH Gap i Gap • ZA BH JP IM 15 MN 15 ES • Δ11 FI AT FR IE •CH ID CY DI MO US • IP 0 0 FR 1 0 15 30 45 60 0 15 30 45 60 Gap in 2011 Gap in 2011 Sources: BIS LBSR (QR March 2019 release); authors' calculations.

Net interbank positions by reporting country 2011 versus 2017

- ⁹ According to the CGFS Stage 2 enhancements, sub-sectors within the banking sector should be reported in both the LBSR and the LBSN. A few countries started providing enhanced data with a complete country breakdown, while others do not report bilateral positions for confidentiality reasons.
- ¹⁰ Before the CGFS enhancements, the BIS prepared such reports for Total in all currencies and those denominated in US dollar and euro. The reports showed discrepancies in bilateral pairs but a fair comparison was not possible because the central bank sub-sector within the counterparty sector "Banks" was not reported.
- ¹¹ Three countries (China, Russia and the Philippines) joined after Q4 2011 and are excluded in these six tables.

The accuracy of the results for individual reporting countries depends on the availability of data reported for positions vis-à-vis central banks (CB), a subsector of the total banks sector. Most cross-border interbank claims (95%) and liabilities (92%) are vis-à-vis banks in other BIS reporting countries. However, the share positions vis-à-vis the CB subsector has been increasing over time as a share of total interbank loans and deposits. By end-2017, 3% of banks' cross-border interbank loan claims, and 7.3% of their cross-border deposit liabilities, were vis-à-vis CBs.

Differences identified in Tables A1.1 –A1.6 (Annex 1) indicate that the interbank assets/liabilities reported by countries may not be consistent with derived liabilities/assets provided by counterparty reporting countries. These differences can arise for many reasons, a few of which are listed below.

- Inconsistent reporting populations Banks in a reporting country may have claims on a specific bank in another reporting country that excludes that bank from its reporting population. Similarly, a few countries include building societies or post-banks in their population of reporting banks. However, for other reporting countries, these are non-bank counterparties. Non-bank financial institutions are also included in some reporting populations (eg development banks and export credit agencies).
- Positions vis-à-vis CB's Not all reporting countries disclose bilateral positions vis-à-vis central banks (official monetary authorities). These positions, if not reported separately (and thus able to be excluded), will widen the gap in the reconciliation of interbank positions.
- 3. Gaps in the instrument breakdown In some cases, there are gaps in the instrument breakdown as well as issues with the inclusion/exclusion of items within loans and deposits. For example, non-negotiable debt instruments should be reported under loans and deposits, not in debt securities. By contrast, loans that become negotiable should be reported under debt securities (provided that a secondary market exists for the trading of such loans).
- 4. Differences in valuation methods –According to the IBS guidelines, loans, deposits and other liabilities should be valued at nominal (or contractual) values rather than at market prices. However, it is recognised that national accounting rules may require different valuation methods for particular positions.
- 5. **Differences in banking laws** Treatment of instruments could differ due to accounting or other reasons (eg Islamic banking).
- 6. **Legal/confidentiality restrictions** Legal restrictions in some countries prevent them from disclosing bilateral loans/deposits even to the BIS.

C.2. Consistency between LBSR and the IMF IIP data (loans and deposits)

In this section, we examine the consistency between banks' loans and deposits in the LBSR (excluding vis-à-vis central banks) and the IMF IIP. Cross-border positions for both claims and liabilities on the accounts of reporting banks in the LBSR should be comparable with the country's IIP assets and liabilities for the functional category "other investment", which is comprised of currency, deposits and loans for deposit-taking corporations, excluding central banks. This test can be summarised as follows:

 $LBSR \ assets_i^{Loans \ and \ deposits} \approx IIP \ assets_i^{Loans \ and \ deposits}$ $LBSR \ liabilities_i^{Loans \ and \ deposits} \approx IIP \ liabilities_i^{Loans \ and \ deposits}$





¹ Claims and liabilities in the IIP comprise "Other investment" on account of currency and deposits, and loans of deposit corporations excluding central banks. In this graph we included total loans and deposits for the 24 countries for which IIP data have been available since Q4 2006. The countries are AT, AU, BE, BR, CA, CH, CL, DE, DK, ES, FI, FR, GB, GR, IN, IT, JP, KR, LU, NL, PA, SE, TR and US. The latest available IIP data for GB related to Q4 2015 and were copied to Q4 2016 and Q4 2017 (Table A1.13 in Annex 1 for country codes/names). A number of other countries that started reporting IIP data after Q4 2006 are excluded from this graph (details in Table A1.7 and Table A1.8, Annex 1). Sources: BIS LBSR (QR March 2019 release); IMF IIP (2018 M06 release); authors calculations.

Graph 3 shows the evolution of LBSR and IMF IIP loan claims and deposit liabilities between 2006 and 2017, for the aggregate of all reporting countries in the sample of 35 countries. It reveals that at the aggregate level, LBSR amounts are higher than the IIP amounts for both loans claims and deposit liabilities. A country level comparison for two different periods – Q4 2014 and Q4 2017 – shows that loan claims and deposit liabilities are not available in the IIP for 12 of 47 LBS reporting countries, and the LBSR is the only source for these countries.¹² Tables A1.7 and A1.8 (Annex 1) confirm that, except in some instances, data on loans and deposits between LBSR and the IIP reporting systems are complementary, and the differences are limited for most countries.

There are a number of benefits in such complementary data sources. For instance, the short-term and long-term split is not available in the LBSR but can be found in the IMF IIP data. And the LBSR brings not only a longer time series (Annex 1, Table A1.9 for claims as example) but also the breakdowns by currency, counterparty sector, and counterparty country.

The main reasons for the differences between the IIP and LBSR are listed below:

- 1. **Differences in reporting populations** The BIS LBSR relate to internationally active banks excluding central banks and the IMF IIP cover deposit-taking institutions excluding central banks.
- 2. **Mix of data sources** In some countries, the LBSR and IIP data are not compiled within the same unit in central banks. In these cases, the use of multiple data sources in the compilation process may lead to some differences.
- 3. Treatment of instruments In some cases, in the LBSR, negotiable loans that are known to be traded on secondary markets are included under loans and deposits rather than under debt securities. Similarly, there are cases where non-negotiable debt securities (eg non-negotiable certificate of deposits) are not included under loans and deposits but are treated debt securities.
- 4. **Country-specific factors:** Differences between the two sources can arise for idiosyncratic reasons related to the reporting practices in a particular country. For example, for Portugal, the differences

¹² The 12 LBSR reporting countries are BS, BH, CN, CW, GG, IM, JE, KY, MO, MY, SG and TW.

between the IIP and LBSR for claims mainly relate to the geographical breakdown of interest owed but not yet paid. The larger differences for Switzerland are related to the calculation from the monthly balance sheet survey, which includes more than 240 banks (larger than the number of reporting banks in the LBSR data). And the differences on the assets side for Canada are related to the inclusion of inter-office positions – equity and retained earnings in the LBSR loans and deposits. On the liabilities side, the discrepancy is caused by the exclusion of repo transactions in the IMF IIP and the inclusion of covered bonds in the LBSR.

D. Linking debt securities in the locational banking statistics to other statistics

In this section, we switch to a different set of instruments, debt securities (DS), and compare the consistency of the LBSR with three other datasets that also track debt securities: (a) the IMF IIP data, the IMF CPIS data and the BIS International Debt Securities (IDS) statistics.

D.1. Comparing debt securities in the BIS locational banking statistics by residence and the IMF international investment positions

Cross-border debt securities claims should, in principle, be comparable between the BIS LBSR and the IMF IIP. The presumption in this case is that the cross-border debt securities assets of reporting banks in the LBSR should be similar to the portfolio investment net acquisition of financial assets amounts of deposit-taking corporations (excluding those of central banks) in the IIP data. Formally:

LBSR assets_i^{Cross-border debt securities} \approx IIP assets_i^{Debt securities}

The IMF IIP data on portfolio investment debt securities claims are available for 34 of the 47 LBSR reporting countries, with latest available data for Q4 2017 (2018 M06 release).¹³ In the LBSR, two jurisdictions (Bahrain and Curacao) of the remaining 13 countries do not report cross-border debt securities claims.

Graph 4 shows the relationship between the LBSR and IIP for two selected periods. It is noteworthy that almost all reporting countries are aligned between the two data sets. However, there are some exceptions for countries with larger LBSR and IIP amounts. In particular, the amounts differ by less than 5% for 15 countries. On the other hand, large differences exist for four countries (GB, KR, NO and US). A time series comparison shows high volatility in the data for the most recent quarters in a number of countries. A few large exceptions resulted in a broader gap in the total of 34 countries (Table A1.10, Annex 1). Nevertheless, the relatively good match between the two mirror sources for a large number of countries offers the added benefit that cross-border debt securities claims from the IIP are available with a maturity breakdown (short- and long-term).

¹³ IIP data on cross-border debt securities claims are not available for 13 LBS reporting countries (BH, BS, CA, CN, CW, GG, IM, JE, KY, MO, MY, SG and TW).

Cross-border debt securities claims between the BIS LBSR and the IMF IIP¹



¹ The IMF IIP data for debt securities claims are available for 34 of the 47 LBSR reporting countries. The graph shows data for 31 of the 34 countries, excluding JP, PH and RU (data for JP are not public whereas those for PH and RU are not available in Q4 2014). Further details are provided in the footnote of Table A1.10 (Annex 1). See Table A1.13 in Annex 1 for country codes/names.

Sources: BIS LBSR (QR March 2019 release); IMF IIP (2018 M06 release); authors calculations.

There are country-specific reasons for differences in the cross-border debt securities claims of deposit-taking corporations (excluding those of CBs). These include:

- 1. **Differences in reporting populations** While debt securities issued by internationally active banks are included in the LBS, the IIP covers those by all deposit-taking institutions excluding central banks.
- Mix of data sources In some countries, the LBS and IIP data are not compiled within the same unit in central banks. In these cases use of different or complementary data sources may cause some differences for one or more reasons.
- 3. **Treatment of instruments** It is possible that reporting entities incorrectly classify instruments. In particular, debt securities that are held on a custodial basis for customers or acquired without cash collateral should not represent on-balance sheet claims (or holdings of debt securities).

D.2. Comparing debt securities in the BIS locational banking statistics by residence and the IMF coordinated portfolio investment survey

This section examines the differences in banks' reported debt securities liabilities in the LBSR and the IMF CPIS data. The concepts of counterparty country and sector are identical between the LBSR and the CPIS (both follow the same BoP/IIP treatment), and the classification of instruments is almost the same. In both data sets, loans that have become negotiable instruments are reclassified from loans to debt securities.

However, there are some key conceptual differences between the LBSR and the CPIS. Reporting banks in the LBSR report their debt securities liabilities to resident and non-resident (cross-border) counterparties. A key problem is that, unlike for deposit liabilities, the issuer of a security (debtor) may not know the residency of the holder (foreign custodians or other intermediaries may hold the securities). When LBSR reporting banks do not know the residency of the holder, they report amounts against "unallocated by country". The CPIS does not suffer from this problem because the data are reported by the holder (creditor) of the securities. Specifically, a reporting economy provides data on its holdings of portfolio investment securities, separately for equity and investment fund shares, and

for long-term and short-term debt instruments. This information can thus be exploited to proportionally allocate the "unallocated" amounts in the LBSR to counterparty countries.

The CPIS was first conducted for end-December 1997, but the data are comparable annually from only from 2001 to 2012. From 2013 onwards, the CPIS data were published semi-annually (end-June and end-December). The coverage of reporting countries in the CPIS has increased over time. Comparing the two sources, we find that 44 of the 47 LBSR reporting countries provide CPIS data to the IMF. The two limitations of using the debt securities liabilities derived from the CPIS are that (a) only liabilities to holders in CPIS reporting countries are known; and (b) the derivation requires that reporting countries in the CPIS provide an issuer sector breakdown, which is an "encouraged" rather than "required" reporting item, and thus the coverage of banks' debt securities liabilities may be incomplete. It is possible to obtain the derived debt securities liabilities of 120 countries vis-à-vis holders in a maximum of 28 CPIS reporting economies. For example, one can identify the names of a maximum 28 counterparty countries that hold debt securities liabilities of banks located in Australia.

Due to the voluntary reporting of holdings of debt securities by issuer sector in the CPIS, we expect the totals in the LBSR data to be larger than those in the CPIS data. Specifically, the figure for total cross-border debt securities liabilities of reporting banks in the LBSR in all currencies is expected to be higher than the total derived from the CPIS reporting countries' holdings of debt securities that were issued by deposit-taking corporations (excluding central banks). Formally, we expect:

LBSR liabilities $_{i,j}^{Cross-border \ debt \ securities} > CPIS \ liabilities _{i,j}^{Derived \ debt \ securities}$

We compared data at end-December 2015 and end-December 2017¹⁴ (Graph D2) and we demonstrate the results by country in Table A1.11(Annex 1). The gap in the partially reported counterparty country breakdown between the CPIS and LBSR has increased from \$142 billion in Q4 2015 to \$268 billion in Q4 2017. Moreover, the counterparty breakdowns within the LBSR are also underreported by almost 50% of the total cross-border amount (columns 3 and 4 versus columns 7 and 8).

We also investigated the gap between the LBSR and CPIS for the same set of 47 LBSR reporting countries. The derived debt securities liabilities of banks from the CPIS should be lower in value when compared with the reported data in the LBSR, because the number of reporting countries providing the issuing sector breakdown is limited in the CPIS.

Even though the match between the CPIS data and LBSR for banks' debt securities liabilities is not perfect, using these data in combination is still useful. As noted above, the CPIS help to fill in gaps in the LBSR. For example, the CPIS data suggest that banks in Bahrain, Curacao, Greece and Singapore issued debt security liabilities. But these LBSR reporting countries did not report such liabilities in the BIS LBSR. Similarly, several LBSR reporting countries – such as the Cayman Islands, Germany, South Africa and the United Kingdom – report large amounts for banks' cross-border debt security liabilities, but do not report a counterparty country breakdown. The CPIS data provide this breakdown, and can be used to allocate a portion of the roughly \$2.0 trillion in positions that are reported in the LBSR as "unallocated by location" (that is, the resident vs. non-resident (ie cross-border) split is not reported).¹⁵

¹⁴ The reason for the choice of the first period was that both China and Russia started reporting LBS data from Q4 2015.

¹⁵ The countries with large amounts of debt securities liabilities that are allocated as to "non-residents" but "unallocated by counterparty country" are Denmark, Japan, Luxembourg, the Netherlands, Sweden, Switzerland and Turkey.

Cross-border debt securities liabilities of banks by issuing country¹



¹ Countries having more than \$20 billion of debt securities outstanding either in the CPIS or in the LBSR and where data are available by individual counterparty country in both sources. See Table A1.13 in Annex 1 for country codes/names. Sources: BIS LBSR (QR March 2019 release); IMF CPIS survey (14 March 2019 release); authors' calculations.

We also note below some limitations and sources of differences between the two sources:

- 1. Frequency The CPIS is semi-annual (after 2013) whereas the LBSR are quarterly.
- Vintages The CPIS data are available much later than the LBSR data. Preliminary LBSR data are available about 120 days after the reference date but the CPIS data are available only about 250 days after.
- Reporting population In the CPIS data, only 28 countries (26 in Q4 2015) reported holdings of debt securities by issuing sector, whereas debt securities can be held by investors (creditors) in many more countries.
- 4. **Different sources** the main data sources for the LBSR are banks. For the CPIS, securities custodians and investment managers are the main data providers.
- 5. **Valuation** holdings data in the CPIS are valued at market price whereas liabilities in the LBSR are reported at book value. However, there are exceptions in the LBSR that some countries report debt security liabilities at market price (eg China, South Africa).

D.3. Comparing debt securities in the BIS locational banking statistics by residence and the BIS international debt securities statistics

This section compares banks' outstanding debt securities as captured in the LBSR and BIS International Debt Securities (IDS, see Section B.2). Whereas the CPIS data were collected from the holders of the securities, the IDS data is collected from the issuers of debt securities, ie banks themselves (Section D.2). In principle, the cross-border debt securities liabilities of banks in the LBSR should be comparable with the IDS issued by the bank sector in the same location (residence). This comparison will not be perfect, however, because some bonds are considered international but are held by residents rather than non-residents. And, ownership of a security can change overtime through secondary market transactions. In other words, the IDS thus serve as a comparator to the total debt securities reported by banks in the LBSR.

To match the LBSR data with the IDS data, we assume that LBSR reporting banks' *international* debt securities outstanding are the sum of debt securities liabilities to non-residents (cross-border) in

all currencies, and those to residents (and those unallocated by country) in foreign currencies. We exclude all debt securities in domestic currency that are reported vis-à-vis residents (and those unallocated by country). To be precise, the international debt securities liabilities (LBSR) of banks located in reporting country "i" should be similar to the outstanding amount of debt securities issued by public and private banks in the country "i" from the IDS database. In short:

LBSR liabilities; $^{international \ debt \ securities} \approx International \ liabilities; ^{debt \ securities}$

In Graph 6 we show aggregate results for various groups of countries. Countries that either joined as an LBS reporter after Q4 2005 or do not have issuance recorded in the IDS are excluded. Between 2008 and 2017, the difference between the IDS and LBSR data narrowed (from 29% to 49%), mainly due to the contribution of developed countries. Table A1.12 (Annex 1) shows the results for two specific time periods, Q4 2015 and Q4 2017. The reason for the choice of the first period was that China and Russia started reporting LBSR data in Q4 2015. The difference in the aggregates narrowed from –40.2% in 2015 to –38.8% in 2017. Under-reporting of debt securities in the LBSR seems to be a driving reason, as we explain below.



International debt securities liabilities of banks in LBSR reporting countries¹

¹ Countries that either joined as LBS reporter after Q4 2005 or do not have issuance recorded in the IDS are excluded; see Table A1.13 in Annex 1 for country codes/names...² Refers to the largest issuers and comprises banks in DE, FR, GB, NL and US. ³ Comprises AU, AT, BE, CA, CH, DK, ES, FI, IE, IT, JP, LU, NO, PT, and SE. ⁴ Comprises BS, BM, KY, HK, MO and PA. ⁵ Comprises BR, CL, TW, IN, MX, KR and TR. ⁶ Percentage differences in amounts between IDS and LBSR with respect to total IDS of the countries mentioned in the footnotes. Sources: BIS LBSR (QR March 2018 release); BIS IDS; authors' calculations.

Table A1.12 shows some large differences for specific countries. We examined why the amounts in the IDS are always higher for securities denominated in the euro (issued primarily by banks in the euro area), followed by those denominated in US dollars. One reason is that the LBSR do not explicitly track "international" debt securities, which is the focus of the IDS. Another is that the IDS do not include negotiable loans that are reported as debt securities liabilities in the LBSR. Similarly, in the IDS database, some domestic bonds in local currency are reported as being listed on more than one exchange (for example, in the domestic market and in Luxembourg or London), and other domestic bonds may be subject to a foreign governing law (issued abroad). In both cases, they are treated as IDS, whereas the LBSR excludes domestic local currency securities issued locally. Finally, among countries with a lower amount in the LBSR are some that probably underreport debt securities liabilities.

We summarise the main reasons for differences between the two data sets below:

- Differences in concepts The reporting concepts differ between the two sources. The IDS measure primary market issuance, whereas the LBSR liabilities are intended to capture holdings by residents separately from holdings by non-residents.
- 2. Differences in definitions The definition of "international" differs between the LBSR and the IDS. In the first case, cross-border securities plus local securities in foreign currencies are treated as international, whereas in the IDS debt securities are classified as international if at least one of the following characteristics differs from the country where the borrower resides: registration domain (ISIN), listing place or governing law.
- 3. **Sources of data** The LBSR data are reported by central banks, whereas IDS data are compiled from commercial sources.

E. Conclusion

Post-crisis enhancements approved by the Committee on the Global Financial System have spurred most of LBSR reporting countries to improve data quality and coverage. These countries have closed reporting gaps and provided new breakdowns, and a growing number now report bilateral data. The availability of granular data that can be shared at the international level offers the opportunity to go beyond the reconciliation of aggregated data and to drill-down for a better understanding of quality, coverage and consistency across datasets.

Gaps in comparable data items in one dataset can be effectively filled-in using mirror sources, provided that the coverage and concepts are not too different. This paper demonstrates conceptual and methodological details together with findings for various types of relationships across datasets. This work is intended to motivate similar mirror exercises within and across other datasets. The approach is also helpful for the estimation of financial assets/liabilities of the non-bank sectors (eg non-bank financial corporations and households).

There are limitations to using the LBSR to enhance or estimate the BoP/IIP data. While there should be a close convergence between the two sources at the aggregate level for loans (claims) and deposits (liabilities), there are still significant discrepancies at the country level. One important limitation is the differences in the periodicity and time lags in compilation: the BoP are monthly whereas the IIP and LBSR are quarterly. Another aspect relates to data granularity (eg sector and instrument breakdowns), which differs across datasets. In general, there is often a trade-off between higher granularity and confidentiality issues.

Other challenges also complicate comparisons across these datasets. For example, the "other adjustment" component of the IIP standard presentation is not available in the LBSR statistics. In addition, there are some negative values in the LBSR, mainly due to short-positions, which have to be further analysed to understand observed mismatches. Finally, the comparison or benchmarking is not possible for non-reporting countries.

Even though comparing these mirror sources is not always straight forward, this type of analysis helps to identify methodological differences and to correct data asymmetries. Further progress in this area will require that reporting countries coordinate and share information. This could include conducting independent but comparable exercises across countries. Or it could involve sharing more data (including metadata) across reporting agencies to undertake a joint analysis. The possible benefits of reconciliation efforts are greater if (a) data reporting countries provide not only the required breakdowns at a granular level but also the "encouraged" breakdowns; and (b) confidentiality restrictions do not preclude other data reporting agencies to have access to the data. Indeed, Recommendation II.20 of the *report on the implementation of the G-20 data gaps initiative* clearly recognises the need to increase data sharing and ease confidentiality restrictions. The success of mirror

data initiatives will require coordination across data reporting central banks, statistical agencies and international organisations (eg BIS, IMF, OECD, World Bank). For its part, the IFC is actively seeking to promote data sharing among its members.

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Annex 1: Statistical tables for Sections C and D

Table Number	Description
Table A1.1	Matching bilateral interbank claims in the LBSR, total in all currencies
Table A1.2	Matching bilateral interbank liabilities in the LBSR, total in all currencies
Table A1.3	Matching bilateral interbank claims in the LBSR , denominated in US dollar
Table A1.4	Matching bilateral interbank liabilities in the LBSR , denominated in US dollar
Table A1.5	Matching bilateral interbank claims in the LBSR , denominated in euro
Table A1.6	Matching bilateral interbank liabilities in the LBSR , denominated in euro
Table A1.7	BIS LBSR vs IMF IIP – loans claims of deposit-taking corporations except central banks
Table A1.8	BIS LBSR vs IMF IIP – deposit liabilities of deposit-taking corporations excl. central banks
Table A1.9	LBSR vs IMF IIP – loans and deposits of banks located in Portugal
Table A1.10	BIS LBSR vs IMF IIP – cross-border debt securities claims of deposit-taking corporations excl. central banks
Table A1.11	BIS LBSR vs IMF CPIS – counterparty country breakdown of cross-border debt securities liabilities between the BIS LBSR and the IMF CPIS
Table A1.12	BIS LBSR vs BIS IDS – international debt securities liabilities
Table A1.13	ISO codes and country/jurisdiction names

Matching bilateral interbank claims in the LBSR, total in all currencies¹

Amounts in USD billions

Table A	1.	1
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		End-	2011			End-	2017	
Reporting country (ISO Code)	Reported claims ² [1]	Mirror liabilities ³ [2]	Net claims (Gap)	% Net claims [4]=	Reported claims ² [5]	Mirror liabilities ³ [6]	Net claims (Gap)	% Net claims [8]=
			[3]=[1]+[2]	[3]*100/[1]			[7]=[5]+[6]	[7]*100/[5]
Total	14,529.6	-14,852.3	-322.8	-2.2	10,480.0	-10,647.5	-167.5	-1.6
AT	71.7	-70.2	1.5	2.1	37.2	-55.3	-18.1	-48.7
AU	72.6	-120.7	-48.1	-66.2	115.7	-133.6	-17.9	-15.5
BE	349.4	-318.4	31.0	8.9	224.7	-215.4	9.2	4.1
ВН	39.2	-23.9	15.3	39.1	29.1	-22.6	6.5	22.4
BM	4.5	-10.5	-6.0	-132.8	2.6	-2.5	0.1	3.4
BR	38.0	-28.8	9.2	24.2	25.8	-16.0	9.8	37.9
BS	539.6	-507.1	32.5	6.0	81.0	-87.5	-6.4	-7.9
CA	262.1	-174.7	87.4	33.3	268.8	-182.6	86.2	32.1
СН	551.0	-662.1	-111.1	-20.2	200.7	-350.0	-149.3	-74.4
CL	3.5	-17.4	-13.9	-399.3	3.3	-8.0	-4.7	-139.3
CW	7.1	-80.2	-73.1	-1,024.7	4.8	-7.5	-2.7	-56.9
CY	24.8	-24.9	-0.1	-0.4	5.7	-6.4	-0.6	-10.8
DE	1,074.7	-1,175.3	-100.5	-9.4	835.3	-853.1	-17.8	-2.1
DK	94.8	-101.8	-7.0	-7.4	134.5	-125.2	9.2	6.9
ES	204.3	-200.9	3.5	1.7	139.6	-119.2	20.4	14.6
FI	69.0	-68.6	0.4	0.5	43.3	-45.9	-2.6	-6.0
FR	1,201.1	-1,081.5	119.6	10.0	818.3	-856.1	-37.7	-4.6
GB	2,890.7	-3,097.1	-206.3	-7.1	2,280.6	-2,250.8	29.8	1.3
GG	109.1	-110.7	-1.6	-1.5	93.9	-91.8	2.0	2.2
GR	72.4	-73.2	-0.8	-1.1	14.8	-14.9	-0.1	-0.7
НК	362.2	-345.7	16.5	4.6	489.3	-472.9	16.4	3.4
ID	9.3	-9.4	-0.1	-0.9	10.5	-11.8	-1.4	-13.1
IE	222.5	-234.0	-11.5	-5.2	120.5	-131.0	-10.5	-8.7
IM	63.1	-52.7	10.4	16.4	36.0	-28.5	7.4	20.7
IN	13.6	-15.1	-1.4	-10.6	19.7	-40.3	-20.6	-104.5

¹ Bilateral positions of 44 BIS reporting countries, excluding CN, PH and RU. These three countries (CN, PH and RU) were excluded from bilateral pairs in both periods (Q4 2011 and Q4 2017). Of the 44 countries, net interbank claims improved for 26 countries between 2011 and 2017. ² Total bilateral loans (claims) of reporting banks in a country (say AT) on all banks in other 43 LBSR countries, excluding claims on central banks. ³ Total bilateral deposit liabilities to all banks in a country (say AT) by reporting banks in other 43 LBSR countries, excluding liabilities to central bank.

Matching bilateral interbank claims in the LBSR, total in all currencies¹ (cont.)

Amounts in USD billions

Table A1.1

		End-	2011			End-	2017	
Reporting country (ISO Code)	Reported claims ² [1]	Mirror liabilities ³ [2]	Net claims (Gap) [3]=[1]+[2]	% Net claims [4]= [3]*100/[1]	Reported claims ² [5]	Mirror liabilities ³ [6]	Net claims (Gap) [7]=[5]+[6]	% Net claims [8]= [7]*100/[5]
IT	208.9	-211.1	-2.2	-1.1	163.1	-162.6	0.5	0.3
JE	221.4	-225.2	-3.7	-1.7	125.4	-138.0	-12.6	-10.0
JP	612.1	-517.5	94.6	15.4	565.5	-542.1	23.4	4.1
KR	33.9	-49.5	-15.6	-45.9	38.0	-56.8	-18.9	-49.6
KY	1,070.6	-1,114.8	-44.3	-4.1	560.8	-552.5	8.3	1.5
LU	378.8	-487.3	-108.5	-28.6	288.8	-349.1	-60.3	-20.9
MO	26.6	-38.5	-11.9	-44.7	27.5	-29.0	-1.5	-5.4
MX	7.7	-60.3	-52.6	-683.7	12.1	-41.1	-29.0	-240.8
MY	23.2	-17.5	5.7	24.7	14.9	-8.8	6.1	41.0
NL	367.0	-367.4	-0.4	-0.1	386.1	-379.4	6.7	1.7
NO	67.4	-82.1	-14.7	-21.9	52.5	-58.1	-5.6	-10.6
PA	10.6	-10.1	0.5	4.9	13.4	-9.0	4.4	32.8
PT	56.9	-59.9	-3.0	-5.2	18.0	-17.8	0.2	0.9
SE	200.5	-187.1	13.4	6.7	236.4	-225.9	10.6	4.5
SG	274.1	-364.6	-90.5	-33.0	281.9	-352.0	-70.1	-24.9
TR	19.3	-24.7	-5.4	-28.1	18.6	-19.1	-0.5	-2.8
TW	43.5	-56.4	-12.9	-29.8	81.5	-86.9	-5.5	-6.7
US	2,534.1	-2,350.4	183.7	7.2	1,541.8	-1,467.7	74.1	4.8
ZA	22.3	-23.0	-0.7	-3.1	18.0	-22.5	-4.5	-25.0

¹ Bilateral positions of 44 BIS reporting countries, excluding CN, PH and RU. These three countries (CN, PH and RU) were excluded from bilateral pairs in both periods (Q4 2011 and Q4 2017). Of the 44 countries, net interbank claims improved for 26 countries between 2011 and 2017. ² Total bilateral loans (claims) of reporting banks in a country (say AT) on all banks in other 43 LBSR countries, excluding claims on central banks. ³ Total bilateral deposit liabilities to all banks in a country (say AT) by reporting banks in other 43 LBSR countries, excluding liabilities to central bank.

Matching bilateral interbank liabilities in the LBSR, total in all currencies¹

Amounts in USD billions

Table AT.2	Tabl	e A	1.2
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		End-2	2011			End-	2017	
Reporting country (ISO Code)	Reported liabilities ² [1]	Mirror claims ³ [2]	Net liabilities (Gap) [3]=[1]+[2]	% Net liabilities [4]= [3]*100/[1]	Reported liabilities ² [5]	Mirror claims ³ [6]	Net liabilities (Gap)	% Net liabilities [8]= [7]*100/[5]
Total	1/ 852 2	_1/ 520.6	222.8	2.2	10.647.5	_10 / 80 0	[/]=[J]+[0] 167 5	16
ΔΤ	74.2	-60 9	13 3	17 9	10,0 4 7.5 31.1	_10,400.0 _27.7	34	10.9
	110 5	-162.0	-51 5	-46.6	129 5	-167.5	-38.0	-29.4
BE	229.6	-201.1	28.4	12.4	170.1	-149.0	21.1	12.4
BH	58.4	-38.9	19.5	33.4	36.6	-24.6	12.0	32.7
BM	1.1	-7.4	-6.3	-557.1	0.0	-1.8	-1.8	
BR	103.9	-94.3	9.6	9.3	102.9	-74.0	28.9	28.1
BS	434.4	-446.8	-12.4	-2.8	65.0	-56.3	8.7	13.4
CA	249.3	-227.6	21.7	8.7	193.4	-199.6	-6.2	-3.2
СН	341.2	-427.8	-86.6	-25.4	327.6	-346.2	-18.6	-5.7
CL	6.0	-22.7	-16.7	-279.1	13.0	-20.6	-7.7	-59.1
CW	8.2	-6.9	1.3	15.8	5.7	-4.4	1.2	21.3
CY	26.9	-27.4	-0.5	-1.7	1.5	-1.2	0.4	24.9
DE	702.0	-769.4	-67.4	-9.6	672.6	-684.3	-11.8	-1.8
DK	128.9	-110.1	18.8	14.6	86.0	-82.5	3.5	4.0
ES	389.5	-352.0	37.5	9.6	205.7	-157.7	48.0	23.3
FI	179.0	-148.4	30.6	17.1	112.9	-99.8	13.2	11.7
FR	1,240.5	-935.6	304.9	24.6	793.2	-913.9	-120.6	-15.2
GB	3,042.5	-3,113.9	-71.4	-2.3	1,820.2	-1,734.9	85.2	4.7
GG	81.3	-82.7	-1.4	-1.8	62.7	-28.2	34.6	55.1
GR	51.8	-45.7	6.0	11.6	20.5	-14.2	6.3	30.7
НК	368.3	-329.0	39.4	10.7	410.1	-399.3	10.8	2.6
ID	12.4	-26.5	-14.0	-112.7	18.6	-22.5	-3.9	-21.1
IE	347.0	-264.4	82.5	23.8	102.3	-108.8	-6.5	-6.4
IM	11.2	-11.9	-0.7	-6.4	6.8	-5.4	1.4	20.4
IN	14.0	-96.5	-82.5	-590.2	14.6	-71.2	-56.5	-386.1

¹ Bilateral positions of 44 BIS reporting countries, excluding CN, PH and RU. These three countries (CN, PH and RU) were excluded from bilateral pairs in both periods (Q4 2011 and Q4 2017). Of the 44 countries, net interbank liabilities improved for 27 countries between 2011 and 2017. ² Total bilateral deposit liabilities of reporting banks in a country (say AT) to all banks in other 43 LBSR countries, excluding liabilities to central banks. ³ Total bilateral claims (loans) on all banks in a country (say AT) by reporting banks in other 43 LBSR countries, excluding claims on central banks.

Net bilateral interbank liabilities in the LBSR, total in all currencies¹(cont.)

Amounts in USD billions

	Та	ble	A	1.2
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	End-2011				End-2017			
Reporting country (ISO Code)	Reported liabilities ² [1]	Mirror claims ³ [2]	Net liabilities (Gap) [3]=[1]+[2]	% Net liabilities [4]= [3]*100/[1]	Reported liabilities ² [5]	Mirror claims ³ [6]	Net liabilities (Gap) [7]=[5]+[6]	% Net liabilities [8]= [7]*100/[5]
IT	402.4	-394.0	8.4	2.1	264.9	-277.0	-12.1	-4.6
JE	85.6	-92.1	-6.5	-7.6	42.3	-26.2	16.1	38.1
JP	781.9	-579.9	202.0	25.8	1,038.4	-841.4	197.0	19.0
KR	112.5	-111.4	1.1	1.0	33.6	-94.8	-61.2	-181.9
KY	831.6	-870.4	-38.8	-4.7	512.2	-500.7	11.5	2.2
LU	382.6	-452.0	-69.4	-18.1	239.8	-210.0	29.8	12.4
МО	16.9	-14.3	2.6	15.2	20.5	-18.5	2.0	9.7
MX	15.0	-28.4	-13.4	-89.8	5.2	-17.0	-11.8	-228.6
MY	33.0	-22.4	10.5	32.0	43.3	-35.3	8.1	18.6
NL	451.7	-495.7	-44.0	-9.7	377.5	-416.4	-38.9	-10.3
NO	127.8	-148.7	-20.8	-16.3	134.0	-143.9	-10.0	-7.4
PA	3.8	-10.7	-6.9	-182.4	5.0	-8.7	-3.7	-73.3
PT	106.3	-108.0	-1.8	-1.7	27.7	-30.1	-2.4	-8.8
SE	164.4	-143.6	20.8	12.6	158.6	-170.7	-12.1	-7.6
SG	305.6	-430.6	-125.0	-40.9	369.4	-461.5	-92.2	-25.0
TR	55.9	-57.9	-2.0	-3.5	72.0	-73.8	-1.9	-2.6
TW	56.5	-62.2	-5.7	-10.0	90.1	-83.9	6.2	6.9
US	2,694.5	-2,484.2	210.3	7.8	1,796.4	-1,658.8	137.6	7.7
ZA	12.3	-13.2	-0.9	-7.7	14.0	-15.7	-1.6	-11.7

¹ Bilateral positions of 44 BIS reporting countries, excluding CN, PH and RU. These three countries (CN, PH and RU) were excluded from bilateral pairs in both periods (Q4 2011 and Q4 2017). Of the 44 countries, net interbank liabilities improved for 27 countries between 2011 and 2017. ² Total bilateral deposit liabilities of reporting banks in a country (say AT) to all banks in other 43 LBSR countries, excluding liabilities to central banks. ³ Total bilateral loans (claims) on all banks in a country (say AT) by reporting banks in other 43 LBSR countries, ESR countries, excluding claims on central banks.

Matching bilateral interbank claims in the LBSR, denominated in US dollar¹

Amounts in USD billions

		End-	2011			End-	2017	
Reporting country (ISO Code)	Reported claims ² [1]	Mirror liabilities ³ [2]	Net claims (Gap) [3]=[1]+[2]	% Net claims [4]=[3]*100 /[1]	Reported claims ² [5]	Mirror liabilities ² [6]	Net claims (Gap) [7]=[5]+[6]	% Net claims [8]= [7]*100/[5]
Total	7,435.6	-7,494.1	-58.5	-0.8	5,500.5	-5,795.7	-295.3	-5.4
AT	12.1	-14.1	-2.0	-16.7	4.2	-22.5	-18.3	-432.7
AU	21.9	-56.9	-34.9	-159.4	73.8	-80.0	-6.2	-8.4
BE	63.4	-53.8	9.5	15.0	53.0	-45.7	7.3	13.8
BH	24.3	-15.6	8.7	35.7	19.3	-14.1	5.2	26.9
BM	2.8	-5.5	-2.8	-99.7	1.8	-1.8	-0.1	-3.7
BR	20.3	-24.5	-4.2	-20.8	14.8	-14.6	0.1	0.9
BS	508.5	-482.2	26.2	5.2	68.9	-76.4	-7.5	-10.8
CA	208.1	-139.2	68.9	33.1	201.8	-150.7	51.1	25.3
СН	258.7	-250.1	8.6	3.3	103.1	-222.1	-119.0	-115.5
CL	3.3	-13.0	-9.7	-297.6	2.7	-7.2	-4.5	-165.8
CW	2.1	-21.6	-19.4	-910.3	2.9	-6.9	-4.0	-139.3
CY	6.1	-6.0	0.0	0.2	2.1	-2.4	-0.3	-14.3
DE	246.1	-268.3	-22.2	-9.0	285.6	-315.7	-30.1	-10.5
DK	8.8	-10.1	-1.3	-15.4	14.5	-9.4	5.0	34.7
ES	29.9	-31.0	-1.1	-3.8	33.4	-34.4	-0.9	-2.8
FI	25.5	-24.3	1.2	4.9	11.2	-9.1	2.1	18.7
FR	302.7	-282.2	20.5	6.8	230.5	-251.1	-20.6	-8.9
GB	1,129.8	-1,284.0	-154.2	-13.6	911.8	-1,064.6	-152.7	-16.7
GG	45.3	-42.2	3.1	6.8	51.0	-45.1	5.8	11.4
GR	5.2	-5.8	-0.7	-12.6	0.8	-0.8	-0.1	-9.3
НК	233.7	-219.3	14.4	6.2	304.3	-291.4	12.9	4.3
ID	7.6	-8.0	-0.4	-5.8	8.1	-9.8	-1.7	-21.6
IE	42.8	-46.0	-3.2	-7.5	30.0	-31.2	-1.2	-4.2
IM	13.2	-8.9	4.4	33.0	11.1	-4.0	7.1	64.3
IN	8.5	-11.4	-2.9	-33.8	17.6	-32.5	-14.9	-84.3

¹ Bilateral positions of 44 BIS reporting countries, excluding CN, PH and RU. These three countries (CN, PH and RU) were excluded from bilateral pairs in both periods (Q4 2011 and Q4 2017). Of the 44 countries, net interbank claims improved for 24 countries between 2011 and 2017. ² USD-denominated total bilateral loans (claims) of reporting banks in a country (say AT) on all banks in other 43 LBSR countries, excluding claims on central banks. ³ USD-denominated total bilateral deposit liabilities to all banks in a country (say AT) by reporting banks in other 43 LBSR countries, excluding liabilities to central bank.

Sources: BIS LBSR (QR March 2019 release); authors' calculations.

Table A1.3

Matching bilateral interbank claims in the LBSR, denominated in US dollar¹

Amounts in USD billions

	End-2011					End-2017			
Reporting country (ISO Code)	Reported claims ² [1]	Mirror liabilities ³ [2]	Net claims (Gap)[3]=[1]+[2]	% Net claims [4]= [3]*100/[1]	Reported claims ² [5]	Mirror liabilities ³ [6]	Net claims (Gap) [7]=[5]+[6]	% Net claims [8]= [7]*100/[5]	
IT	22.4	-28.1	-5.7	-25.2	28.6	-32.0	-3.3	-11.7	
JE	88.8	-71.6	17.2	19.4	49.8	-50.3	-0.6	-1.1	
JP	237.0	-258.0	-21.0	-8.8	369.3	-362.2	7.0	1.9	
KR	28.5	-37.0	-8.5	-29.7	33.3	-49.3	-16.0	-48.0	
KY	998.3	-1,015.5	-17.2	-1.7	545.0	-526.6	18.4	3.4	
LU	74.8	-140.8	-66.0	-88.2	90.5	-158.3	-67.8	-74.8	
MO	-1.5	-12.5	-14.0	916.8	15.0	-17.3	-2.3	-15.1	
MX	5.3	-37.4	-32.1	-604.6	10.9	-37.2	-26.3	-241.6	
MY	16.6	-13.7	2.8	17.2	9.2	-6.7	2.5	27.2	
NL	112.4	-108.3	4.0	3.6	154.0	-151.6	2.3	1.5	
NO	16.0	-20.0	-4.1	-25.5	29.4	-19.8	9.6	32.6	
PA	10.6	-8.9	1.7	16.4	13.4	-8.4	5.0	37.4	
PT	8.3	-8.1	0.2	2.0	3.5	-3.6	-0.1	-2.0	
SE	37.9	-35.5	2.4	6.4	36.3	-36.8	-0.5	-1.4	
SG	189.4	-233.8	-44.4	-23.5	189.9	-248.9	-59.0	-31.0	
TR	11.8	-14.7	-2.9	-24.6	10.4	-10.1	0.3	2.7	
TW	30.5	-41.7	-11.2	-36.7	47.5	-53.2	-5.7	-12.0	
US	2,303.8	-2,069.0	234.8	10.2	1,394.6	-1,264.8	129.8	9.3	
ZA	14.3	-15.4	-1.2	-8.1	11.6	-15.0	-3.4	-29.1	

Table A1.3

¹ Bilateral positions of 44 BIS reporting countries, excluding CN, PH and RU. These three countries (CN, PH and RU) were excluded from bilateral pairs in both periods (Q4 2011 and Q4 2017). Of the 44 countries, net interbank claims improved for 24 countries between 2011 and 2017. ² USD-denominated total bilateral loans (claims) of reporting banks in a country (say AT) on all banks in other 43 LBSR countries, excluding claims on central banks. ³ USD-denominated total liabilities to all banks in a country (say AT) by reporting banks in other 43 LBSR countries, excluding liabilities to central bank.

Matching bilateral interbank liabilities in the LBSR, denominated in US dollar¹

Amounts in USD billions

Table A1.4

		End-	2011			End-	2017	
Reporting country (ISO Code)	Reported liabilities ² [1]	Mirror claims ³ [2]	Net liabilities (Gap) [3]=[1]+[2]	% Net liabilities [4]= [3]*100/[1]	Reported liabilities ² [5]	Mirror claims ³ [6]	Net liabilities (Gap)[7]=[5]+[6]	% Net liabilities [8]= [7]*100/[5]
Total	7,494.1	-7,435.6	58.5	0.8	5,795.7	-5,500.5	295.3	5.1
AT	10.5	-7.7	2.8	26.8	3.4	-2.8	0.6	17.0
AU	62.5	-86.2	-23.6	-37.8	82.8	-109.8	-27.0	-32.6
BE	56.1	-56.9	-0.8	-1.5	63.3	-53.7	9.5	15.1
BH	45.2	-29.5	15.7	34.7	28.5	-18.3	10.3	36.0
BM	0.7	-4.0	-3.3	-462.3	0.0	-0.6	-0.6	
BR	89.3	-86.1	3.2	3.6	93.0	-70.5	22.5	24.2
BS	428.2	-419.2	9.0	2.1	55.1	-33.4	21.8	39.5
CA	179.6	-152.5	27.1	15.1	144.0	-136.1	7.9	5.5
СН	114.2	-149.4	-35.2	-30.8	164.1	-167.5	-3.3	-2.0
CL	5.7	-16.6	-10.8	-189.4	12.6	-16.6	-4.0	-31.3
CW	1.7	-5.2	-3.5	-201.8	2.6	-3.6	-1.0	-38.4
CY	0.6	-0.5	0.1	10.7	0.3	-0.3	0.0	-5.3
DE	90.4	-95.9	-5.5	-6.1	102.9	-103.5	-0.6	-0.6
DK	19.2	-16.2	2.9	15.3	9.6	-6.2	3.4	35.8
ES	29.9	-27.1	2.8	9.3	21.9	-20.4	1.5	7.0
FI	49.5	-40.6	9.0	18.2	16.0	-13.5	2.5	15.8
FR	251.3	-192.8	58.5	23.3	219.2	-188.0	31.3	14.3
GB	1,257.6	-1,423.0	-165.4	-13.1	755.7	-858.3	-102.6	-13.6
GG	40.3	-39.9	0.4	1.0	48.5	-21.5	27.0	55.7
GR	16.6	-15.5	1.1	6.7	2.5	-1.1	1.4	56.2
НК	236.5	-211.3	25.2	10.6	288.0	-265.6	22.4	7.8
ID	10.8	-18.9	-8.1	-75.2	16.7	-18.4	-1.6	-9.8
IE	54.2	-45.5	8.7	16.0	30.7	-36.2	-5.5	-18.1
IM	3.8	-4.1	-0.4	-10.3	4.4	-2.6	1.8	40.6
IN	11.0	-76.0	-65.0	-588.9	13.3	-56.3	-42.9	-321.6

¹ Bilateral positions of 44 BIS reporting countries, excluding CN, PH and RU. These three countries (CN, PH and RU) were excluded from bilateral pairs in both periods (Q4 2011 and Q4 2017). Of the 44 countries, net interbank liabilities improved for 24 countries between 2011 and 2017. ² USD-denominated total bilateral deposit liabilities of reporting banks in a country (say AT) to all banks in other 43 LBSR countries, excluding liabilities to central banks. ³ USD-denominated total bilateral loans (claims) on all banks in a country (say AT) by reporting banks in other 43 LBSR countries, excluding claims on central banks.

Matching bilateral interbank liabilities in the LBSR, denominated in US dollar¹ (cont.)

Amounts in USD billions

	End-2011					End-	2017	
Reporting country (ISO Code)	Reported liabilities ² [1]	Mirror claims ³ [2]	Net liabilities (Gap) [3]=[1]+[2]	% Net liabilities [4]= [3]*100/[1]	Reported liabilities ² [5]	Mirror claims ³ [6]	Net liabilities (Gap) [7]=[5]+[6]	% Net liabilities [8]= [7]*100/[5]
IT	15.5	-14.7	0.8	5.3	19.8	-20.4	-0.5	-2.7
JE	41.4	-41.6	-0.1	-0.3	21.8	-7.4	14.3	65.9
JP	447.6	-334.6	113.0	25.2	682.0	-483.6	198.5	29.1
KR	86.0	-78.2	7.7	9.0	29.7	-76.3	-46.6	-156.8
KY	774.0	-791.5	-17.5	-2.3	478.7	-446.4	32.3	6.7
LU	65.0	-111.5	-46.6	-71.7	73.7	-52.9	20.8	28.3
MO	2.6	-6.1	-3.4	-128.6	9.5	-7.6	1.9	20.3
MX	8.3	-17.5	-9.2	-111.3	3.3	-11.4	-8.1	-241.2
MY	22.4	-13.5	8.8	39.5	34.4	-24.3	10.1	29.3
NL	77.5	-90.3	-12.8	-16.5	67.7	-87.0	-19.3	-28.5
NO	55.6	-59.3	-3.7	-6.6	56.1	-53.4	2.7	4.8
PA	3.8	-9.4	-5.6	-148.6	5.0	-8.3	-3.3	-65.9
PT	10.5	-8.6	1.9	18.5	2.4	-2.6	-0.1	-5.9
SE	56.8	-44.1	12.7	22.4	45.4	-48.5	-3.2	-7.0
SG	182.1	-270.8	-88.7	-48.7	238.3	-323.2	-84.9	-35.6
TR	30.8	-34.3	-3.5	-11.3	39.0	-42.9	-3.9	-9.9
TW	46.7	-50.8	-4.2	-8.9	77.5	-68.4	9.1	11.7
US	2,495.3	-2,231.6	263.7	10.6	1,723.1	-1,520.5	202.5	11.8
ZA	6.7	-6.5	0.1	1.7	8.9	-10.7	-1.8	-20.3

¹ Bilateral positions of 44 BIS reporting countries, excluding CN, PH and RU. These three countries (CN, PH and RU) were excluded from bilateral pairs in both periods (Q4 2011 and Q4 2017). Of the 44 countries, net interbank liabilities improved for 24 countries between 2011 and 2017. ² USD-denominated total bilateral deposit liabilities of reporting banks in a country (say AT) to all banks in other 43 LBSR countries, excluding liabilities to central banks. ³ USD-denominated total bilateral loans (claims) on all banks in a country (say AT) by reporting banks in other 43 LBSR countries, excluding claims on central banks.

Matching bilateral interbank claims in the LBSR, denominated in euro¹

Amounts in USD billions

	End-2011					End-2017			
Reporting country (ISO Code)	Reported claims ² [1]	Mirror liabilities ³ [2]	Net claims (Gap) [3]=[1]+[2]	% Net claims [4]= [3]*100/[1]	Reported claims ² [5]	Mirror liabilities ³ [6]	Net claims (Gap)[7]=[5]+[6]	% Net claims [8]= [7]*100/[5]	
Total	4,764.7	-5,054.1	-289.4	-6.1	3,191.8	-3,161.3	30.6	1.0	
AT	52.7	-46.8	5.9	11.2	30.0	-29.8	0.2	0.6	
AU	4.0	-16.8	-12.8	-322.4	5.6	-10.4	-4.8	-84.6	
BE	240.2	-228.1	12.1	5.0	147.0	-148.3	-1.3	-0.9	
BH	7.0	-4.9	2.0	29.3	3.3	-4.0	-0.7	-20.7	
BM	0.5	-2.4	-1.8	-352.0	0.5	-0.3	0.2	35.6	
BR	9.6	-2.4	7.1	74.7	8.8	-0.9	7.9	90.1	
BS	16.9	-11.7	5.2	31.0	3.9	-4.0	-0.2	-4.4	
CA	6.8	-17.1	-10.3	-149.9	7.6	-9.7	-2.1	-27.5	
СН	139.4	-186.2	-46.8	-33.5	45.7	-55.3	-9.6	-21.1	
CL	0.2	-2.7	-2.5	-1,666.9	0.4	-0.4	0.0	11.5	
CW	4.0	-35.7	-31.7	-796.2	1.6	-0.5	1.1	69.1	
CY	15.1	-15.1	0.0	0.3	3.1	-3.4	-0.3	-9.9	
DE	750.0	-803.3	-53.3	-7.1	490.4	-473.0	17.4	3.6	
DK	41.6	-48.3	-6.7	-16.0	57.9	-56.8	1.2	2.0	
ES	162.8	-160.4	2.4	1.5	95.1	-78.8	16.3	17.1	
FI	17.0	-20.3	-3.3	-19.6	23.8	-26.2	-2.4	-10.0	
FR	782.2	-704.8	77.5	9.9	458.6	-503.4	-44.9	-9.8	
GB	1,182.5	-1,244.3	-61.8	-5.2	946.4	-816.2	130.2	13.8	
GG	24.8	-28.8	-4.0	-16.2	14.0	-14.6	-0.6	-4.2	
GR	63.1	-63.0	0.1	0.1	12.0	-12.0	0.1	0.5	
НК	30.3	-39.8	-9.5	-31.2	44.2	-50.6	-6.4	-14.5	
ID	0.6	-0.6	0.1	14.0	1.0	-0.7	0.2	26.1	
IE	92.8	-100.7	-7.9	-8.5	60.9	-62.1	-1.2	-1.9	
IM	6.8	-4.5	2.3	34.5	3.6	-1.1	2.5	69.1	
IN	2.6	-1.0	1.6	61.1	0.7	-3.7	-3.0	-452.5	

¹ Bilateral positions of 44 BIS reporting countries, excluding CN, PH and RU. These three countries (CN, PH and RU) were excluded from bilateral pairs in both periods (Q4 2011 and Q4 2017). Of the 44 countries, net interbank claims improved for 26 countries between 2011 and 2017. ² EUR-denominated total bilateral loans (claims) of reporting banks in a country (say AT) on all banks in other 43 LBSR countries, excluding claims on central banks. ³ EUR-denominated total deposit liabilities to all banks in a country (say AT) by reporting banks in other 43 LBSR countries, excluding liabilities to central bank.

Sources: BIS LBSR (QR March 2019 release); authors' calculations.

Table A1.5

Matching bilateral interbank claims in the LBSR, denominated in euro¹(cont.)

Amounts in USD billions

End-2011 End-2017 Reporting Reported Mirror Net claims % Net Reported Mirror Net claims % Net country claims² liabilities³ (Gap) claims claims² liabilities³ (Gap) claims (ISO Code) [1] [2] [3]=[1]+[2] [4]= [5] [6] [7]=[5]+[6] [8]= [3]*100/[1] [7]*100/[5] IT 180.5 -172.7 7.9 4.4 126.7 -123.7 3.0 2.4 JE 54.0 -57.5 -3.5 -6.4 13.1 -12.0 1.2 9.0 JP 26.6 -67.7 -41.1 -154.6 20.5 -30.7 -10.3 -50.2 KR 2.4 -3.5 -1.1 -47.7 2.3 -2.2 0.1 4.0 KΥ 44.9 -55.8 -11.0 -24.4 7.0 -12.1 -5.1 -72.8 258.4 -300.8 -42.5 -16.4 154.2 -150.5 LU 3.6 2.4 15.7 9.7 -95.1 MO -6.0 61.6 0.8 -1.6 -0.8 MX 0.5 -10.9 -10.4 -2,270.1 0.3 -0.5 -0.2 -48.5 2.7 88.2 MY 1.2 -1.2 0.0 1.9 -0.3 2.4 NL 188.9 -210.4 -21.5 -11.4 167.1 -169.1 -2.0 -1.2 NO 37.4 -39.6 -2.2 -5.8 -23.1 -163.1 8.8 -14.3 ΡA 0.0 -0.7 -0.7 0.0 -0.5 -0.5 PT 47.1 -49.2 -2.1 -4.4 13.3 -13.1 0.2 1.7 SE 87.2 -86.0 1.2 1.3 123.0 -119.7 3.3 2.7 SG 11.9 -47.1 -35.1 -294.8 17.4 -41.2 -23.8 -136.9 TR 6.1 -5.9 0.2 5.6 -6.4 -0.8 -13.6 3.6 ΤW 3.2 -1.5 -45.8 4.0 -4.6 -0.6 -14.4 -4.6 US 141.5 -141.8 -0.3 -0.2 57.4 -81.9 -24.5 -42.8 ΖA 3.5 -3.3 0.3 7.3 1.5 -1.9 -0.4 -29.2

Table A1.5

¹ Bilateral positions of 44 BIS reporting countries, excluding CN, PH and RU. These three countries (CN, PH and RU) were excluded from bilateral pairs in both periods (Q4 2011 and Q4 2017). Of the 44 countries, net interbank claims improved for 26 countries between 2011 and 2017. ² EUR-denominated total bilateral loans (claims) of reporting banks in a country (say AT) on all banks in other 43 LBSR countries, excluding claims on central banks. ³ EUR-denominated total deposit liabilities to all banks in a country (say AT) by reporting banks in other 43 LBSR countries, excluding liabilities to central bank.

Matching bilateral interbank liabilities in the LBSR, denominated in euro¹

Amounts in USD billions

Table A1.6

		End-	2011			End-	2017	
Reporting country (ISO Code)	Reported liabilities ² [1]	Mirror claims ³ [2]	Net liabilities (Gap) [3]=[1]+[2]	% Net liabilities [4]= [3]*100/[1]	Reported liabilities ² [5]	Mirror claims ³ [6]	Net liabilities (Gap) [7]=[5]+[6]	% Net liabilities [8]= [7]*100/[5]
Total	5,054.1	-4,764.7	289.4	5.7	3,161.3	-3,191.8	-30.6	-1.0
AT	47.5	-44.3	3.2	6.7	26.6	-23.6	3.0	11.2
AU	7.4	-17.8	-10.4	-141.9	12.0	-19.2	-7.2	-59.9
BE	144.2	-118.3	25.9	18.0	85.9	-79.1	6.8	7.9
BH	6.9	-5.1	1.8	26.7	5.1	-3.5	1.6	30.7
BM	0.3	-1.4	-1.1	-398.2	0.0	-0.4	-0.4	
BR	8.1	-3.7	4.5	54.9	6.9	-1.5	5.4	78.5
BS	0.8	-5.7	-4.9	-615.9	3.8	-2.7	1.1	29.4
CA	9.0	-29.1	-20.1	-222.6	4.1	-10.8	-6.7	-161.2
СН	71.7	-73.8	-2.1	-2.9	37.0	-39.6	-2.6	-6.9
CL	0.1	-0.8	-0.7	-482.1	0.2	-0.2	0.0	6.3
CW	3.9	-1.4	2.6	65.5	2.3	-0.5	1.8	77.9
CY	24.9	-25.4	-0.5	-2.1	1.0	-0.6	0.4	38.3
DE	573.1	-607.6	-34.6	-6.0	526.0	-535.7	-9.8	-1.9
DK	45.9	-43.2	2.7	5.9	32.2	-36.2	-3.9	-12.2
ES	337.5	-302.4	35.2	10.4	179.4	-133.7	45.8	25.5
FI	103.1	-85.5	17.6	17.1	90.9	-78.4	12.5	13.7
FR	849.9	-656.4	193.5	22.8	467.3	-634.1	-166.9	-35.7
GB	1,091.9	-998.8	93.0	8.5	600.5	-476.7	123.8	20.6
GG	22.0	-22.1	0.0	-0.2	3.5	-0.7	2.8	79.2
GR	33.3	-28.8	4.5	13.6	17.9	-12.9	4.9	27.5
НК	39.0	-34.9	4.1	10.5	30.9	-34.6	-3.6	-11.8
ID	0.0	-1.0	-0.9	-2,779.4	0.2	-0.6	-0.4	-195.8
IE	192.1	-142.7	49.4	25.7	50.2	-50.0	0.2	0.5
IM	1.9	-2.8	-0.9	-48.4	0.7	-0.5	0.2	23.0
IN	1.0	-4.7	-3.6	-351.2	0.6	-3.5	-2.9	-489.3

¹ Bilateral positions of 44 BIS reporting countries, excluding CN, PH and RU. These three countries (CN, PH and RU) were excluded from bilateral pairs in both periods (Q4 2011 and Q4 2017). Of the 44 countries, net interbank liabilities improved for 24 countries between 2011 and 2017. ² EUR-denominated total bilateral deposit liabilities of reporting banks in a country (say AT) to all banks in other 43 LBSR countries, excluding liabilities to central banks. ³ EUR-denominated total bilateral claims (loans) on all banks in a country (say AT) by reporting banks in other 43 LBSR countries, excluding claims on central bank.

Matching bilateral interbank liabilities in the LBSR, denominated in euro¹(cont.)

Amounts in USD billions

Table A1.6

	End-2011				End-	2017		
Reporting country (ISO Code)	Reported liabilities ² [1]	Mirror claims ³ [2]	Net liabilities (Gap) [3]=[1]+[2]	% Net liabilities [4]= [3]*100/[1]	Reported liabilities ² [5]	Mirror claims ³ [6]	Net liabilities (Gap) [7]=[5]+[6]	% Net liabilities [8]= [7]*100/[5]
IT	380.9	-369.1	11.8	3.1	238.1	-250.5	-12.3	-5.2
JE	25.3	-28.7	-3.5	-13.7	3.5	-2.7	0.7	20.6
JP	42.8	-54.3	-11.5	-26.7	106.0	-89.8	16.2	15.3
KR	6.5	-10.0	-3.6	-55.0	1.8	-4.0	-2.2	-126.3
KY	31.8	-44.3	-12.5	-39.4	20.2	-27.6	-7.3	-36.3
LU	287.4	-310.5	-23.1	-8.0	139.7	-137.2	2.6	1.8
MO	5.8	-2.5	3.3	56.9	0.6	-0.6	0.0	5.1
MX	0.0	-1.8	-1.8	-8,100.0	0.1	-0.8	-0.8	-1,084.0
MY	1.2	-1.2	0.0	1.2	0.5	-1.7	-1.2	-236.1
NL	307.1	-328.5	-21.4	-7.0	265.9	-275.0	-9.1	-3.4
NO	16.4	-18.7	-2.3	-13.8	26.0	-26.9	-0.9	-3.6
PA	0.0	-0.7	-0.7	0.0	0.0	0.0	0.0	0.0
PT	94.9	-94.3	0.6	0.6	24.9	-27.1	-2.2	-9.0
SE	55.0	-49.6	5.3	9.7	42.6	-49.2	-6.6	-15.6
SG	52.1	-27.9	24.3	46.5	46.8	-31.9	14.9	31.8
TR	18.6	-15.3	3.3	17.6	27.2	-25.6	1.6	5.8
TW	1.0	-2.8	-1.7	-171.0	3.1	-2.2	0.9	28.5
US	110.5	-144.8	-34.3	-31.0	28.7	-58.9	-30.2	-105.4
ZA	1.1	-2.2	-1.1	-92.3	0.5	-0.8	-0.3	-57.0

¹ Bilateral positions of 44 BIS reporting countries, excluding CN, PH and RU. These three countries (CN, PH and RU) were excluded from bilateral pairs in both periods (Q4 2011 and Q4 2017). Of the 44 countries, net interbank liabilities improved for 24 countries between 2011 and 2017 ² EUR-denominated total bilateral deposit liabilities of reporting banks in a country (say AT) to all banks in other 43 LBSR countries, excluding liabilities to central banks. ³ EUR-denominated total bilateral claims (loans) on all banks in a country (say AT) by reporting banks in other 43 LBSR countries, excluding claims on central bank.

Country	Q4 2	014	Q4 2	Q4 2017		Difference (amount) (IIP – LBSR)		Differences (percentage)	
	IIP	LBSR	IIP	LBSR	Q4 2014	Q4 2017	Q4 2014	Q4 2017	
	[1]	[2]	[3]	[4]	[5]=[1]–[2]	[6]=[3]–[4]	[5]*100/[1]	[6]*100/[3]	
Total ²	15,173.7	16,220.8	14,810.1	16,161.4	-1,047.1	-1,351.3	-6.9	-9.1	
AU	236.8	187.0	236.2	240.1	49.8	-2.7	21.0	-1.7	
AT	214.2	211.5	166.5	163.6	2.7	2.9	1.2	1.7	
BE	367.8	372.0	338.8	340.0	-4.2	-2.9	-1.1	-0.4	
BM ³	3.0	4.6	2.6	3.6	-1.6	-1.0	-53.7	-40.5	
BR	17.1	46.8	8.5	26.0	-29.7	-17.5	-173.6	-205.3	
CA	257.7	419.0	347.9	537.6	-161.3	-189.7	-62.6	-54.5	
CL	9.1	9.6	7.0	7.5	-0.5	-0.5	-5.4	-7.8	
HK ⁴	825.3	859.8	967.0	974.6	-34.5	-7.6	-4.2	-0.8	
CY	26.1	26.5	17.8	19.4	-0.4	-1.6	-1.7	-8.9	
DK	153.1	149.1	193.1	189.4	4.0	3.7	2.6	1.9	
FI	129.3	128.7	49.0	49.0	0.6	0.0	0.5	0.1	
FR	1,441.7	1,457.9	1,456.8	1,474.7	-16.2	-17.9	-1.1	-1.2	
DE	1,594.9	1,594.2	1,443.8	1,442.9	0.7	0.9	0.0	0.1	
GR	38.0	36.5	21.4	20.8	1.5	0.6	4.0	2.6	
IN	11.4	31.1	20.3	60.5	-19.7	-40.2	-172.8	-198.6	
ID	9.7	9.3	11.6	11.2	0.4	0.4	4.4	3.4	
IE	220.0	220.0	191.8	194.9	0.0	-3.1	0.0	-1.6	
IT	234.2	226.4	247.8	249.0	7.8	-1.2	3.3	-0.5	
JP	690.5	688.5	758.2	784.5	2.0	-26.3	0.3	-3.5	
KR	117.5	136.3	134.4	157.9	-18.8	-23.5	-16.0	-17.5	
LU	531.3	531.5	479.5	479.4	-0.2	0.1	0.0	0.0	
MX	10.3	10.0	11.8	16.4	0.3	-4.6	3.0	-38.6	
NL	763.4	762.8	765.1	764.1	0.6	1.0	0.1	0.1	
NO	116.0	110.5	109.0	106.1	5.5	2.9	4.7	2.7	
PA	39.8	42.4	36.5	37.9	-2.6	-1.4	-6.4	-3.9	

BIS LBSR & IMF IIP: loans of deposit-taking corporations excl. central banks¹

Amounts in USD billions

Table A1.7

¹ Claims in IIP comprise "Other investments" on account of currency and deposits, and loans of deposit corporations excluding central banks, which is similar to LBSR instrument G "Loans and deposits" including currency balances. ² For the purposes of comparison, LBSR total in Q4 2014 includes IIP amounts for PH and RU as both countries started reporting after Q4 2014 (PH from Q4 2016 and RU from Q4 2015). ³ Reports IIP data at annual frequency (Q4 of each year). ⁴ Data for Q4 2017 relate to that of Q4 2016 for both LBSR and IIP (as IIP data not available for Q4 2017). ⁵ Data for Q4 2017 relate to that of Q4 2015 for both LBSR and IIP (as IIP data not available for Q4 2017).

BIS LBSR & IMF IIP: loans of deposit-taking corporations excl. central banks¹ (cont.)

Amounts in USD billions

Country	Q4 2014		Q4 2017		Difference (amount) (IIP – LBSR)		Differences (percentage)	
	IIP	LBSR	IIP	LBSR	Q4 2014	Q4 2017	Q4 2014	Q4 2017
	[1]	[2]	[3]	[4]	[5]=[1]–[2]	[6]=[3]–[4]	[5]*100/[1]	[6]*100/[3]
PH	14.7	14.7	15.3	16.4	0.0	-1.1	0.0	-7.1
PT	52.5	52.7	29.3	30.8	-0.2	-1.5	-0.4	-5.2
RU	189.5	189.5	134.2	134.5	0.0	-0.3	0.0	-0.2
ZA	33.3	32.9	32.7	32.5	0.4	0.2	1.3	0.5
ES	195.0	200.3	226.5	262.3	-5.3	-35.8	-2.7	-15.8
SE	312.7	300.0	349.4	331.4	12.7	18.0	4.0	5.1
СН	541.5	453.6	455.0	438.5	87.9	16.5	16.2	3.6
TR	26.5	19.9	41.8	35.3	6.6	6.5	24.9	15.6
GB⁵	3,989.0	4,030.7	3,690.7	3,740.0	-41.7	-49.3	-1.0	-1.3
US	1,760.8	2,654.5	1,813.0	2,790.2	-893.7	-977.2	-50.8	-53.9

¹ Claims in IIP comprise "Other investments" on account of currency and deposits, and loans of deposit corporations excluding central banks, which is similar to LBSR instrument G "Loans and deposits" including currency balances. ² For the purposes of comparison, LBSR total in Q4 2014 includes IIP amounts for PH and RU as both countries started reporting after Q4 2014 (PH from Q4 2016 and RU from Q4 2015). ³ Reports IIP data at annual frequency (Q4 of each year). ⁴ Data for Q4 2017 relate to that of Q4 2016 for both LBSR and IIP (as IIP data not available for Q4 2017). ⁵ Data for Q4 2017 relate to that of Q4 2015 for both LBSR and IIP (as IIP data not available for Q4 2017).

Sources: BIS LBSR (QR March 2019 release); IMF IIP (2018 M06 release); authors' calculations.

Table A1.7

BIS LBSR & IMF IIP: deposit liabilit	ies of deposit-taking	corporations	excl. central
banks ¹			

Amounts	in		hillions
AIIIOUIIIS		030	

Country	Q4 2	014	Q4 2	017	Difference (IIP –	e (amount) LBSR)	Differ (perce	ences ntage)
	IIP	LBSR	IIP	LBSR	Q4 2014	Q4 2017	Q4 2014	Q4 2017
	[1]	[2]	[3]	[4]	[5]=[1]–[2]	[6]=[3]–[4]	[5]*100/[1]	[6]*100/[3]
Total ²	16,376.0	17,642.2	16,125.5	17,231.6	-1,266.2	-1,106.1	-7.7	-6.9
AU	204.4	174.0	239.1	232.1	30.4	7.0	14.9	2.9
AT	130.2	128.4	96.9	95.2	1.8	1.7	1.4	1.8
BE	331.2	344.4	302.1	304.4	-13.2	0.5	-4.0	-0.8
BM ³	6.6	2.0	6.6	3.0	4.6	3.6	69.8	54.7
BR	115.4	130.2	95.0	105.6	-14.8	-10.6	-12.8	-11.1
CA	395.6	467.2	516.7	517.4	-71.6	-0.7	-18.1	-0.1
CL	13.1	13.3	16.2	15.5	-0.2	0.7	-1.5	4.6
HK ⁴	851.1	842.4	942.9	931.8	8.7	11.1	1.0	1.2
CY	29.3	30.5	23.4	25.6	-1.2	-2.2	-4.1	-9.3
DK	173.1	171.5	151.8	151.7	1.6	0.1	0.9	0.1
FI	176.7	176.5	135.1	135.2	0.2	-0.1	0.1	-0.1
FR	1,391.9	1,414.2	1,591.5	1,593.1	-22.3	-1.6	-1.6	-0.1
DE	1,015.1	1,005.1	1,088.7	1,077.7	10.0	11.0	1.0	1.0
GR	88.9	61.2	38.6	29.3	27.7	9.3	31.2	24.1
IN	114.8	113.0	129.1	135.6	1.8	-6.5	1.5	-5.1
ID	23.2	27.4	23.1	25.8	-4.2	-2.7	-18.0	-11.6
IE	240.1	240.1	162.1	164.1	0.0	-2.0	0.0	-1.2
IT	374.5	374.5	353.6	355.4	0.0	-1.8	0.0	-0.5
JP	899.7	1,192.1	1,018.7	1,287.8	-292.4	-269.1	-32.5	-26.4
KR	118.4	59.2	111.4	56.7	59.2	54.7	50.0	49.1
LU	451.7	452.1	405.0	405.3	-0.4	-0.3	-0.1	-0.1
MX	17.9	15.9	13.4	8.1	2.0	5.3	11.2	39.6
NL	711.3	711.3	745.8	743.9	0.0	1.9	0.0	0.3
NO	165.1	151.6	174.0	161.3	13.5	12.7	8.2	7.3
PA	40.4	31.5	41.0	30.2	8.9	10.8	22.0	26.4

¹ Liabilities in IIP comprise "Other investments" on account of currency and deposits, and loans of deposit corporations excluding central banks. ² For the purpose of comparison, LBSR total in Q4 2014 includes IIP amounts for PH and RU as both countries started reporting after Q4 2014 (PH from Q4 2016 and RU from Q4 2105). ³ Reports IIP data at annual frequency (Q4 of each year). ⁴ Data for Q4 2017 relate to that of Q4 2016 for both LBSR and IIP (as IIP data not available for Q4 2017). ⁵ Data for Q4 2017 relate to that of Q4 2015 for both LBSR and IIP (as IIP data not available for Q4 2017).

Sources: BIS LBSR (QR March 2019 release); IMF IIP (2018 M06 release); authors' calculations.

Table A1.8

BIS LBSR & IMF IIP: deposit liabilities of deposit-taking corporations excl. central banks¹ (cont.)

Amounts in USD billions

Country	Q4 20	Q4 2014		Q4 2017		Difference (amount) (IIP – LBSR)		Differences (percentage)	
	IIP	LBSR	IIP	LBSR	Q4 2014	Q4 2017	Q4 2014	Q4 2017	
	[1]	[2]	[3]	[4]	[5]=[1]–[2]	[6]=[3]–[4]	[5]*100/[1]	[6]*100/[3]	
PH	16.5	16.5	15.7	17.0	0.0	-1.3	0.0	-8.3	
PT	83.7	82.1	58.7	58.2	1.6	0.5	1.9	0.9	
RU	160.7	160.7	91.0	95.5	0.0	-4.5	0.0	-5.0	
ZA	28.7	28.2	24.9	23.6	0.5	1.3	1.6	5.1	
ES	376.2	383.7	321.4	322.2	-7.5	-0.8	-2.0	-0.2	
SE	209.5	194.7	234.9	216.4	14.8	18.5	7.1	7.9	
СН	753.0	607.7	744.1	680.1	145.3	63.5	19.3	8.5	
TR	144.2	124.8	144.1	128.3	19.4	15.8	13.5	11.0	
GB⁵	4,182.5	4,176.6	3,770.1	3,765.3	5.9	4.8	0.1	0.1	
US	2,341.3	3,537.6	2,298.6	3,333.0	-1196.3	-1034.4	-51.1	-45.0	

Table A1.8

¹ Liabilities in IIP comprise "Other investments" on account of currency and deposits, and loans of deposit corporations excluding central banks. ² For the purpose of comparison, LBSR total in Q4 2014 includes IIP amounts for PH and RU as both countries started reporting after Q4 2014 (PH from Q4 2016 and RU from Q4 2105). ³ Reports IIP data at annual frequency (Q4 of each year). ⁴ Data for Q4 2017 relate to that of Q4 2016 for both LBSR and IIP (as IIP data not available for Q4 2017). ⁵ Data for Q4 2017 relate to that of Q4 2015 for both LBSR and IIP (as IIP data not available for Q4 2017).

LBSR vs IMF IIP – loans and deposits of banks located in Portugal¹

Amounts in USD billions

Table A1.9

	IMF	IIP	BIS L	.BSR	Difference (IIP –	in amount LBSR)	Percentage difference	
Period	Claims	Liabilities	Claims	Liabilities	Claims	Liabilities	Claims	Liabilities
							[7]=	[8]=
	[1]	[2]	[3]	[4]	[5]=[1]–[3]	[6]=[2]–[4]	[5]*100/[1]	[6]*100/[2]
Q1 2011		179.6	86.2	178.7		1.0		0.5
Q2 2011		172.7	85.4	171.8		0.9		0.5
Q3 2011		154.7	76.5	153.9		0.9		0.6
Q4 2011		136.8	77.0	136.0		0.8		0.6
Q1 2012		135.0	83.5	134.2		0.8		0.6
Q2 2012		123.4	82.3	122.6		0.7		0.6
Q3 2012		119.7	81.8	119.0		0.7		0.6
Q4 2012		118.9	78.6	118.1		0.9		0.7
Q1 2013	74.8	112.9	75.1	112.1	-0.3	0.8	-0.4	0.7
Q2 2013	71.4	111.0	71.0	110.3	0.4	0.7	0.6	0.7
Q3 2013	57.7	95.1	57.4	94.4	0.3	0.7	0.5	0.8
Q4 2013	58.9	97.5	58.5	96.7	0.3	0.8	0.5	0.8
Q1 2014	60.1	95.9	59.7	95.1	0.3	0.8	0.5	0.8
Q2 2014	60.5	97.4	60.1	96.6	0.5	0.8	0.8	0.9
Q3 2014	60.6	83.0	58.4	81.4	2.3	1.6	3.7	1.9
Q4 2014	52.5	83.7	52.7	82.1	-0.2	1.6	-0.4	1.9
Q1 2015	45.5	73.2	45.8	72.0	-0.2	1.3	-0.5	1.7
Q2 2015	46.7	76.6	46.9	75.3	-0.2	1.3	-0.5	1.7
Q3 2015	39.6	70.5	40.0	69.2	-0.5	1.3	-1.2	1.8
Q4 2015	37.4	65.5	38.1	64.2	-0.8	1.3	-2.1	2.0
Q1 2016	36.5	67.2	37.0	65.8	-0.5	1.4	-1.4	2.1
Q2 2016	35.2	67.0	35.8	65.6	-0.6	1.4	-1.7	2.0
Q3 2016	34.4	62.9	35.7	62.4	-1.3	0.5	-3.7	0.7
Q4 2016	30.5	60.6	31.8	59.2	-1.3	1.4	-4.2	2.2
Q4 2017	29.3	58.7	30.8	58.2	-1.5	0.5	-5.1	0.9

¹ Claims in IIP comprise "Other investments" on account of currency and deposits, and loans of deposit corporations excluding central banks, which is similar to LBSR instrument G "Loans and deposits" including currency balances. On the liabilities side, total liabilities in IIP comprise "Other investments" on account of currency and deposits, and loans of deposit corporations excluding central banks.

Country	BIS L	BSR	11	P	Difference	in amount	Percentage	difference
Country	Q4 2014	Q4 2017	Q4 2014	Q4 2017	Q4 2014	Q4 2017	Q4 2014	Q4 2017
	[1]	[2]	[3]	[4]	[5]=[1]–[3]	[6]=[2]–[4]	[5]*100/[1]	[6]*100/[2]
Total ²	3,343.6	2,963.3	3,558.1	3,268.0	-214.5	-304.6	-6.4	-10.3
AU	22.1	34.9	31.6	72.1	-9.5	-37.3	-42.7	-106.8
AT	77.4	60.8	77.9	61.8	-0.5	-1.1	-0.6	-1.7
BE	106.0	94.7	109.4	97.2	-3.4	-2.5	-3.2	-2.6
BM ³	7.2	8.7	8.9	10.0	-1.7	-1.3	-23.9	-14.8
BR	3.1	4.0	5.3	4.4	-2.2	-0.4	-69.7	-9.7
CL	1.3	1.3	1.0	0.9	0.3	0.4	24.5	28.3
НК	284.9	379.4	316.5	374.3	-31.5	5.2	-11.1	1.4
CY	8.8	2.5	4.8	1.7	3.9	0.7	44.7	29.2
DK	35.7	19.3	38.4	22.2	-2.7	-2.9	-7.5	-14.8
FI	69.7	36.2	63.4	36.3	6.3	-0.1	9.1	-0.3
FR	519.1	484.1	407.4	298.5	111.8	185.6	21.5	38.3
DE	630.4	573.3	671.5	598.3	-41.1	-25.0	-6.5	-4.4
GR	70.9	19.3	71.0	19.3	-0.1	0.0	-0.2	-0.1
IN	0.0	0.3	0.4	0.3	-0.4	0.0		0.1
ID	1.5	1.1	1.7	0.9	-0.2	0.2	-10.2	21.2
IE	132.3	70.3	130.7	67.7	1.6	2.5	1.2	3.6
IT	72.5	112.1	62.6	107.2	9.9	4.9	13.6	4.4
JP			852.8	861.1				
KR	2.6	13.4	10.4	34.6	-7.8	-21.2	-304.2	-158.7
LU	176.0	133.0	166.3	126.5	9.7	6.5	5.5	4.9
MX	3.9	6.8	3.8	6.9	0.1	-0.1	1.9	-1.4
NL	134.7	110.6	138.2	111.4	-3.5	-0.9	-2.6	-0.8
NO	31.5	33.8	56.1	51.6	-24.7	-17.7	-78.4	-52.4
PA	6.8	8.4	6.8	7.8	-0.1	0.6	-0.9	7.0

BIS LBSR vs IMF IIP – cross-border debt securities claims of deposit-taking corporations excl. central banks¹

Amounts in USD billions

Table A1.10

¹ The IMF IIP data for debt securities claims are available for 34 of 47 countries. In the BIS LBSR, two countries (Bahrain and Curaçao) do not report cross-border debt securities claims in the LBS and the data for remaining 11 countries including Japan are either restricted or confidential. ² Of 34 countries in the table, the total excludes values of JP, PH and RU. ³ IIP data available up to Q4 2016, and hence LBSR data of Q4 2016 are used in Q4 2017 for fair comparison. ⁴ IIP data available only up to Q4 2015, and hence LBSR data used for Q4 2015 are used in Q4 2017 for fair comparison.

BIS LBSR vs IMF IIP – cross-border debt securities claims of deposit-taking corporations excl. central banks¹ (cont.)

Amounts in USD billions

Table A1.10

Country	BIS L	BSR	IIP		Difference in amount		Percentage difference	
Country	Q4 2014	Q4 2017	Q4 2014	Q4 2017	Q4 2014	Q4 2017	Q4 2014	Q4 2017
	[1]	[2]	[3]	[4]	[5]=[1]–[3]	[6]=[2]–[4]	[5]*100/[1]	[6]*100/[2]
PH	NA	9.9	7.3	10.1	-7.3	-0.2		-1.6
PT	18.8	20.8	22.2	24.1	-3.5	-3.3	-18.5	-15.7
RU	NA	38.8	37.7	37.9	-37.7	0.9		2.4
ZA	3.3	3.5	3.0	2.6	0.2	0.9	7.5	24.8
ES	111.4	98.7	93.2	84.7	18.1	13.9	16.3	14.1
SE	43.0	37.0	45.5	40.2	-2.5	-3.2	-5.8	-8.5
СН	94.2	102.1	94.3	102.1	0.0	0.0	0.0	0.0
TR	0.8	0.8	0.8	0.6	0.0	0.2	-4.9	25.9
GB ⁴	664.6	471.6	718.5	659.9	-53.9	-188.4	-8.1	-39.9
US	9.2	20.7	196.7	241.7	-187.5	-221.1	-2,029.0	-1,069.7

¹ The IMF IIP data for debt securities claims are available for 34 of 47 countries. In the BIS LBSR, two countries (Bahrain and Curaçao) do not report cross-border debt securities claims in the LBS and the data for remaining 11 countries including Japan are either restricted or confidential. ² Of 34 countries in the table, the total excludes values of JP, PH and RU. ³ IIP data available up to Q4 2016, and hence LBSR data of Q4 2016 are used in Q4 2017 for fair comparison. ⁴ IIP data available only up to Q4 2015, and hence LBSR data used for Q4 2015 are used in Q4 2017 for fair comparison.

BIS LBSR vs IMF CPIS – counterparty country breakdown of cross-border debt securities liabilities between the BIS LBSR and the IMF ${\rm CPIS}^1$

Amounts in USD billions

Table A1.11

Period	CPIS: Cross-border by individual country		LBSR: Cross-border by individual country		Difference (CPIS – LBSR)		Memo: LBSR: unallocated cross- border	
	2015 Q4	2017Q4	2015 Q4	2017Q4	2015 Q4	2017Q4	2015 Q4	2017Q4
	[1]	[2]	[3]	[4]	[5]=[1]–[3]	[6]=[2]–[4]	[7]	[8]
Total	1,853.1	2,158.8	1,711.5	1,890.7	141.7	268.0	1,541.4	1,640.3
GB	354.1	394.2	12.8	14.2	341.3	380.1	808.2	887.8
FR	193.3	223.6	646.2	730.7	-452.9	-507.1		
AU	127.1	134.6	367.1	299.6	-240.0	-165.0		
US	93.2	113.0	108.3	130.4	-15.1	-17.4		
IT	72.9	68.6	2.7	5.6	70.2	63.1		
NO	27.2	67.7	41.4	42.7	-14.2	25.0	1.7	5.7
AT	41.6	32.4	51.5	61.0	-9.9	-28.6	11.7	
BE	30.0	31.4	16.5	46.4	13.5	-15.0		
FI	27.0	28.0	91.9	95.8	-64.9	-67.8		
IE	34.7	25.3	45.3	52.0	-10.6	-26.7		
GG	8.8	7.8	8.8	9.2	0.0	-1.4		
JE	5.0	6.6	1.7	1.5	3.3	5.1		
НК	2.1	6.2	9.7	32.5	-7.6	-26.3		
KR	7.8	5.7	82.8	80.1	-74.9	-74.4		
BR	6.3	5.5	19.0	11.9	-12.7	-6.4		
CN	2.3	5.3	123.2	167.8	-120.9	-162.6	16.7	16.1
PT	4.3	3.2	0.4	0.3	4.0	2.9		
CL	3.3	2.7	9.9	9.3	-6.7	-6.6		
IN	2.4	2.2	2.2	0.3	0.2	2.0		
MX	1.3	1.3	11.6	14.9	-10.4	-13.6		
PA	0.6	1.0	16.2	15.6	-15.6	-14.6		
BS	0.5	0.7	25.1	25.1	-24.6	-24.4		
ID	0.3	0.3	4.7	3.9	-4.4	-3.5		
BM	0.1	0.3	0.1	0.1	0.0	0.2		
МО	0.0	0.1	0.6	4.8	-0.6	-4.7		
RU	0.1	0.1	2.0	2.8	-1.9	-2.7	3.8	2.6

¹ CPIS data on holdings of cross-border debt securities issued by deposit corporations excluding central banks. As the sector breakdown of issuers is an encouraged item in the CPIS, only 26 of 85 plus countries report these data. ² Reports only vis-à-vis unallocated by location without classifying vis-à-vis residents or cross-border. ³ In the LBSR, amounts are reported almost entirely without any country breakdown (ie only total cross-border amounts are reported).

Sources: BIS LBSR (QR March 2019 release); IMF CPIS survey (14 March 2019 release); authors' calculations.

BIS LBSR vs IMF CPIS – counterparty country breakdown of cross-border debt securities liabilities between the BIS LBSR and the IMF CPIS¹ (cont.)

Amounts in USD billions

Table A1.11

Period	CPIS: Cross-border by individual country		LBSR: Cross-border by individual country		Difference (CPIS – LBSR)		Memo: LBSR: unallocated cross- border	
	Q4 2015	Q4 2017	Q4 2015	Q4 2017	Q4 2015	Q4 2017	Q4 2015	Q4 2017
	[1]	[2]	[3]	[4]	[5]=[1]–[3]	[6]=[2]–[4]	[7]	[8]
CY	0.0	0.0	0.5	0.3	-0.5	-0.2		
TW	0.0	0.0	1.5	1.6	-1.5			
CA	123.9	206.3	0.3		123.5			
ES	90.0	96.9		18.5		78.4		
PH	0.1	0.3		2.2		-1.9		
NL ²	222.0	237.4						
SE ²	106.0	120.1						
DE ³	113.0	119.0	0.0	0.0			646.0	691.8
DK ²	52.8	61.8						
JP ²	42.9	60.5						
LU ²	23.8	33.2						
SG	12.0	22.5						
CH ²	12.2	22.1						
TR ²	3.6	5.2						
KY ³	3.3	4.1	0.0	0.0			51.4	34.5
GR	0.1	0.7						
ZA ³	0.2	0.3	0.0	0.0			2.1	1.8
MY	0.4	0.2						
CW	0.1	0.1						
BH	0.1	0.1						
IM								

¹ CPIS data on holdings of cross-border debt securities issued by deposit corporations excluding central banks. As the sector breakdown of issuers is an encouraged item in the CPIS, only 26 of 85 plus countries report these data. ² In the LBSR, amounts are reported almost entirely without any country breakdown (ie only total cross-border amounts are reported). ³ Reports only vis-à-vis unallocated by location without classifying vis-à-vis residents or cross-border.

Sources: BIS LBSR (QR March 2019 release); IMF CPIS survey (14 March 2019 release); authors' calculations.

BIS LBSR & IDS: international debt securities liabilities

Amounts in USD billions

Table A1.12

Period	BIS L	.BSR	BIS	IDS	Difference (LBSR	in amount – IDS)	Percentage difference	
	Q4 2015	Q4 2017	Q4 2015	Q4 2017	Q4 2015	Q4 2017	Q4 2015	Q4 2017
	[1]	[2]	[3]	[4]	[5]=[1]–[3]	[6]=[2]–[4]	[5]/[1]	[6]/[2]
Total	4,444.1	4,833.3	6,229.8	6,710.1	-1,785.7	-1,876.8	-40.2	-38.8
AT	68.0	68.1	101.3	83.8	-33.2	-15.7	-48.8	-23.1
AU	372.1	358.1	329.7	338.0	42.4	20.2	11.4	5.6
BE	18.1	49.1	20.3	22.2	-2.2	26.9	-12.0	54.8
BR	20.1	12.5	36.6	28.6	-16.6	-16.1	-82.4	-128.5
BS	26.6	26.6	5.5	7.4	21.0	19.2	79.2	72.1
CA	2.2	5.8	264.1	309.3	-261.9	-303.4	-11,832.7	-5,213.5
СН	21.2	42.8	27.7	34.9	-6.5	7.9	-30.8	18.5
CN	139.9	183.9	48.6	79.3	91.3	104.6	65.2	56.9
DE	678.8	721.8	466.8	568.2	212.0	153.6	31.2	21.3
DK	89.8	97.8	60.0	63.1	29.8	34.7	33.2	35.5
ES	13.0	48.5	131.7	140.5	-118.7	-92.0	-915.1	-189.6
FI	93.3	95.9	65.5	69.9	27.8	26.0	29.8	27.1
FR	662.9	741.9	588.6	647.0	74.3	94.9	11.2	12.8
GB	923.2	1010.5	1289.8	1318.7	-366.6	-308.2	-39.7	-30.5
НК	116.8	160.6	99.5	141.0	17.3	19.6	14.8	12.2
IE	46.0	52.0	115.0	100.6	-69.0	-48.6	-150.1	-93.3
IT	20.6	28.5	266.2	258.3	-245.7	-229.8	-1193.9	-805.8
KR	85.5	84.3	96.6	98.9	-11.1	-14.6	-13.0	-17.3
KY	51.4	34.5	95.5	97.8	-44.1	-63.3	-85.9	-183.5
LU	31.7	31.7	128.3	136.2	-96.6	-104.5	-305.0	-329.1
NL	269.1	249.7	617.0	636.9	-347.9	-387.2	-129.3	-155.1
NO	45.5	48.3	180.9	187.9	-135.4	-139.6	-297.9	-289.1
RU	9.4	7.6	32.9	28.3	-23.5	-20.7	-251.1	-273.8
SE	299.1	302.0	203.4	208.5	95.7	93.5	32.0	31.0
TR	27.5	34.5	40.5	60.4	-13.0	-25.9	-47.5	-75.1

¹ Data are either restricted or confidential. ² Banks in five jurisdictions, namely, BH, CW, GR, IM and SG do not report international debt securities in the LBSR. ³ GG and JE report international debt securities in LBSR but the IDS database shows no issuances of debt securities in international markets by banks therein.

BIS LBSR & IDS: international debt securities liabilities (cont.)

Amounts in USD billions

Table A1.12

Period	BIS L	BSR	BIS	IDS	Difference (LBSR	in amount – IDS)	Percentage difference	
	Q4 2015	Q4 2017	Q4 2015	Q4 2017	Q4 2015	Q4 2017	Q4 2015	Q4 2017
	[1]	[2]	[3]	[4]	[5]=[1]–[3]	[6]=[2]–[4]	[5]/[1]	[6]/[2]
US	108.3	130.4	550.6	621.4	-442.3	-491.0	-408.4	-376.6
JP ¹			148.2	220.5				
MY ¹			13.5	15.5				
BM	0.1	0.1	3.2	3.3	-3.1	-3.2	-2,633.0	-2,699.8
CL	11.9	11.0	11.7	10.5	0.3	0.5	2.3	4.3
CY	0.6	0.3	2.0	1.8	-1.3	-1.6	-216.4	-611.3
ID	5.6	5.1	1.6	2.1	4.0	3.0	71.7	58.7
IN	2.2	0.3	7.2	6.7	-5.0	-6.5	-231.0	-2330.5
MO	3.8	9.3	1.6	3.6	2.3	5.6	58.8	60.7
MX	13.5	20.4	12.0	14.4	1.5	6.0	11.2	29.6
PA	16.3	15.8	3.1	4.7	13.3	11.2	81.2	70.5
PT	0.5	0.3	14.5	14.7	-14.0	-14.4	-3055.0	-4311.8
TW	10.0	10.6	5.9	9.3	4.2	1.4	41.4	13.0
ZA	2.1	1.9	3.7	2.5	-1.5	-0.6	-70.3	-34.3
BH ²			3.8	2.8				
CW ²			7.0	2.7				
GG ³	27.9	31.5						
GR ²			64.8	22.9				
IM ²								
JE ³	20.9	13.0						
PH		2.2	3.6	4.2		-2.0		-88.9
SG ²			60.1	80.7				

¹ Data are either restricted or confidential. ² Banks in five jurisdictions, namely, BH, CW, GR, IM and SG do not report international debt securities in the LBSR. ³ GG and JE report international debt securities in LBSR but the IDS database shows no issuances of debt securities in international markets by banks therein.

ISO codes and country/jurisdiction names

ISO code	Name of country/jurisdiction	ISO code	Name of country/jurisdiction
AT	Austria	IM	Isle of Man
AU	Australia	IN	India
BE	Belgium	IT	Italy
ВН	Bahrain	JE	Jersey
BM	Bermuda	JP	Japan
BR	Brazil	KR	Korea
BS	Bahamas	KY	Cayman Islands
CA	Canada	LU	Luxembourg
СН	Switzerland	MO	Macao SAR
CL	Chile	MX	Mexico
CN	China	MY	Malaysia
CW	Curaçao	NL	Netherlands
CY	Cyprus	NO	Norway
DE	Germany	PA	Panama
DK	Denmark	PH	Philippines
ES	Spain	PT	Portugal
FI	Finland	RU	Russia
FR	France	SE	Sweden
GB	United Kingdom	SG	Singapore
GG	Guernsey	TR	Turkey
GR	Greece	TW	Chinese Taipei
НК	Hong Kong SAR	US	United States
ID	Indonesia	ZA	South Africa
IE	Ireland		
IE	Ireland		

Table A1.13

Annex 2: Consistency between locational baking statistics by nationality and consolidated banking statistics on an immediate counterparty basis¹⁶

The CBSI are, in some respects, comparable to the LBS by nationality (LBSN). Both dataset respect the perimeter of reporting banks' balance sheets, and both track banks' positions vis-à-vis counterparty countries where the immediate obligor resides.¹⁷ In this section, we compare three data elements observed in both datasets: domestic claims in all currencies (ie banks' claims on residents of their home country by office at home and abroad), banks' local claims in all currencies (ie local claims booked by banks' offices at home) and banks' local liabilities in local currency (ie liabilities in domestic currency to residents by banks' home offices). The reported interoffice claims/liabilities are excluded from the LBSN for comparison with the CBSI.

Formally, the matching of these three data elements can be described as follows:

$$\begin{split} LBSN\ claims_i^{DomesticAll} &\approx CBSI\ claims_i^{DomesticAll}\\ LBSN\ claims_i^{LocalAll} &\approx CBSI\ claims_i^{LocalAll}\\ LBSN\ liabilities_i^{LocalLocal} &\approx CBSI\ liabilities_i^{LocalLocal} \end{split}$$

Where "i" indexes banks of a particular nationality, "DomesticAll" means claims on residents of the home country (eg Swiss banks' claims on Switzerland by offices in Switzerland and those by banks' affiliates abroad) in all currencies, "LocalAll" means local claims of banks' offices at home (eg Swiss banks' claims on residents in Switzerland) in all currencies, and "LocalLocal" means local liabilities of banks' offices at home in the domestic/local currency. The components "LocalAll" of claims and "LocalLocal" of liabilities are reported by the respective reporting countries in their CBSI and LBSN for domestic banks. The results are shown below in Tables A2.1 – A2.3.

Domestic claims and liabilities in the LBSN are available from Q2 2012, while domestic claims are available in CBSI from Q4 2013. Table A2.1 reveals that the domestic claims between the LBSN and CBSI differed by roughly 16% in each quarter between Q4 2014 – Q4 2017. The full set of figures are revealed for 19 countries. But, for other countries, data confidentiality and/or data gaps mean that some cells in the tables are missing. The amounts between the two data sets are either almost the same or differ by less than 10% for 13 of the 19 reporting countries. That said, relatively large differences exist for a number of countries.

Table A2.2 compares local claims in all currencies between the LBSN and the CBSI. In the total of 16 countries, the differences between the two data sources increased from \$3,603 billion (12.4%) in Q4 2014 to \$3,716 billion (14.6%) in Q4 2017. However, the individual behaviour is heterogeneous, with a number of countries posting almost the same amount in both data sets as expected conceptually.

Table A2.3 compares local liabilities in local/domestic currency between the LBSN and the CBSI. The table shows that the amounts between the two data sets are either the same or differ by less than 6% for a number of reporting countries while, for other countries, the gap between the two data sets has increased between 2014 and 2017. Differences between the LBSN and CBSI can arise for several reasons, a few of which are highlighted below:

 Differences in reporting population – the CBSI have a much broader coverage than the LBSN. In addition, while the CBSI reporting population may exclude smaller banks and include nonfinancial subsidiaries (excluding insurance), the LBSN population may include non-bank affiliates

¹⁶ The first two paragraphs (Annex 2) are updated in end-April 2020; there are no changes to data or rest of the document.

¹⁷ Domestic claims in all currencies, local claims in all currencies and local liabilities in local currency, potentially include financial instruments (eg debt securities) in addition to loans and deposits.

such as building societies, credit unions and other financial institutions that take deposits or issue a close substitute for deposits.

- Different criteria The LBS and CBSI use different criteria for the classification of domestic banks. Some countries classify banks with a private foreign ownership as non-domestic banks in the LBSN but classify them as domestic banks in the CBS for supervisory purposes.
- 3. Reporting issues Domestic claims are aggregated by nationality in the LBSN data (excluding inter-office claims) by the BIS, whereas they are reported by the home country in the CBSI. Different data sources, particularly inter-office positions, may not be completely consistent or correctly reported in LBSN, and also in certain cases, inter-office positions include those vis-à-vis non-bank affiliates. In the case of local liabilities in the CBSI, a number of countries report only loans and deposits, whereas other positions such as debt securities are also included in the LBSN. Debt securities issues by counterparty country are also difficult to report under the CBS.
- 4. Different scope/coverage In some countries, such as Austria and Finland, a very large number of small banks are not consolidated by a parent. If these very small banks have a reporting obligation only for the LBSN, whereas in the CBS only "internationally active banks" are included, the local/domestic claims and liabilities are prone to differ. In such a case, the CBS's focus on internationally active banks might actually lead to a situation where the LBSN provide broader coverage of domestic/local business, and the CBS provide broader coverage of international banking business.
- 5. Different scope of consolidation The "artificial consolidation" applied in this test by excluding intragroup positions is only applied to claims/liabilities from banks, whereas the scope of consolidation in the CBS is usually wider in scope (often a prudential scope of consolidation is used, also including various kinds of financial intermediaries). Additionally, it is usually very challenging for central banks to classify liabilities/debt securities as intragroup, which would not allow them to "artificially consolidate".

There are varying experiences across countries. In Portugal, the main discrepancies for the recent periods for claims are related to the geographical breakdown on interest owed but not yet paid. Austria explains that the difference is mainly due to the sample of reporting banks, in that only internationally active banks are included in the CBS. Another important difference between the LBSN and CBS for liabilities for Austria is how debt securities are treated: while they are not included in local liabilities in the CBS, they are included in the LBSN and assigned to a counterparty based on an estimation of the holder of the securities (based on the Securities Holdings Statistics or SHS data). In the Swiss case, interbank positions in the CBS are netted between the parent company and its subsidiaries/affiliates (netting in both directions) but, in the LBSN, positions against parent companies or "sister" companies are not included in the counterparty sector "intragroup".

Parent /reporting	Q4 2014		Q4 2017		Difference (LBSN -	(amount) – CBSI)	Difference (percentage)	
country	LBSN	CBSI	LBSN	CBSI	Q4 2014	Q4 2017	Q4 2014	Q4 2017
	[1]	[2]	[3]	[4]	[5] =[1]-[2]	[6]=[3]-[4]	[7] = [5]*100 /[1]	[8] =[6]*100 /[3]
Total ²	46,119.0	38,454.3	51,196.4	43,055.9	7,664.8	8,140.5	16.6	15.9
AT	532.6	371.1	492.2	407.6	161.5	84.6	30.3	17.2
BE	286.6	266.2	357.1	331.4	20.4	25.7	7.1	7.2
CA	1,954.0	1,943.3	2,085.8	2,064.5	10.7	21.3	0.5	1.0
СН	1,165.3	1,172.4	1,382.9	1,390.0	-7.1	-7.1	-0.6	-0.5
CL	170.6	173.6	191.8	191.5	-3.0	0.4	-1.8	0.2
DE	5,447.3	5,222.8	5,568.5	5,435.1	224.5	133.4	4.1	2.4
DK	676.3	629.2	685.7	624.5	47.1	61.3	7.0	8.9
ES	2,357.4	2,164.1	2,090.4	1,943.4	193.3	147.0	8.2	7.0
FI	165.1	78.0	198.1	101.2	87.1	97.0	52.8	48.9
FR	4,051.1	3,761.8	4,602.1	4,426.4	289.3	175.7	7.1	3.8
GB	4,981.1	2,701.2	5,130.9	2,674.9	2,279.8	2,455.9	45.8	47.9
GR	289.9	298.6	247.6	257.1	-8.7	-9.5	-3.0	-3.8
IE	230.4	208.0	184.5	165.9	22.4	18.6	9.7	10.1
IT	3,304.5	2,893.1	3,133.1	2,739.9	411.4	393.2	12.4	12.6
JP	15,498.6	11,913.0	19,272.8	15,123.6	3,585.7	4,149.2	23.1	21.5
KR	1,553.7	1,533.0	1,873.2	1,853.5	20.6	19.7	1.3	1.1
NL	1,623.0	1,436.2	1,619.4	1,401.3	186.8	218.1	11.5	13.5
SE	761.0	695.7	770.8	722.9	65.4	47.9	8.6	6.2
TW	1,070.5	993.0	1,309.4	1,201.3	77.5	108.1	7.2	8.3
НК	57.9		65.9					
LU	52.4		62.9					
NO	326.1		314.8					
AU	2,294.7	NA	2,282.0	2,133.8				

BIS LBSN & CBSI: Domestic banks' domestic claims on the reporting country¹

Excluding intragroup claims, amounts in USD billions

¹ Claims on residents of the reporting country comprising local claims booked by banks' offices at home plus cross-border claims by banks' foreign affiliates. In the LBSN, these represent the sum of claims booked by the banks' offices at home and those booked by banks' affiliates in host LBS reporting countries. In the CBSI, these represent the sum of claims booked by banks' offices at home and those booked by banks' affiliates in all countries. The notation; the notation "NA" stands for data are not available and/or not derived because the home reporting country itself did not report claims denominated in local currency and/or in foreign currencies; three dots ("...") stand for suppressed (ie restricted or confidential). ² Only for countries from AT to TW. ³ The United States does not report local claims/liabilities vis-à-vis residents in LBSN. The domestic claims of US banks in other BIS LBS reporting countries vis-à-vis US residents were \$495 billion and \$377 billion as of Q4 2014 and Q4 2017 respectively (shown as "\$\$\$" and not included in the total).

Sources: BIS LBSN; BIS CBSI; authors' calculations.

Table A2.1

BIS LBSN & CBSI: Domestic banks' domestic claims on the reporting country¹(cont.)

Excluding intragroup claims, amounts in USD billions

Table A2.1

Parent /reporting	Q4 2014		Q4 2017		Difference (amount) (LBSN – CBSI)		Difference (percentage)	
country	LBSN	CBSI	LBSN	CBSI	Q4 2014	Q4 2017	Q4 2014	Q4 2017
	[1]	[2]	[3]	[4]	[5] =[1]-[2]	[6]=[3]-[4]	[7] = [5]*100 /[1]	[8] =[6]*100 /[3]
BR	1,943.4	NA	1,722.5	NA				
IN	1,622.0	NA	2,046.7	NA				
MX	162.2	NA	170.2	NA				
PA	NA	NA	NA	NA				
РТ	364.0	NA	263.5	224.0				
SG	NA	NA	NA	378.7				
TR	NA	666.2	NA	595.2				
US ³	\$\$\$	10,062.7	\$\$\$	10,929.3				

¹ Claims on residents of the reporting country comprising local claims booked by banks' offices at home plus cross-border claims by banks' foreign affiliates. In the LBSN, these represent the sum of claims booked by the banks' offices at home and those booked by banks' affiliates in host LBS reporting countries. In the CBSI, these represent the sum of claims booked by banks' offices at home and those booked by banks' affiliates in all countries. The notation "NA" stands for data not available and/or not derived because the home reporting country itself did not report claims denominated in local currency and/or in foreign currencies; three dots ("...") stand for suppressed (ie restricted or confidential). ² Only for countries from AT to TW. ³ The United States does not report local claims/liabilities vis-à-vis residents in LBSN. The domestic claims of US banks in other BIS LBS reporting countries vis-à-vis US residents were \$495 billion and \$377 billion as of Q4 2014 and Q4 2017 respectively (shown as "\$\$\$" and not included in the total).

Sources: BIS LBSN; BIS CBSI; authors' calculations.

BIS LBSN & CBSI: Domestic banks' local claims in all currencies on local residents¹

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Excluding	Intragroup	ciaims,	amounts	In	020	DIIIIONS

Table A2.2

Parent /reporting	Q4 2014		Q4 2017		Difference (amount) (LBSN – CBSI)		Difference (percentage)	
country	LBSN	CBSI	LBSN	CBSI	Q4 2014	Q4 20174	Q4 2014	Q4 2017
	[1]	[2]	[3]	[4]	[5]=[1]–[2]	[6]=[3]–[4]	[5]*100/[1]	[6]*100 /[3]
Total ²	29,123.6	25,520.7	30,731.6	27,015.4	3,602.9	3,716.3	12.4	14.6
BE	277.7	263.9	352.6	330.1	13.8	22.6	5.0	6.4
CA	1,916.7	1,916.7	2,042.0	2,042.0	0.0	0.0	0.0	0.0
СН	1,145.9	1,156.7	1,351.0	1,371.9	-10.8	-20.9	-0.9	-1.5
CL	170.6	172.7	191.8	190.9	-2.1	0.9	-1.2	0.5
DE	5,276.7	5,166.9	5,475.1	5,373.5	109.7	101.6	2.1	1.9
DK	661.0	628.1	653.8	622.0	32.8	31.8	5.0	4.9
ES	2,327.3	2,160.0	2,073.3	1,937.3	167.3	136.0	7.2	6.6
FI	165.1	78.0	198.1	100.9	87.1	97.3	52.8	49.1
FR	3,903.0	3,611.2	4,506.2	4,329.4	291.8	176.8	7.5	3.9
GB	4,845.9	2,632.5	5,028.5	2,635.9	2,213.5	2,392.6	45.7	47.6
GR	287.2	296.4	246.5	255.5	-9.3	-8.9	-3.2	-3.6
IT	3,249.9	2,856.0	3,091.5	2,707.5	393.9	384.0	12.1	12.4
KR	1,546.8	1,530.4	1,868.8	1,848.2	16.5	20.6	1.1	1.1
NL	1,584.4	1,417.0	1,599.2	1,370.8	167.4	228.4	10.6	14.3
SE	699.1	658.8	748.6	704.5	40.3	44.0	5.8	5.9
TW	1,066.2	975.1	1,304.5	1,195.0	91.1	109.5	8.5	8.4
НК	57.2							
IE		206.7		165.5				
LU			61.2					
NO								
AT	532.3	NA	491.5	406.0				
AU	2,269.2	NA	2,252.5	2,009.1				
BR	1,882.6	NA	1,677.1	NA				
IN		NA		NA				
JP	15,449.0	NA	19,210.5	NA				
MX	159.0	NA	164.0	NA				
PA	NA	NA	NA	NA				
PT		NA						
SG	NA	NA	NA					
TR	NA	NA	NA	NA				
US	NA	9,849.4	NA	10,728.9				

¹ Local claims on residents of the reporting country by banks' offices at home (reported by the country in their CBSI and LBSN for home nationality banks). The notation "NA" stands for data not reported and three dots ("...") for data suppressed (ie either restricted or confidential). ² Only for countries from BE to TW, ie does not include suppressed values or those not available in both data sets in either of the periods. Sources: BIS LBSN; BIS CBSI; authors' calculations.

BIS LBSN & BIS CBSI : Domestic banks' local currency liabilities to local residents¹

Parent Q4 2014 /reporting		Q4 2017		Difference (amount) (LBSN – CBSI)		Difference (percentage)		
country	LBSN	CBSI	LBSN	CBSI	Q4 2014	Q4 20174	Q4 2014	Q4 2017
	[1]	[2]	[3]	[4]	[5]=[1]–[3]	[6]=[2]–[4]	[5]*100/[1]	[6]*100/[2]
Total ²	22,505.7	17,345.8	23,748.5	18,382.9	5,159.8	5,365.6	22.9	30.9
BE	297.9	267.0	355.8	315.6	30.9	40.2	10.4	11.3
CA	1,256.7	1,177.0	1,393.2	1,310.4	79.6	82.8	6.3	5.9
СН	833.3	837.0	933.2	935.6	-3.7	-2.4	-0.4	-0.3
CL	128.7	123.4	146.2	141.6	5.3	4.6	4.1	3.1
DE	5,016.5	4,340.4	5,160.6	4,545.5	676.1	615.0	13.5	11.9
DK	161.9	160.9	171.0	163.5	1.0	7.5	0.6	4.4
ES	1,900.5	2,038.1	1,914.6	1,894.5	-137.6	20.1	-7.2	1.1
FI	102.0	36.1	117.6	52.7	65.9	64.9	64.6	55.2
FR	3,618.0	2,102.2	3,873.3	2,332.8	1,515.9	1,540.5	41.9	39.8
GB	3,851.0	1,873.1	4,076.6	2,062.8	1,977.9	2,013.8	51.4	49.4
GR	267.0	263.9	194.9	192.6	3.1	2.3	1.2	1.2
IT	3,256.4	2,451.1	3,186.8	2,429.0	805.3	757.7	24.7	23.8
KR	1,286.5	1,286.5	1,585.2	1,585.2	0.0	0.0	0.0	0.0
LU	48.6	48.8	58.3	58.4	-0.2	-0.1	-0.3	-0.2
SE	480.8	340.4	581.4	362.9	140.3	218.5	29.2	37.6
НК	58.2		68.5					
IE		135.8		137.6				
NL								
NO								
AT	463.6	NA	440.6	317.4				
AU	1,790.1	NA	1,759.7	1,514.7				
BR	1,692.1	NA	1,542.8	NA				
IN	1,464.4	NA		NA				
JP	16,078.2	NA	20,115.9	NA				
MX	121.2	NA	122.5	NA				
PA	NA	NA	NA	NA				
PT		NA						
SG	NA	NA	NA					
TR	NA	0.1	NA	0.4				
TW	1,018.6	NA	1,171.5	NA				
US	NA	NA	NA	NA				

Excluding intragroup liabilities, amounts in USD billions

Table A2.3

¹ Local currency liabilities to residents of the reporting country by banks' offices at home (reported by the country in their CBSI and LBSN for home nationality banks). The notation "NA" stands for data not reported and three dots ("...") for data suppressed (ie either restricted or confidential). ² Only for countries from BE to SE, ie does not include suppressed values or those not available in both data sets in either of the periods.

Sources: BIS LBSN; BIS CBSI; authors' calculations.