

# Irving Fisher Committee on Central Bank Statistics

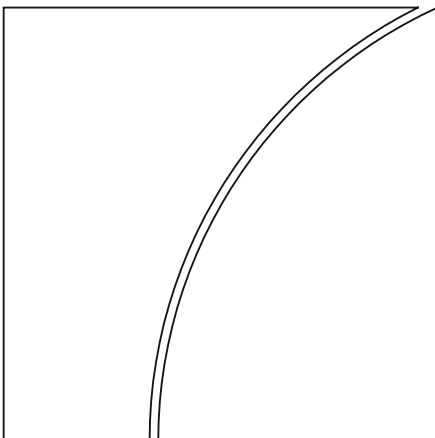
## IFC Bulletin

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### Assessing international capital flows after the crisis

Proceedings of the IFC Satellite meeting organised in cooperation with the Central Bank of Brazil and the Center for Latin American Monetary Studies (CEMLA) in Rio de Janeiro on 24 July 2015

February 2017



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The views expressed are those of the authors and do not necessarily reflect the views of the IFC, its members, the BIS and the institutions represented at the meeting.

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# Assessing international capital flows after the Great Financial Crisis of 2007–09

## Overview of the IFC satellite meeting<sup>1</sup>

Burcu Tunç<sup>2</sup> and Bruno Tissot<sup>3</sup>

### Introduction

The Great Financial Crisis (GFC) of 2007–09 and its aftermath have underlined the important role played by international capital flows from a financial stability perspective. They can exacerbate two main features of the financial system, namely the importance of system-wide linkages and the procyclicality of systemic risk (Crockett (2000)). The development of international finance has indeed multiplied channels allowing for contagion effects of a systemic nature. In addition, external sources of credit expansion, especially in foreign currency, appear to be playing a key role in the build-up of financial fragilities over time, as they often provide the marginal source of funding feeding episodes of financial booms. One view is thus that the development of financial liberalisation and globalisation undertaken since the 1970s has been instrumental in generating a so-called “excess financial elasticity” in the global system (BIS (2015a)).

Several factors have been at play. First, there has been a growing insertion of domestic economies in a world characterised by freely mobile capital flows across currencies and borders (Heath (2015)). Second, financial systems worldwide have changed markedly and have become extremely diversified in terms of actors and products, allowing for greater interaction with the “real economy”. Third, the globalisation of the financial system has heightened the likelihood that financial imbalances occur simultaneously across countries due to the common influence of global factors. This highlights the powerful role played by “global liquidity”, a concept that encompasses the degree of ease in financial conditions (Caruana (2012)) – a key element being the role played by international funding currencies (McCauley et al (2015)).

To assess capital flows and evaluate their effects, the first challenge relates to measurement. Ongoing changes in the nature of financial transactions, the agents involved and the data sources put a premium on closely and constantly monitoring, evaluating and adjusting the methodologies used for measuring capital flows.

<sup>1</sup> The views expressed here are those of the authors and do not necessarily reflect those of the Bank for International Settlements, the Central Bank of the Republic of Turkey or the Irving Fisher Committee on Central Bank Statistics. This overview benefited from comments by Katherine Hennings (CBB).

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<sup>3</sup> Head of Statistics & Research Support, BIS, and Head of the IFC Secretariat (Bruno.Tissot@bis.org).

To explore these issues of key interest to the central banking community, the Irving Fisher Committee on Central Bank Statistics (IFC) held a satellite meeting on “Assessing international capital flows after the crisis” in Rio de Janeiro, Brazil, on 24 July 2015. This IFC event was organised with the Central Bank of Brazil (CBB) and the Center for Latin American Monetary Studies (CEMLA), on the occasion of the 60th World Statistics Congress of the International Statistical Institute (ISI).

The meeting confirmed that the monitoring of international capital flows is of particular relevance when assessing financial stability risks. In his opening remarks, Luiz Awazu Pereira da Silva, CBB Deputy Governor, underlined the importance of analysing the challenges posed by swings in capital flows – especially for emerging market economies (EMEs) such as Brazil that had to face episodes of “sudden stops and floods” – and the adequate policy responses. To this end, having good-quality data was essential. First in line were balance of payments (BoP) statistics: with the methodological changes brought by the sixth edition of the Balance of Payments and International Investment Position Manual (BPM6), public authorities had more accurate, comprehensive and timely information at their disposal (IMF (2009)). Yet Brazil’s experience showed that additional information could be needed, for instance to correctly assess the real (that is, unhedged) exposures of corporates as well as the consolidated positions of their worldwide affiliates. From this perspective, the demand for more data was clearly on the rise.

Echoing these remarks, Turalay Keç, IFC Chair and Deputy Governor of the Central Bank of the Republic of Turkey (CBRT), introduced the discussions by emphasising the importance of measuring cross-border linkages and financial interdependencies. Attention should focus on the challenges posed by the registration of capital flows, the progress achieved so far, remaining data gaps and the associated communication issues for central banks practicing the “dark art” of monetary policy (Blinder (1997)). From this perspective, Jesus Cervantes González (CEMLA) recalled the ongoing important efforts to develop comparable and consistent data supporting the analysis of international finance. Two objectives were key: having reliable and internationally comparable data on international capital flows; and analysing their policy implications. Global cooperation and the exchange of country experiences was instrumental to support these objectives. Hence, there was a clear benefit to continuing to discuss these issues among central banks as well as in various international fora. From this perspective, the ISI 2015 World Statistical Congress was an excellent opportunity to promote such an exchange of views in the global statistical community and beyond.

Correctly analysing the data available was particularly important in the aftermath of the GFC. In his keynote presentation, Gian Maria Milesi-Ferretti (IMF) showed that the post-GFC period had been marked by a large compression in global capital flows and a related stop in the growth of external assets and liabilities (relative to global GDP). Flows to and from advanced economies (AEs) had weakened significantly, and growth in cross-border positions had stalled. A key issue was whether this break in the upward trend of financial integration would last. So far, it had mainly reflected global banks’ deleveraging after the GFC, the impact of euro area fragmentation (ie the decline in intra-euro area claims in the context of the sovereign debt crisis) as well as the indirect effect of the rising share of EMEs in world GDP – since EMEs had smaller external assets and liabilities compared to AEs. Regarding this last factor, there was still substantial heterogeneity among EMEs. One view was that EMEs’ ongoing domestic financial development should lead to their greater integration in international financial markets in the longer run, reflecting, for instance, a more global

presence of their financial institutions and the expansion of their local institutional investor basis.

The various presentations allowed for an in-depth exploration of four main themes. Session 1 focused on the importance, and the related challenges, of the measurement of capital flows. Session 2 reviewed country experiences in implementing the new statistical standards such as BPM6. Session 3 discussed how traditional, residency-based data could be complemented with nationality-based information so as to better capture and analyse capital flows. Session 4 discussed the associated communication challenges and possible “best practices”.

## Session 1: How well are capital flows measured and what are the challenges?

The first session, chaired by Katherine Hennings (CBB), was devoted to the issues and challenges posed by the registration of capital flows. In her keynote speech, Linda Goldberg (Federal Reserve Bank of New York and BIS visiting scholar) argued that credit intermediation had been facing two structural changes in recent decades. One was the increasing volume of international banking activity, with the rise in interbank flows, the expansion of foreign financial affiliates, and the growing role played by bank’s local claims outside their domestic markets. A second key development was financial innovation and the growing role of non-banks in providing credit, raising the need to collect more data on “shadow banks” and complex financial transactions (Kodres (2013)). Certainly, additional information on international capital flows had become available since the GFC, especially in the area of banking supervision. But this was not enough: more official data should be made accessible, new datasets should be explored to assess evolving intermediation patterns, private information sources should be better integrated, and firm-level, micro data should be better mobilised to monitor cross-border spillover effects. International cooperation was crucial to address these challenges, as experienced by the International Banking Research Network (IBRN) initiative bringing together central bank researchers to analyse issues pertaining to global banks.<sup>4</sup>

The country presentations highlighted three main data issues from this perspective: the impact of greater financial integration for EMEs (Turkey); the growing importance of cross-border investments (Germany); and the assessment of systemic risk (South Africa). They showed that, while capital flows are not a new issue, the challenges experienced during and after the GFC called for improving their measurement, not least to better support financial stability analyses and policies.

The first presentation, from the CBRT, discussed the data implications of globalisation for financial and monetary stability policies. First, all capital flows are not equally risky, and banking flows often play a unique role. Second, it is essential to assess the role of push and pull factors in driving cross-border capital flows. Third, financial stability analyses need to consider these flows in gross terms and not just in net terms. All in all, the post-GFC experience of Turkey was that central banks need

<sup>4</sup> See [www.newyorkfed.org/ibrn](http://www.newyorkfed.org/ibrn).

to monitor capital flows in a more detailed, granular way, not least to better frame their policy frameworks and tools.

The second presentation (Deutsche Bundesbank) focused on the growing importance of countries' cross-border assets and liabilities – as recorded in their international investment positions (IIP) – when assessing risks to financial stability. Understanding the dynamics of net external wealth requires looking not only at capital flows (transactions) but also at stocks variables (where valuation effects sometimes can be the dominant force). Yet available data were still incomplete, in particular as regards the duration, instrument and currency composition of international capital flows.

The third presentation (South African Reserve Bank) analysed South Africa's experience with cross-border capital flows after the GFC and the related introduction of methodological improvements (especially related to the compilation of data on foreign direct and portfolio investments, derivatives and international banking). Having better statistics was essential to: (i) understand how an emerging economy like South Africa was exposed to international surges and reversals in capital flows; (ii) identify the domestic factors that were driving the volume of such flows as well as their composition; and (iii) ensure that policies benefit from accurate analysis based on empirical evidence.

## Session 2: Has the registration of capital flows improved with the new statistical standards?

The second session, chaired by Gloria Peña from Central Bank of Chile, acknowledged the improvement brought by the new statistical standards in recent years, especially following the introduction of BPM6. In his keynote speech, Manik Shresthain (IMF) recalled that the growing interest in analysing risks and vulnerabilities using balance sheet data, globalisation and financial innovation (eg securitisation) had been the three main motivations behind the new BoP standards. The measurement of capital flows had been greatly enhanced, allowing the better capturing of, in particular, the wide scope of financial assets and liabilities as well as their composition in terms of sectors and instruments (eg maturity, currency). Yet the experiences of the more than a hundred countries that had implemented the new standards underlined the importance of having an adequate communication strategy, following a stepwise approach and adapting the data collection infrastructure. Another issue was the increasing demand for longer time series, and the IMF had been working specifically on ways to convert previous datasets to the new standards. Looking ahead, it was crucial to demonstrate the value added brought by the new statistics, focus on the remaining data gaps that were policy-relevant, and ensure a coordinated approach across countries – in line with the priorities of the Data Gaps Initiative (DGI) endorsed by the G20 (IMF and FSB (2009)).

The following country presentations underscored the achievements brought by the new statistical standards. As regards Korea, a major issue related to its increasing share of production outsourced to foreign economies ("outward processing"), especially China for electronic products. The presentation from Bank of Korea showed how the implementation of BPM6 was an opportunity to better measure the goods sent abroad for processing as well as merchanting (ie the process whereby a unit in



economy X purchases goods from economy Y for sale in economy Z<sup>5</sup>). The Bank of Korea was working on further improving the related compilation methods by relying less on customs data and more on the information on foreign exchange businesses going through financial institutions – with the Foreign Exchange Information System (FEIS) set up in 1999.

Turning to Brazil, the CBB presentation provided an overview of the data sources and methodology related to the measuring of the country's BoP and IIP in the context of the new BPM6 standards. While FX controls had been removed, the central bank still had to authorise institutions to operate in FX markets, and registration through their FX settlement system had been kept for statistical purposes. A key advantage of these Brazilian data was their granularity (eg transaction-by-transaction), high frequency (daily) and timeliness. In addition, a variety of other data sources (eg administrative datasets and surveys) were also mobilised in order to capture other types of financial transactions (eg non-cash transactions). Needless to say, the data compilation process to deal with the vast amount of granular information was quite complex. The central bank had to set up a specific data warehouse with a dedicated IT process. The implementation of BPM6 was also an opportunity to make progress in specific statistical areas – for example, the measurement of estimates of firms' reinvested earnings, interest payments for domestically issued debt securities and receipts related to debt securities issued abroad by non-resident affiliates of Brazilian companies. Yet these improvements required significant resources and time and resulted in some cases in substantial data revisions, raising internal and external communication challenges.

The paper from the Magyar Nemzeti Bank described Hungarian reporting of FDI statistics, with a focus on the distortive effects of globalisation on the collection, processing and interpretation of statistical data. This mainly reflected the fact that Hungary is a small and open economy with large FDI activity. To address these challenges, FDI data had been supplemented with separate information on special purpose entities (SPEs), capital in transit and asset portfolio restructuring transactions. As regards SPEs,<sup>6</sup> their identification criteria had been clarified and a variety of data sources, especially at the micro level, had been mobilised. Similar work had been conducted to measure capital in transit,<sup>7</sup> which mainly affected less than 20 enterprises operating in Hungary, as well as the impact of asset portfolio restructuring transactions by multinational enterprises (MNEs).<sup>8</sup>

<sup>5</sup> Cf Chapter 14 of the System of the National Accounts (2008 SNA); see European Commission et al (2009).

<sup>6</sup> See 2008 SNA Chapter 4, especially #4.55-6: "There is no common definition of an SPE but some of the following characteristics may apply (...). Such units often have no employees and no non-financial assets. They may have little physical presence (etc.)".

<sup>7</sup> Cf 2008 SNA Chapter 21, especially #21.41: "'Pass through funds' or 'funds in transit' are funds that pass through an enterprise resident in one economy to an affiliate in another economy, so that the funds do not stay in the economy of the affiliate. These funds are often associated with direct investment".

<sup>8</sup> See OECD Benchmark Definition on FDI, fourth edition (OECD (2008)), especially Table A.9.1. The Guide recognises that "(...) financial restructuring is deferred to the research agenda as they require further research".

### Session 3: Should residency-based data be completed by nationality information?

This session, chaired by Gülbin Şahinbeyoğlu (CBRT), discussed nationality-based statistics as a complementary approach to the “more traditional” residency-based framework of the System of National Accounts (SNA) and of BoP statistics. In his keynote speech, Bruno Tissot (BIS and IFC) presented (i) the purpose, (ii) the usefulness and (iii) the challenges of such a complementary approach (see also Tissot (2016)).

The GFC highlighted the need for a global approach when assessing financial stability risks, not least due to the importance of system-wide common exposures/interlinkages. This required the establishment of a framework for assessing financial positions on a so-called “nationality-basis”, that is, at a globally consolidated level. Several steps could be taken in this endeavour (IAG (2015)). One was to classify economic units by sector and nationality. A second was to properly define the concept of control between two economic units, which might depend on the perspective retained (eg statistical standards, business accounting, financial supervision). A third was to look at information aggregated at the “corporate group” level. The completion of these steps could allow the consolidated exposures of global entities to be assessed, especially those related to cross-border and cross-sector positions, even though there were a number of challenges. Some important datasets were already presented on such a nationality basis, underlining the usefulness of this approach for policy purposes – in particular the Basel-based initiatives to set up consolidated datasets in the area of shadow banking (FSB (2015)), international debt and banking statistics, and derivatives statistics (BIS (2015b)).

The presentation from the Board of the Federal Reserve System also supported the view that the SNA/BoP residency framework could be usefully complemented by a nationality-based approach. On the one hand, residency clearly mattered, especially from a policymaker’s perspective. On the other hand, it was important to look at exposures on an ultimate risk basis and also to identify cross-border controlling relationships. Yet one should not assume that a “controlling parent” would always support its subsidiaries in case of difficulties. Hence, the parent group should not necessarily be considered as the *ultimate obligor* of its affiliates, as it might be only a source of *potential* support. Nevertheless, considering this information was important for financial stability analyses, which usually focus on the assessment of the upper bound of risk exposures. Moreover, a consolidated approach – as in the area of banking supervision – was necessary to capture all indirect exposures (McGuire and Wooldridge (2005)).

The presentation from the CBB highlighted the importance of considering the growing internationalisation of EMEs’ financial markets after the GFC, especially related to foreign residents’ holdings of EMEs’ domestic debt securities and issuance by the foreign affiliates of EME corporations. This development produced a sizeable gap between the residency- and nationality-based estimates of Brazilian corporates’ debt issuance, as also shown by the BIS debt securities statistics (Gruić and Wooldridge (2015)). The use of available micro information showed that: (i) almost one third of this gap represented the global issuance of financial institutions (which is properly monitored by supervisors as they act on a consolidated basis); (ii) the vast majority of the rest of the gap reflected intercompany loans, especially by Brazilian

commodity exporters searching for better funding conditions abroad; and (iii) only a minor part of the related FX exposures were unhedged.

The presentation from the Bank of Mexico highlighted the importance of analysing the origin and destination of FDI flows to understand the globalisation process and its impact on EMEs. This required “looking through” the controlling chains and identifying the ultimate investors. It was particularly illuminating in Mexico, where foreign-owned firms represented a significant part of the domestic stock exchange and local debt issuance; symmetrically, Mexican firms were very active in third countries’ financial markets. The new statistical standards allowed FDI flows from counterparty countries on both an ultimate investor and an immediate investor basis to be compared. One conclusion was that the location of the origin of FDI funding was less useful for policy analysis compared to information on the nationality and sector of those using these funds.

## Session 4: What are the communication challenges?

The panel session, chaired by Luiz Awazu Pereira (CBB), showed that in addition to its analytical and measurement challenges, there were indeed several communication challenges regarding the new standards for measuring capital flows. A key aspect was to present the related improvements to the public and make sure that the dissemination of the new data and associated metadata was supported by adequate communication to facilitate their understanding by the public.

The first panel intervention (Brazilian Institute of Economics – Getulio Vargas Foundation) recalled that the IMF had formulated “best practices” for communicating on BPM6. Although each country had its own characteristics, understanding users’ needs was a key requirement. The communication strategy of BoP compilers should thus address the main issues of importance for these users, namely the existence of data gaps, the size of the revisions, the time length of the series, and the ability of the statistics to “tell a story”. Specific communication plans should be set up to reach out to the user community before, during and after the implementation of the new standards. Compilers should think as data users, and focus their attention more on data gaps and on merging those competing datasets that are based on old and new standards. Introducing a long back-run of historical data and providing overlap periods was essential; this often required accessing more granular data.

The second panel presentation, by the ECB, presented the euro area’s experience in dealing with communication and analysis challenges raised by the new BPM6 standards. These challenges related to: (i) the introduction of new statistical methodologies; (ii) changes in compilation systems and practices; (iii) additional data sources; and (iv) new infrastructure in terms of data codification (eg Data Structure Definitions, DSDs) and transmission (eg SDMX<sup>9</sup> standard). Communication to internal users as well as the public highlighted several issues. First, the new standards had led to sizeable revisions for the data themselves – with some countries’ revisions to the estimates of their current account balances and net international investment positions representing up to 5% and 75% of GDP, respectively. Second, it was important to communicate not only on transactions and flow figures, but also on

<sup>9</sup> Statistical Data and Metadata eXchange; see IFC (2016).

stock variables. Third, specific attention should be devoted to communicating on errors and omissions.

The third intervention (Bank of France) started by paraphrasing Hal Varian (Google) who argued that statisticians had a great future in terms of job opportunities. But this required three main objectives: to ensure that statisticians were highly qualified experts capable of extracting information value from data; to develop a statistical service-oriented process with a customer-minded manner; and to have a proactive communication strategy to ensure that both internal and external users could access and understand the data themselves. As regards internal users, the Bank of France had set up a dedicated data warehouse for pooling a vast amount of unstructured data, based on open-source "big data" technology and with an adequate governance framework to ensure effective data-sharing. Communication to external users should be monitored by both actual data producers and communication specialists.

The last panel presentation (Narodowy Bank Polski) described the BPM6 implementation in Poland, focusing on the analytical challenges and related lessons in terms of communication strategy. As regards the challenges faced, and in addition to large resource needs (eg IT), one was the difficulty to have longer time series with sufficient back data; another was the size of the revisions. As regards communication, a major recommendation was to emphasise the new analytical possibilities offered by the BPM6 standards: for instance, for better understanding Poland's international investment position as well as the sources of FDI (eg by comparing flows from direct investor and ultimate investor countries).

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## BCB / CEMLA / IFC Satellite meeting at the ISI 60th World Statistical Congress on “Assessing international capital flows after the crisis”, Rio de Janeiro, 24 July 2015

### Opening remarks by Luiz Awazu Pereira da Silva, Deputy Governor, Central Bank of Brazil

Ladies and Gentlemen, Good morning.

It is an honor and a great pleasure for me to make the opening remarks of this meeting at the 60th ISI World Statistical Congress.

I would like to thank Turalay Kenç, chairman of the Irving Fisher Committee on Central Bank Statistics of the BIS and Deputy Governor of the Central Bank of the Republic of Turkey, and Jesus Cervantes González, representative of CEMLA (Real Sector and Program of General Principles Coordinator), for sharing the organization of this important event with the Central Bank of Brazil (BCB).

I also welcome all the lecturers and participants, especially those from abroad, including the members of the Irving Fisher Committee on Central Bank Statistics, representatives from the central banks that participate in CEMLA, officials from the IMF, representatives from the Community of Portuguese Language Countries, researchers, statisticians, and analysts of the private sector.

This seminar is a great opportunity to assess the challenges posed by swings in capital flows and their proper registration, in light of the methodological changes set out in the sixth edition of the Balance of Payments and International Investment Position Manual.

First, I will share with you our views on how the dynamics of capital flows in the aftermath of the global financial crisis (GFC) have evolved. Then I will discuss the Brazilian experience in managing and registering external sector data. And finally I will say a few words on the current situation of the Brazilian economy.

**So beginning with the first topic, the conduct of economic policy, especially in emerging market economies (EMEs), always had to address the challenges posed by the behavior of capital flows**, particularly in periods of excess liquidity or abrupt reversals, what is called in the literature “sudden stops and sudden floods” or periods of “risk-on and risk-off”. The textbook recommendation to sail through these natural periods of mood swings is well- established and that’s what we’ve been using in Brazil.

First, by strengthening a well-tested framework, a macroeconomic tripod consisting of: keeping a flexible exchange rate regime (ERR); ensuring a sound fiscal

stance that generates sustainable levels of indebtedness; maintaining low and stable inflation using, for example, an IT framework. Second, to avoid the transmission of external financial instability into our domestic financial markets, keeping a solid financial system in terms of capital, provisions, liquidity and regulations; pairing it with an intrusive supervision capable of using relevant and timely information (a good market infrastructure) to detect vulnerabilities. Third, addressing any surge of financial systemic risk using macro-prudential instruments. Fourth, while keeping the floating ERR as a 1st line of defense, smoothing excessive volatility that can affect financial stability. Finally and fifth, maintaining macroeconomic and financial stability is necessary but working on growth potential through structural reforms is paramount. Not only it strengthens solvency ratios and fundamentals but it also allows more room for maneuver for social improvement which, in turn, obviously affects positively the stability of institutions and social welfare. These are some good and tested policies and rules to face capital flow volatility and to build macro-financial stability.

**Let me now discuss the Brazilian experience in managing and registering external sector data.** Against this backdrop, naturally, having good quality data on capital flows, available to the policymaker in a timely manner, has become crucial. So this seminar is very important and well-timed.

What's really new? Well, the GFC and especially unprecedented easy monetary conditions, in part associated with unconventional monetary policy in advanced economies, have exacerbated the well-known episodes of capital floods and sudden stops that usually affect emerging markets.

We were naturally used to, and in need of, foreign savings in the form of capital flows. The problem is not capital flows per se, but excessive volume and intensity. Despite sound macroeconomic policies and adequate local financial regulation, too much capital inflows might lead to excessive credit expansion, overheating, financial bubbles, real exchange rate appreciation unwarranted by fundamentals, and rapid current account deterioration. If unaddressed, it might result in financial crises. This is not a problem only for EMEs, but, as we, in EMEs, are more susceptible to larger swing in capital flows, it certainly has shaped our policy responses and experiences.

Most, if not all, EMEs had to use some form of sterilized interventions to accommodate excessive capital inflows in order to safeguard financial stability. In Brazil, interventions were part of a multipronged policy response to intense capital inflows, together with a set of macroprudential measures that helped curtail excessive exuberance in domestic credit markets, driven by the cross-border spillovers from large-scale asset purchases. These interventions were not designed to affect our exchange rate regime but to keep market volatility from feeding self-reinforcing dynamics that could potentially threaten our financial stability.

These interventions also allowed us to accumulate when market conditions warrant, a buffer in international reserves. This buffer has helped us withstand the spillovers from changing global financial conditions and in particular the process of unwinding of unconventional monetary policies in the U.S.



The global excess liquidity has also facilitated an expansion of foreign-currency liabilities of corporates. Brazil was no exception, but the corporate debt-to-GDP ratio is in line with other emerging countries and below the numbers for advanced economies.

The current share of foreign-currency-denominated debt is about 42% of total debt, but most of it is not really exposed to FX risk<sup>1</sup>. Almost all corporate foreign-currency debt is owed by companies hedged against FX risk. They are major exporters, have substantial assets abroad or have hedged their exposures through derivatives. According to assessment of the BCB, the total debt exposed to FX risk is not relevant. The overall debts that are in fact exposed to FX risks amounts to 7% of total corporate debt.

In spite of the variety and complexity of exposure to exchange rate risks, the Central Bank of Brazil (BCB) is capable of detecting excessive risk exposure in a timely manner, leaving enough room for adequate measures. Brazil has a well-developed system for registering financial operations and especially derivatives<sup>2</sup>. This system was improved and broadened after the 2008 financial crisis, and the central bank worked closely together with participants in our market infrastructure in order to make sure data is provided in a useful form for financial stability monitoring purposes. As a result, the central bank is able to identify the strategies in use and to map out potential risks.

In Brazil, capital flows have remained strong, reflecting the strong fundamentals of our economy. Direct investment in the country has amounted to USD 81.9 billion over the last twelve months (June 2015), equivalent to 3.8% of GDP, financing most of the current account deficit. In turn, net portfolio investments have reached USD 36 billion.

As you know, Balance of Payments statistics are key for policy making. In Brazil, the regular production of the Balance of Payments statistics dates back to 1947, with a partnership between Banco do Brasil — a public commercial bank — and Getulio Vargas Foundation (FGV). In 1951, Sumoc — the monetary authority of that time — took the responsibility of generating those statistics, a responsibility that was kept by the BCB, which celebrates fifty years of existence this year.

The Brazilian Balance of Payment and other external statistics are compiled by the Balance of Payments Division of our Economics Department (DIPEC). The new Manual's guidelines were implemented last April. The Balance of Payment figures are

<sup>1</sup> Low exposure of domestic firms to FX risk is in part a result of the hedge provided by the BCB through the FX swaps program. With over US\$ 370 billion in international reserves, the central bank offered FX swap auctions on a regular and daily basis. The program was adopted in August 2013, and was progressively phased out until March 31st, 2015, when it was no longer extended. Swaps expiring after May 1st 2015 have been rolled over in a proportion consistent with market conditions. The program was successful in preserving financial stability, providing forex hedge to private agents. The outstanding stock reached USD 115 billion and currently is at USD 108 billion. The program was also important to enhance predictability and confidence in the Brazilian economy during the "tapering tantrum".

<sup>2</sup> The BCB is chairing a FSB Peer Review on OTC Derivatives tasked by the G20.

released on a monthly basis, three or four weeks after the end of the reference month, according a schedule announced in the previous year.

Our international transactions reporting system allows generating a broad range of information in a timely manner, including for capital flows, very useful for the policy-making process. It is a very granular system, whose origin goes back to Brazil's history of foreign exchange controls. Controls were lifted years ago, but we have kept the system, mainly for statistical purposes.

Nowadays, in a financially-integrated world, the importance of Balance of Payment statistics has become even greater. However, the increasing international flows and interconnections between firms make the countries' boundaries less distinct. On this matter, one of the issues is the differences between the concepts of residence and nationality, which will be the topic of one of the sessions.

Furthermore, the role played by the Balance of Payment statistics in policy making has broadened with the importance that financial stability has gained in central banks' mandates. In fact, the global financial crisis highlighted the need of broader datasets for policy makers and supervisors to better assess the evolution of the economy, and act in a proper and timely manner, resulting in projects such as the G20 Data Gaps Initiative and the IMF SDDS Plus. More than ever, it is important to get accurate, consolidated, comprehensive and timely information.

Therefore, the demands, and the pressure, on the institutions responsible for those statistics have intensified. The task is not simple. For instance, one issue is how to have access to data outside your own jurisdiction. Another concern is avoiding excessive compliance costs.

Furthermore, the changes brought by the new Manual need to be well understood by the public, at different levels of depth, depending on the group involved. This process usually takes time, since people are used to reading and analyzing the old methodology statistics. As part of our communications strategy to overcome those problems, we have published methodological notes describing the changes.

**Finally and third, let me say a few words about the current situation of the Brazilian economy.**

Brazil is undertaking in 2015 a necessary and classic adjustment process, tightening fiscal and monetary policies and realigning relative prices (e.g., regulated prices vis-a-vis market prices and foreign vis-a-vis domestic prices). This adjustment process is aiming at reducing macroeconomic imbalances such as our current account deficit, re-building our fiscal space used during our counter- cyclical response to the GFC and re-directing our economy towards a new sustainable growth cycle. Unsurprisingly, the adjustment process is taking a toll on short-term growth. We are carefully observing these developments that derive from our policy stance but have also been compounded by the effect of non- economic events. Like any adjustment process, it carries sacrifices for many but is designed to build a solid base for a new cycle of sustainable growth in Brazil for all. Monetary policy's best contribution for Brazil's growth prospect is to help, by bringing inflation to our target and anchoring

it, the consolidation of a stable and favorable macroeconomic scenario in longer term horizons.

Initial results in 2015 show that the adjustment process is working. For example, there has been an improvement in our current account balance. The BCB also has anchored inflation expectations in medium-term horizons, in 2017, 2018 and 2019, right on our 4,5% p.a. target. On the other hand, the recent double relative price adjustment impacted inflation in the first half of 2015, increasing 12-month accumulated inflation. Inflation expectations are still about 90 bps above our target by the end of 2016.

The objective of monetary policy is precisely to avoid this impact of short-term inflationary pressure in 2015 to be transmitted to 2016 and beyond. Monetary policy can and should contain the second-round effects of price hikes and to circumscribe them to this year of 2015. For this reason, monetary policy is and should continue to remain vigilant to ensure the convergence of inflation to the 4.5% target at the end of 2016. Moreover, efforts to strengthen fundamentals should persist, for Brazil to be prepared for a future Fed lift-off benefitting from a strong domestic policy stance.

In addition, despite some undeniable positive results, recent developments show that there are new risks to the inflation outcome for 2016 that might affect longer-term horizons. The BCB evaluates that the scenario of inflation convergence to 4.5% in 2016 has been producing some positive signals showing that we are on the right track. However, progress so far in fighting inflation need to be balanced against more recent risks that threaten our central objective in the relevant horizon for monetary policy. Therefore, we should remain cautious at this particular juncture. It is paramount to be vigilant to make sure that monetary policy reflects the balance of risks as of now and remains adequately calibrated to attain our objective.

To end my opening remarks, let me thank you again for your presence. I am sure that the presentations and discussions that you will have during the day will be very useful for the participants. I wish you a very productive seminar.

## BCB / CEMLA / IFC Satellite meeting at the ISI 60th World Statistical Congress on “Assessing international capital flows after the crisis”, Rio de Janeiro, 24 July 2015

### Opening remarks by Turalay Kenç, IFC Chair and Deputy Governor, Central Bank of the Republic of Turkey

Dear Mr Governor, dear distinguished participants,

I have the great pleasure to welcome you all to this Satellite meeting on “Assessing international capital flows after the crisis”. As you know the objective of the Irving Fisher Committee on Central Bank Statistics (IFC) is to promote the discussion of statistical issues that are of interest to central banks, especially when they have implications in terms of economic, monetary and financial stability. We are therefore delighted to be here in Rio de Janeiro to discuss the key topic of international capital flows. On behalf of IFC, I would like to thank Central Bank of Brazil and the Centre for Latin American Monetary Studies for organising and hosting this important event.

I would also like to take this opportunity to extend my appreciation to all IFC Executives and members, esteemed guests, speakers and participants, who are contributing to this meeting. This meeting is organized in partnership with the ISI 60th World Statistics Congress which will be held next week here in Rio. A key objective of the ISI is to enable members of the statistical community to exchange views and promote new research in the wide range of statistical fields and applications. The IFC is particularly willing to support the ISI in this endeavour, and in 2013 we signed a Memorandum of Understanding with the ISI to become an affiliated member of ISI and further solidify our support. In the meantime, a large number of central banks have also applied for ISI membership. I am happy to note that next week the IFC, and the central bank community more generally, will actively participate in the ISI Congress by organising several sessions on various topics such as derivatives, financial accounts, property prices etc.

The topic of this year’s satellite meeting, “Assessing international capital flows after the crisis”, is very timely and important for the central banking community. As was particularly obvious during and after the global financial crisis, capital flows can result in sizeable macroeconomic fluctuations and triggering financial instability both in advanced and emerging economies. Hence the measurement of interconnectedness across borders, global capital flows, and financial interdependencies is crucial in informing the debate on appropriate policy responses. From this perspective, the subjects covered and questions addressed in this meeting will provide excellent feedback for the use of macroeconomic policies - including monetary, fiscal and prudential policies – to ensure domestic but also global financial stability.

Today’s seminar is divided in four parts covering the four main questions faced by policymakers in relation with to international capital flows.

*The first question* relates to the measurement of capital flows and the challenges they pose. Thus, the first session with the keynote address by Linda Goldberg and various country presentations will set an excellent stage for the discussions of the impact of capital inflows on macro-financial fluctuations and vulnerabilities – including excessive credit growth, asset price booms, financial imbalances and spill-over effects. Of course, a key issue is how capital flows are registered, measured and interpreted so as to allow for a timely and proper design of monetary and macroprudential policies.

*The second question* addressed in the following session is whether we have made progress regarding the registration of capital flows with the new statistical standards like BPM6. I believe that we need to carefully assess the country experiences and challenges with the transition to these new standards. BPM6 has significantly changed the way certain aggregates are measured and this has important implications for macroeconomic analysis. Given that we live in a far more integrated world now, adequate cross-country comparisons and consistency in BOP data is essential for policy coordination when needed. I am particularly delighted to note that Manik Shrestha, who is the key person in charge of BOP issues at the IMF, is with us today to present his views.

*The third session* is a bit provocative, suggesting that despite all the recent statistical improvements we may still have further statistical efforts to do to correctly capture and analyse international capital flows. I am happy to note that the BIS as well as a number of central banks will present ongoing initiatives that aim at complementing our “traditional”, residency-based view of the economy with other type of information. Should we only look at the operations of the economic units based in our respective countries in today’s world characterised by globalised supply chains and surging cross border financial flows?

The last and fourth session will pay particular attention to communication issues. You may recall Mr Blinder reference to “practicing the dark art of monetary policy”<sup>1</sup>; a key component of this dark art is indeed communication, and this is particularly true for central banks confronted to powerful and often volatile external capital flows. So, the last session with country panel will give an excellent opportunity to discuss the major policy challenges we encounter, offer some guidance on the best communication practices, and understand better how policy actions interact with market participants.

Lastly, we will have the pleasure during our lunch break to listen to Gian Maria Milesi-Ferretti, Deputy Director of the IMF Research Department, who has kindly accepted to participate in this meeting – underlining the key relationship that exist between the IMF and the central banking community.

I wish all of you a productive day and want to thank you for your attention.

<sup>1</sup> Blinder (1997, p. 17) “Having looked at monetary policy from both sides now, I can testify that central banking in practice is as much art as science. Nonetheless, while practicing this dark art, I have always found the science quite useful.”

BCB / CEMLA / IFC Satellite meeting at the ISI 60th  
World Statistical Congress on “Assessing  
international capital flows after the crisis”,  
Rio de Janeiro, 24 July 2015

Opening remarks by Jesus Cervantes González, Coordinator  
of the Real Sector and General Principles for Remittance  
Program, Center for Latin American Monetary Studies  
(CEMLA)

I would like to give a warm welcome on behalf of CEMLA to all the speakers and participants of this Workshop on “Assessing International Capital Flows after the Crisis”. I would also like to thank Banco Central do Brazil for being the host of this Seminar and for the amazing facilities provided to us for its development. Also, I would like to thank the Irving Fisher Committee from BIS for its significant contribution to the development of this Seminar.

The experiences of several countries during the financial crisis of 2007 - 2008 made clear the important role capital flows can play in triggering a process of financial instability, with impacts at country, regional and global levels. During that period, it became evident the high degree of integration of economies and their markets, especially the financial one. In particular, it stood out that capital flows can have **significant macroeconomic impacts** due to its effects on the performance of the economy and exchange rate behavior; **support the building up of vulnerabilities**, stimulate high credit growth, encourage risk appetite, contribute to an asset price boom and create financial imbalances; Such flows **facilitate international spillover effects** through cross-border banking as well

Consequently, both in academia and economic policy decision making environments, it has been recognized the importance of the presence of large capital flows. The referred financial crisis highlighted on the one hand the need for timely and accessible information and on the other hand the need of new information that was required, in order for the policy decision makers to be in a better position to assess the stability of the financial system through macro-prudential analysis. In particular, in the case of cross-border capital flows, the financial crisis highlighted the importance of having knowledge of various characteristics of these flows, beyond its magnitude, and the relevance of the analysis of the balance sheets (positions) to have early warning indicators that allow a proper assessment of the sustainability and vulnerability issues.

Among the capital flow characteristics to know are their maturity and volatility; their currency composition; their composition in gross and net terms; the residence and nationality of debtors and creditors; the timely identification of the emergence of new financial instruments and their characteristics; as well as the sectoral origin and destination of the capital flows. In this context, it is worth to mention the importance of having a system of sectoral accounts. For example, the global financial

crisis highlighted the fact that incomplete or unavailable information on government finances and / or its low quality can adversely affect the financial stability of a country and, depending on the relevance of this sector in the global context, could have spillover effects on other countries.

It is worth to mention that the number of variables and indicators to measure and analyze can increase depending on the characteristics of each country, which rises another important issue: How to inform to the public or to the analysts about which variables they should focus their assessments. Also, whether a communication policy should be implemented or a simple disclosure of the authorities' analysis fulfills the necessity.

In recent years, there has been significant progress in the development and adoption of international standards tailored to meet the information needs. In achieving this result, an important role has been played by the G20 Data Gaps Initiative (DGI) whose objective is, as you know, to improve the availability and comparability of financial and economic information so that supervisors and policy decision makers have better elements to assess the evolution of the economy, the inherent risks and, consequently, to carry out better-informed policy decisions.

We must acknowledge the efforts of several international organizations to produce a methodological system that encourages the development of consistent and comparable statistics of variables which constitute interconnecting channels among several economies through cross-border financial linkages. In those efforts, we must mention the BIS international banking statistics; the issuance of the sixth edition of the Manual on Balance of Payments and International Investment Position; the Coordinated Direct Investment Survey and the Coordinated Portfolio Investment Survey. These information systems incorporate a number of adjustments in the guidelines for measuring different aggregates of those external statistics in order to meet the new information needs, giving equal significance to the measurement of the variables' (stocks) positions as to the flows, stressing the importance of consistency between both valuations.

The objective of this seminar is aimed to two aspects of capital flows: 1) its measurement considering aspects of reliability and international comparability; and 2) its analysis, in terms of their implications for financial stability and monetary policy.

The subject of the different sessions is particularly aimed at assessing the degree of progress that has been achieved in the availability of information; in its international comparability and reliability by applying the new standards of measurement; as well as to learn from those countries that have implemented some of these new measurement standards, in terms of its usefulness for financial stability analysis and policy decision making within the macro-prudential approach. Additionally the sessions give attention to the identification of the remaining challenges.

It is important to recognize that the achievements of different countries in compiling all the new data required to an adequate assessment of international capital flows has implied additional resources, both financial and human, and in some cases it has also been required the adjustment and strengthening of the regulatory framework. We hope that this workshop represents an excellent opportunity for a useful exchange of experiences among participants regarding the challenges that have been faced on these issues and the solutions adopted.

IFC Satellite meeting at the ISI World Statistics Congress on *"Assessing international capital flows after the crisis"*

Rio de Janeiro, Brazil, 24 July 2015

## Global capital flows and external positions since the global financial crisis<sup>1</sup>

Gian Maria Milesi-Ferretti, International Monetary Fund

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<sup>1</sup> This presentation was prepared for the meeting. The views expressed are those of the author and do not necessarily reflect the views of the BIS, the IFC or the central banks and other institutions represented at the meeting.

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# GLOBAL CAPITAL FLOWS AND EXTERNAL POSITIONS SINCE THE CRISIS

The views expressed are those of the author and not necessarily those of the IMF

Gian Maria Milesi-Ferretti  
*International Monetary Fund and CEPR*

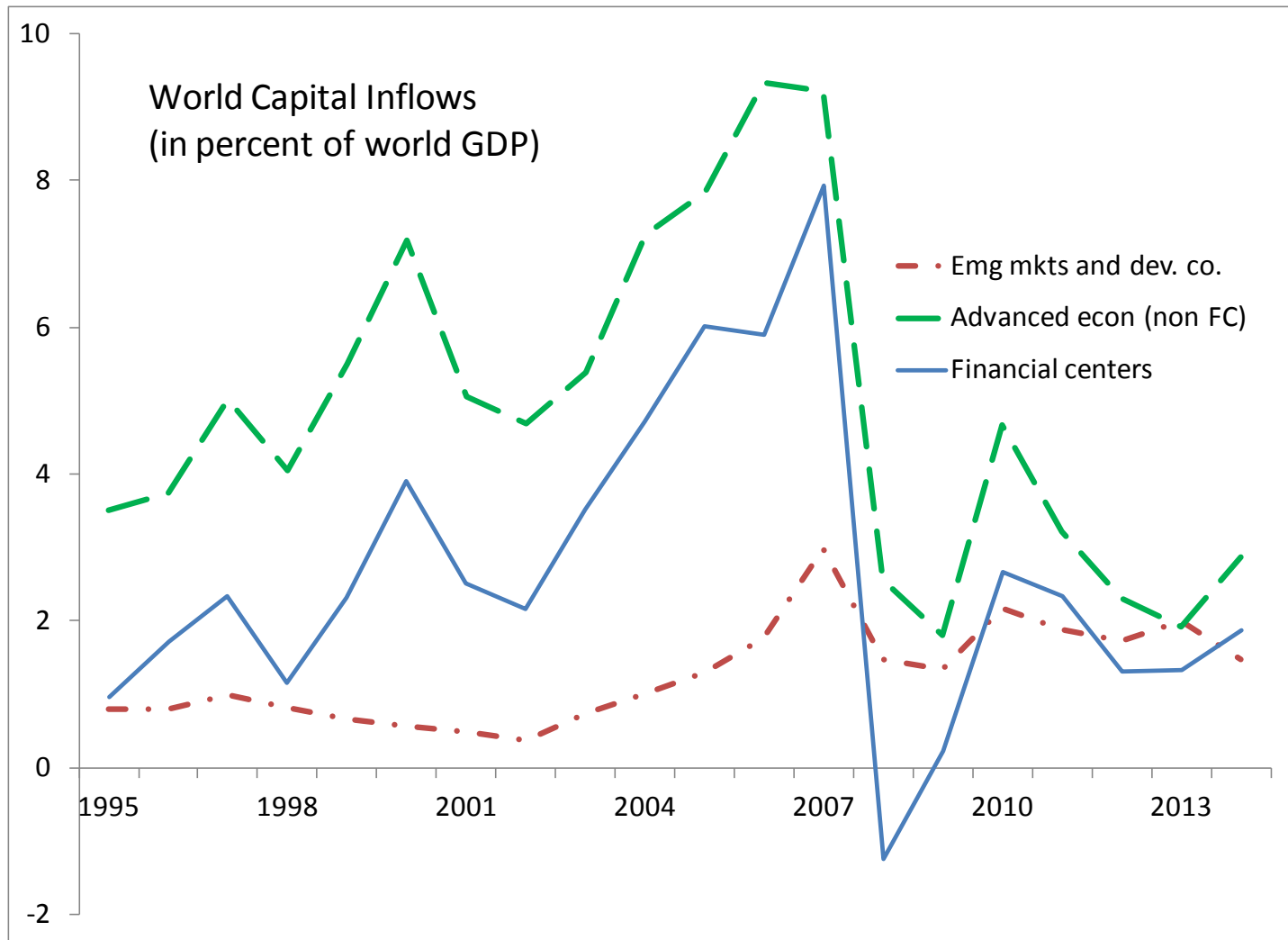
# Since 2007....

- Compression in global current account imbalances....
- But still expanding net asset and liability positions.
- Large compression in global capital flows
  - ▣ Decline in flows to and from AEs...
  - ▣ Resilient flows to EMs (particularly FDI, portfolio)
- Stop to the growth in external assets and liabilities as a share of global GDP

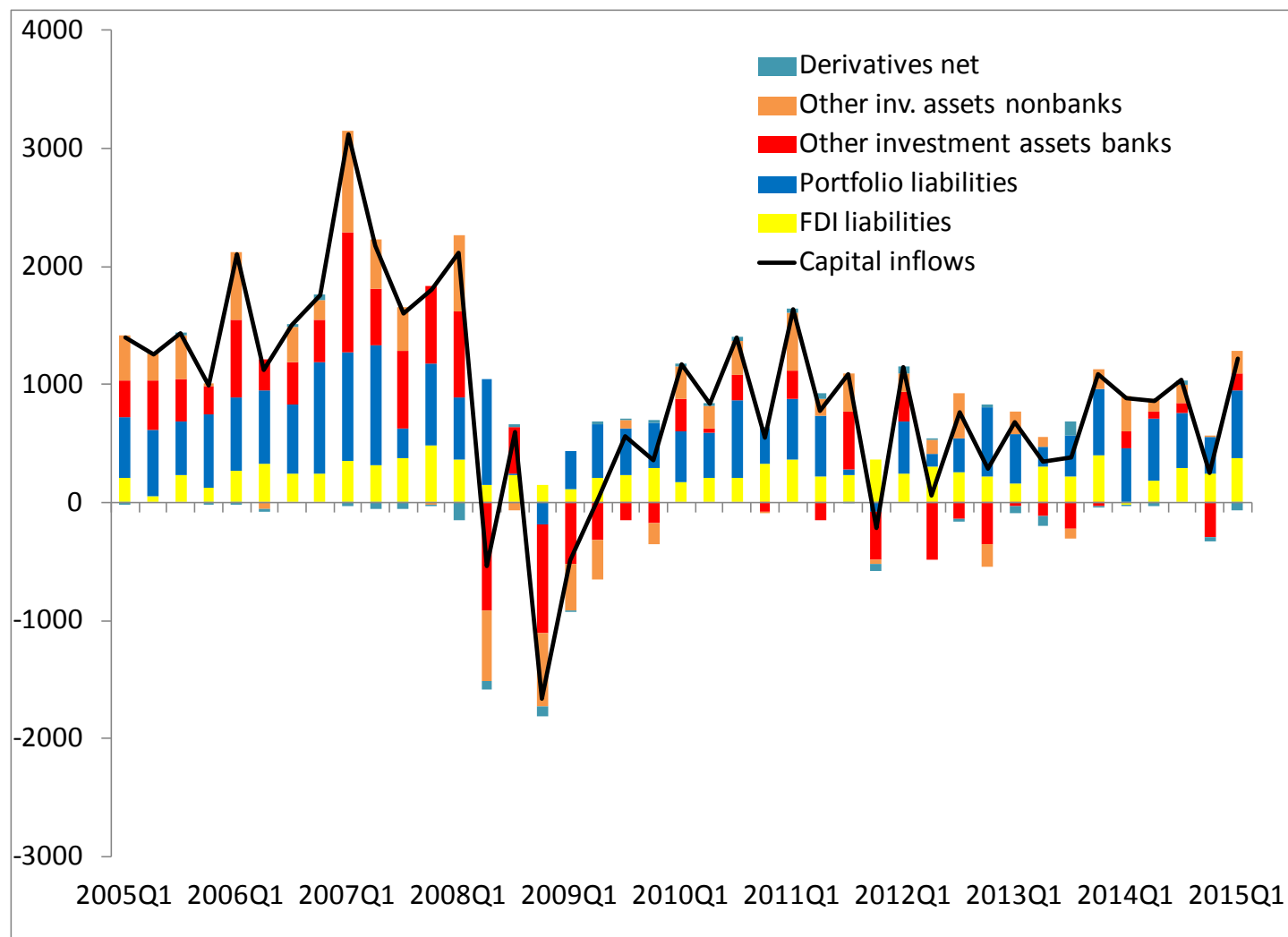
# Presentation

- What has happened to “global financial integration” since the crisis?
- How has the external balance sheet of emerging markets changed?

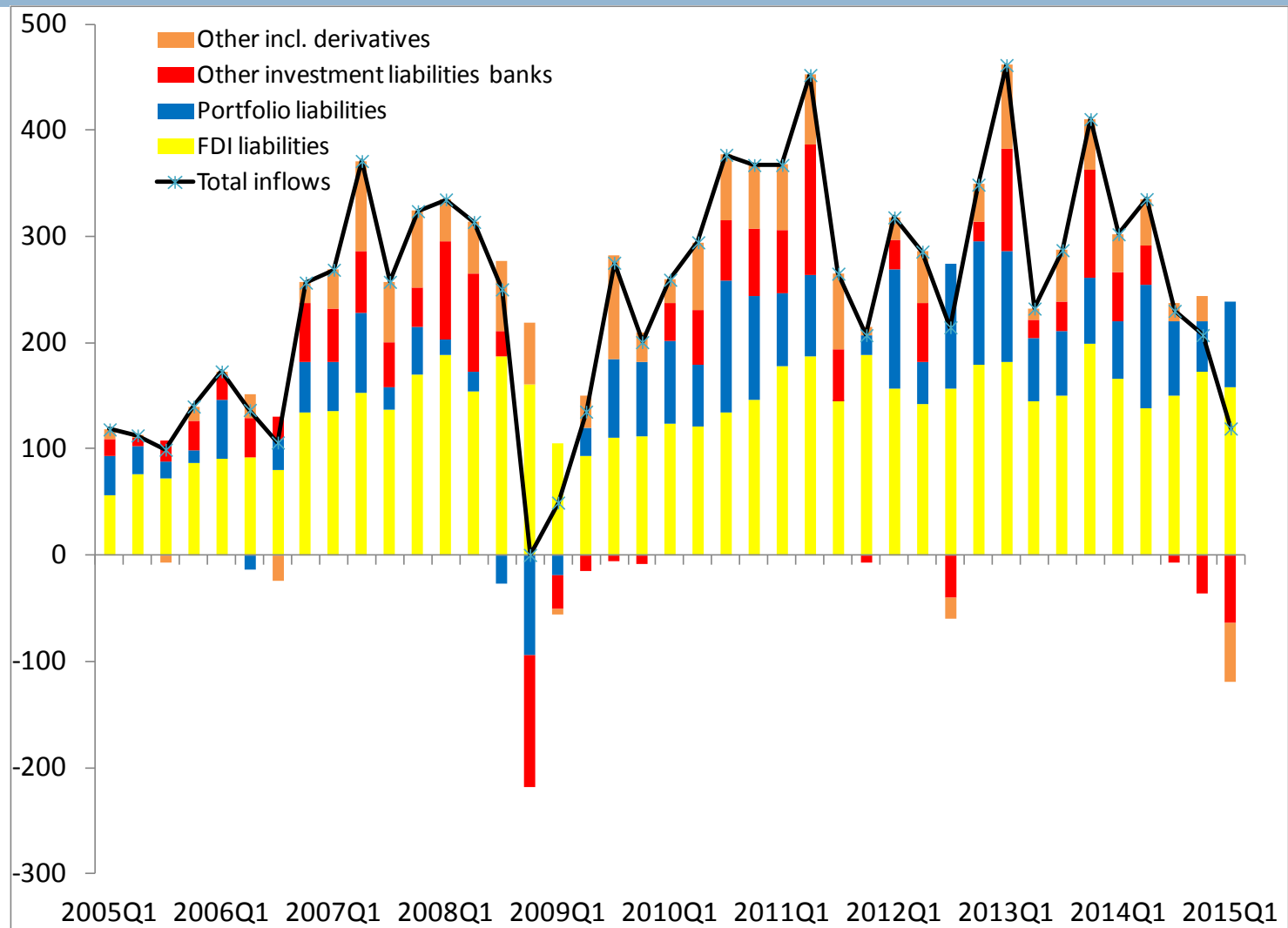
# Capital flows have slowed after the crisis esp. for advanced economies, financial ctrs



# Weak capital flows to and from adv. economies

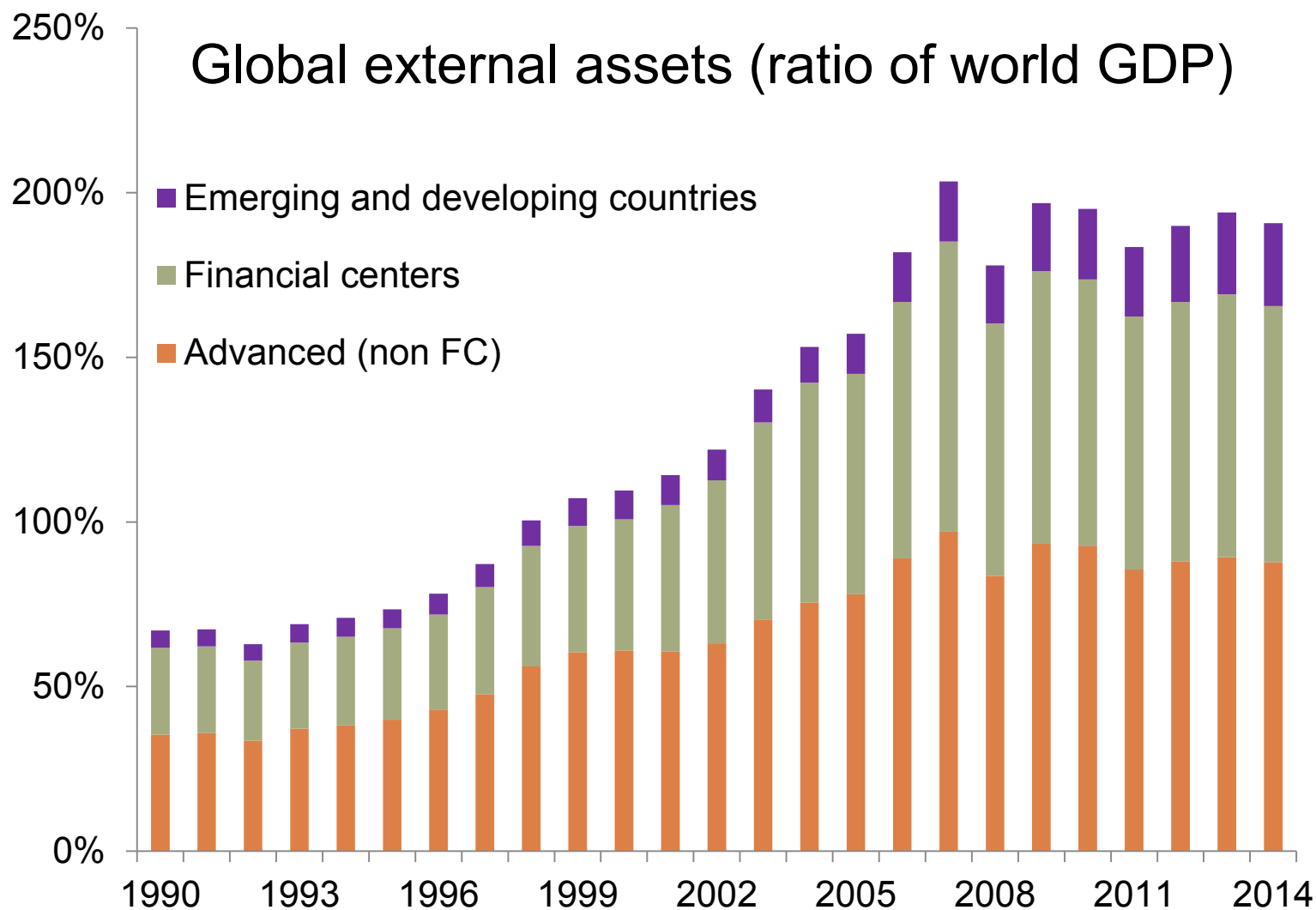


# Flows to emerging markets have been strong... ...but declining in recent quarters

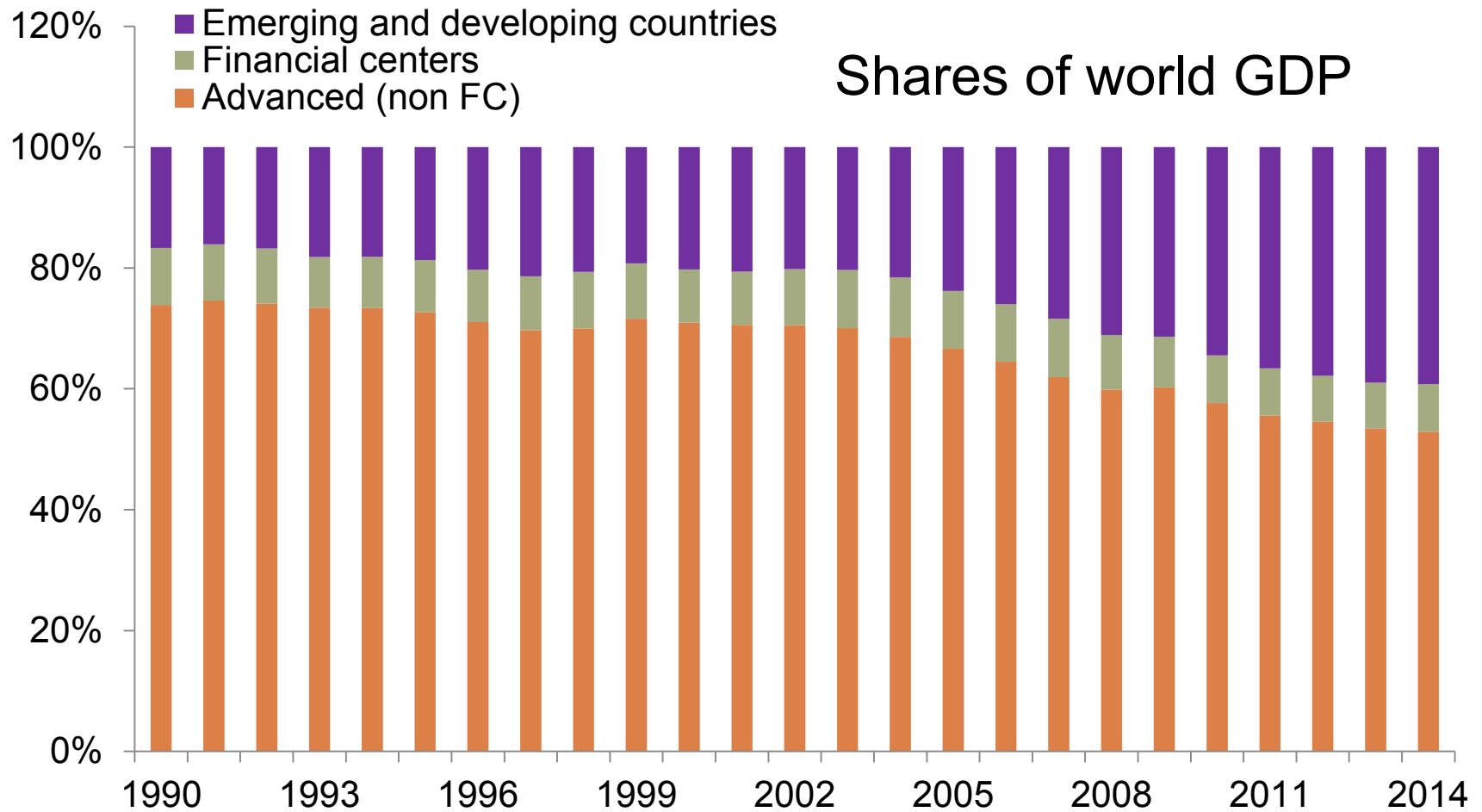


# Growth in cross-border positions stalled

## Advanced economies and financial centers still dominate



..despite the rising share of EMDEs in world GDP

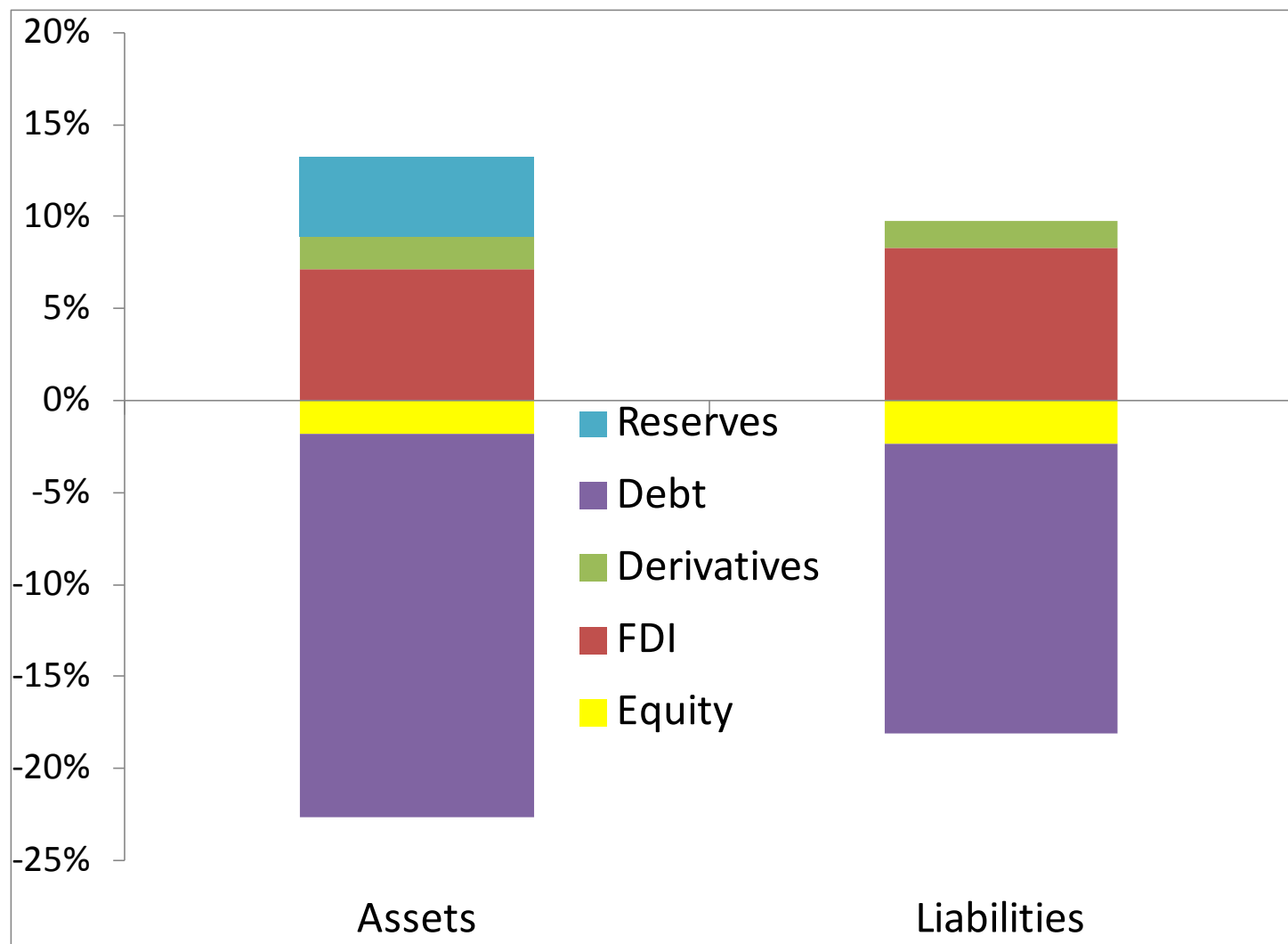




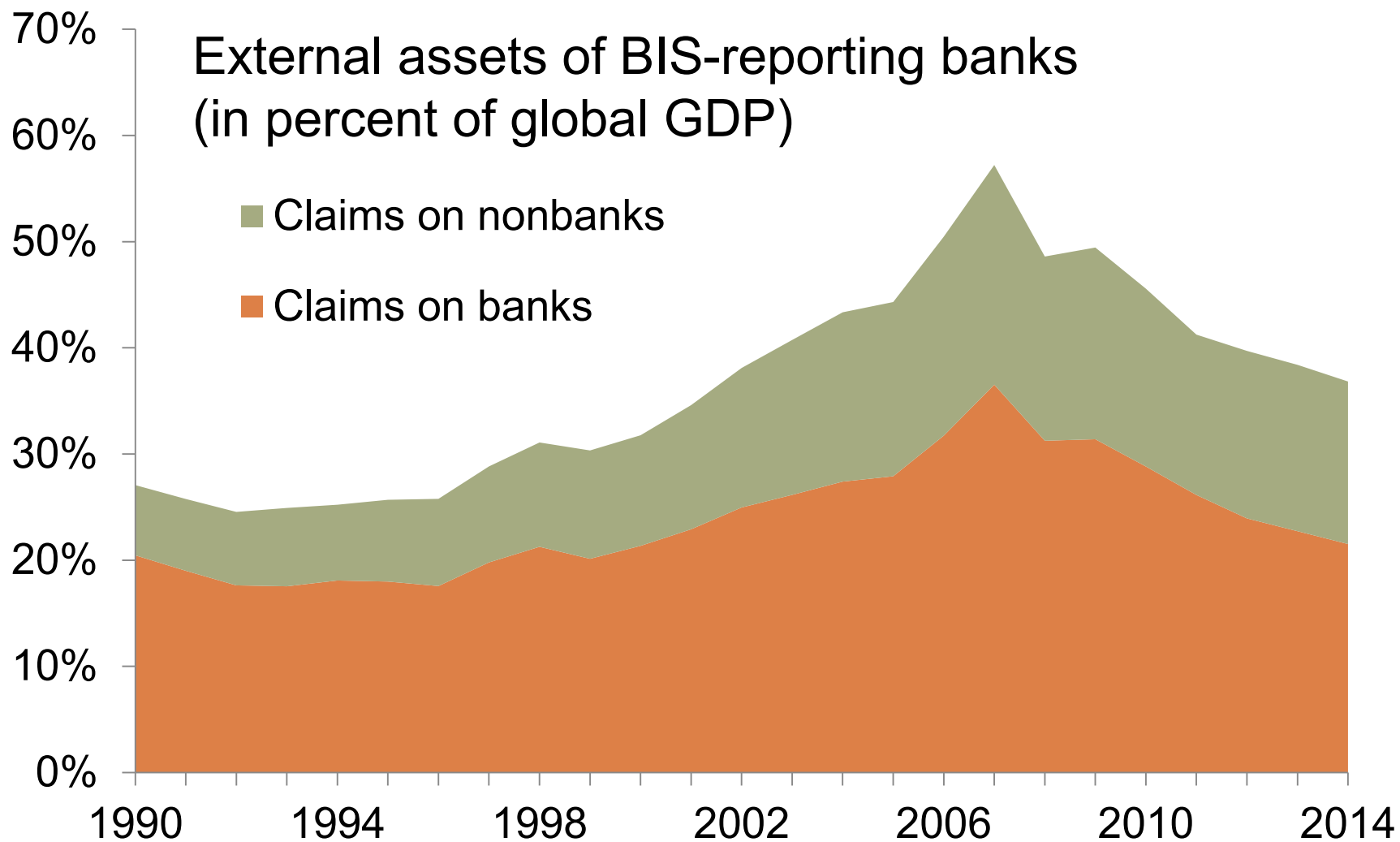
# What explains the break in the upward trend of financial integration?

- Big reduction in cross-border debt holdings
  - ▣ Loans
  - ▣ Securities
- This reflects
  - ▣ Bank deleveraging
  - ▣ More fragmentation within the euro area
- But also large increase in EM share of world GDP
  - ▣ EMs have smaller external assets and liabilities

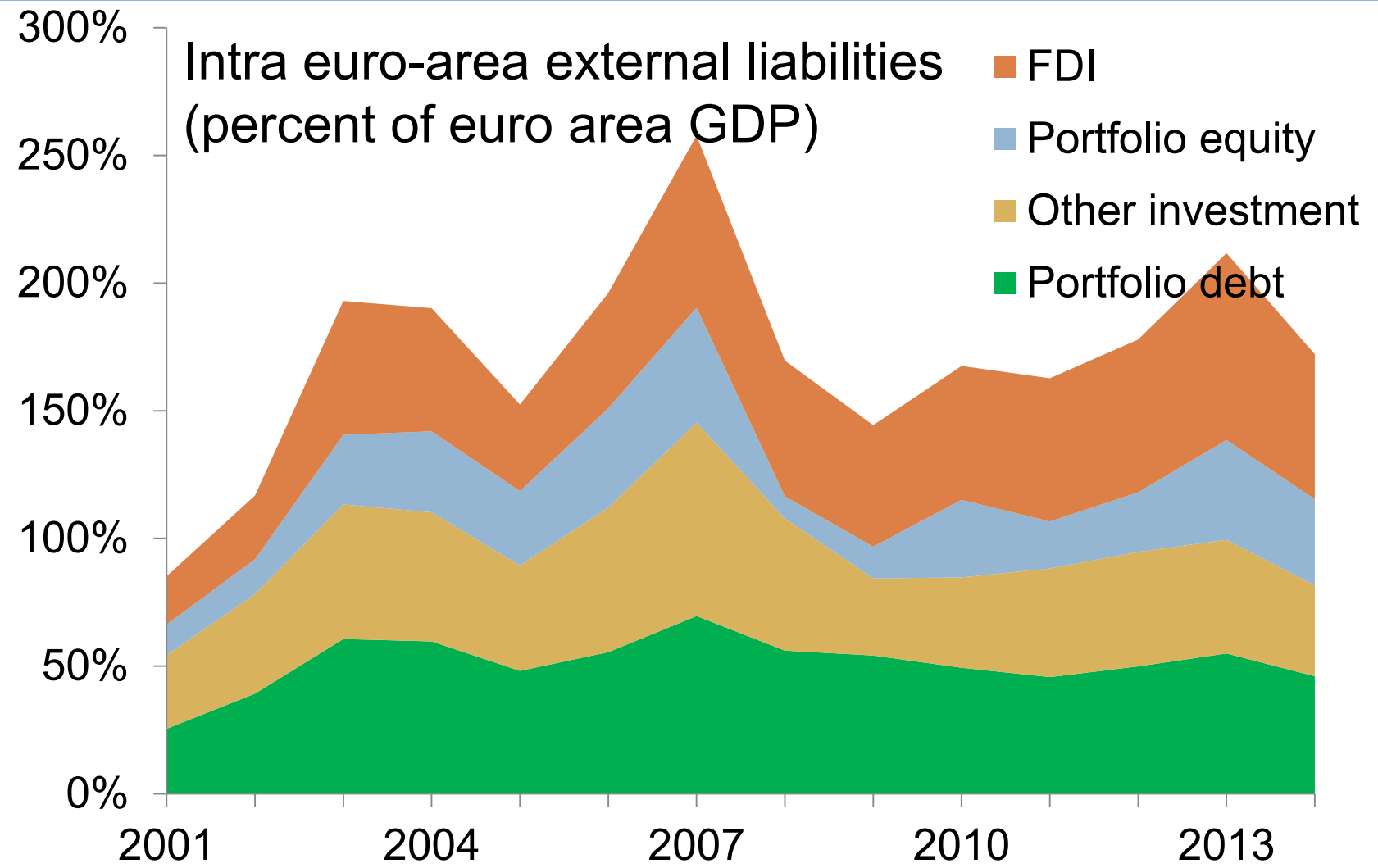
# Declining world external assets and liabilities to world GDP, 2007-2014....



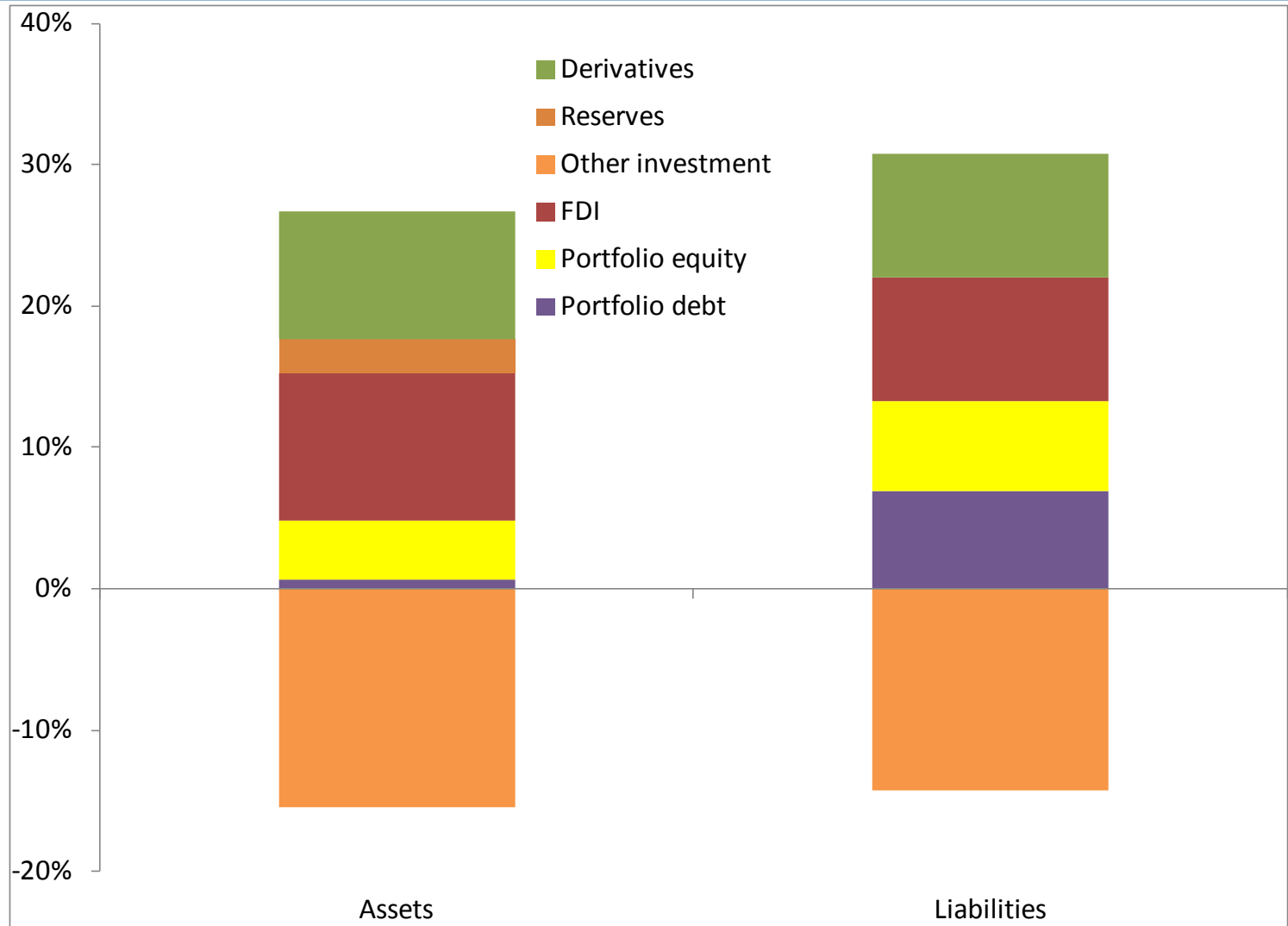
.....mostly reflecting deleveraging by banks



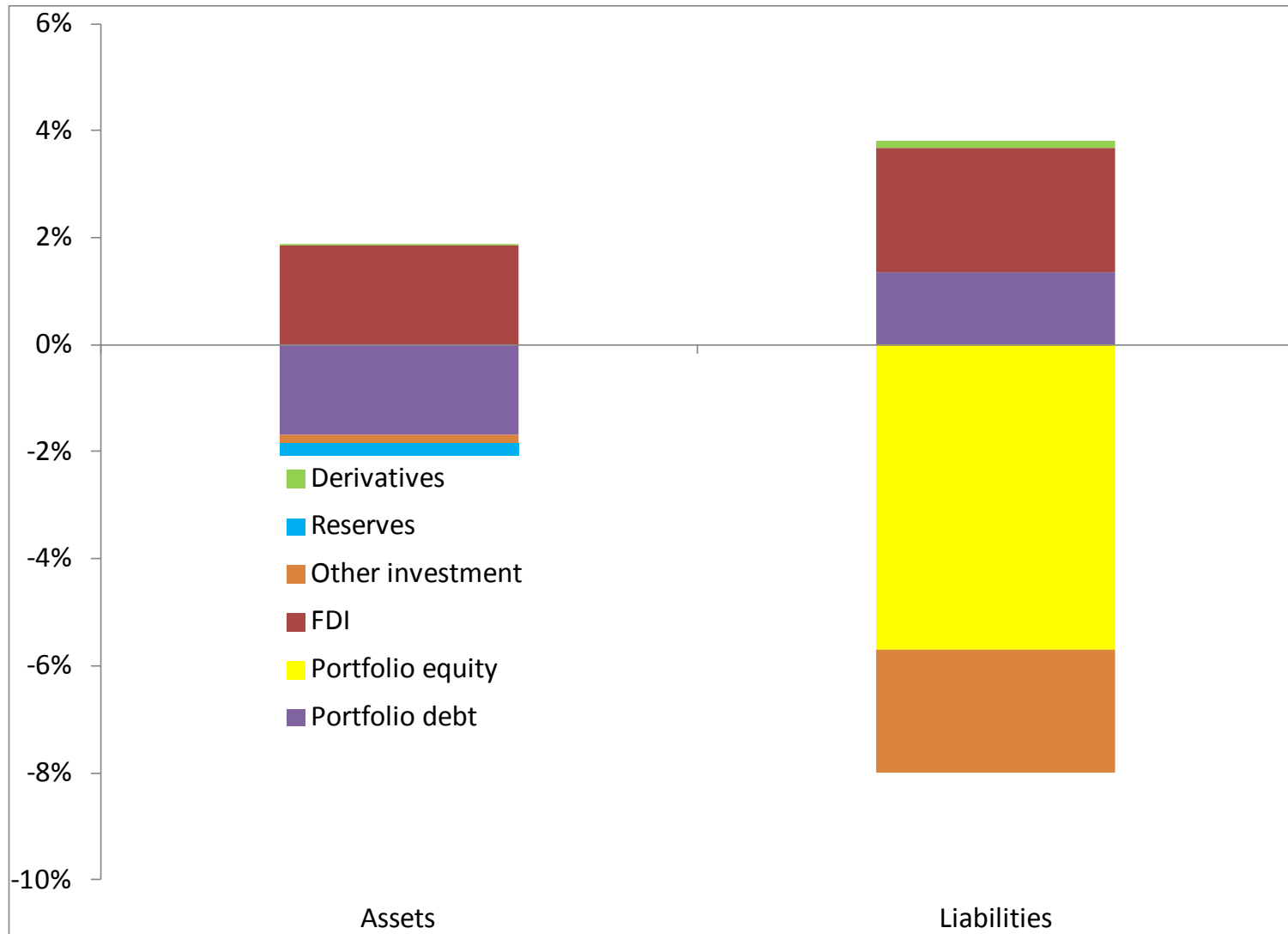
# ...and a large decline in intra euro area claims



# Change in AE external balance sheet, 2007-14



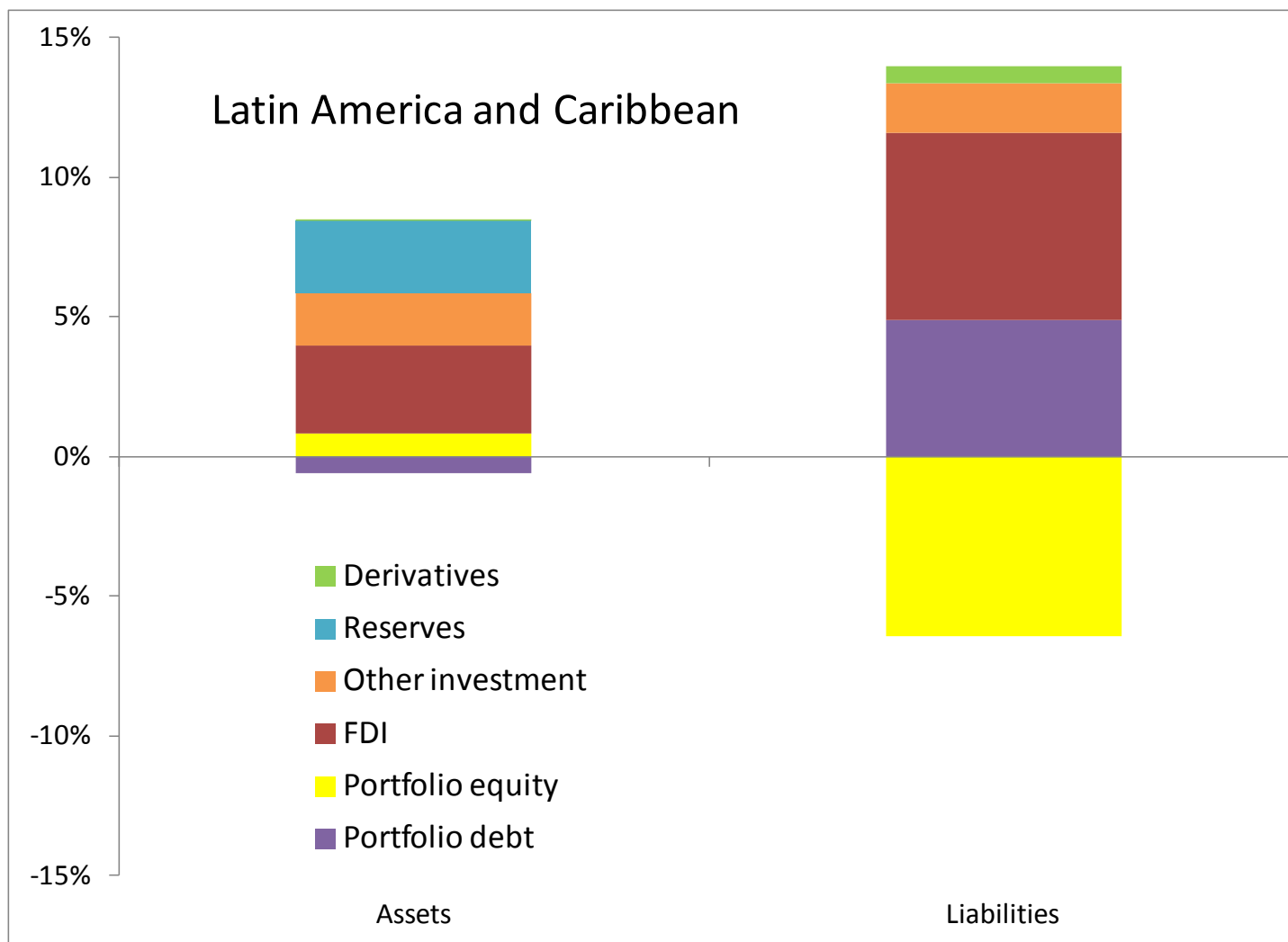
# Change in EM balance sheet, 2007-14: more modest



# Much ado about portfolio flows?

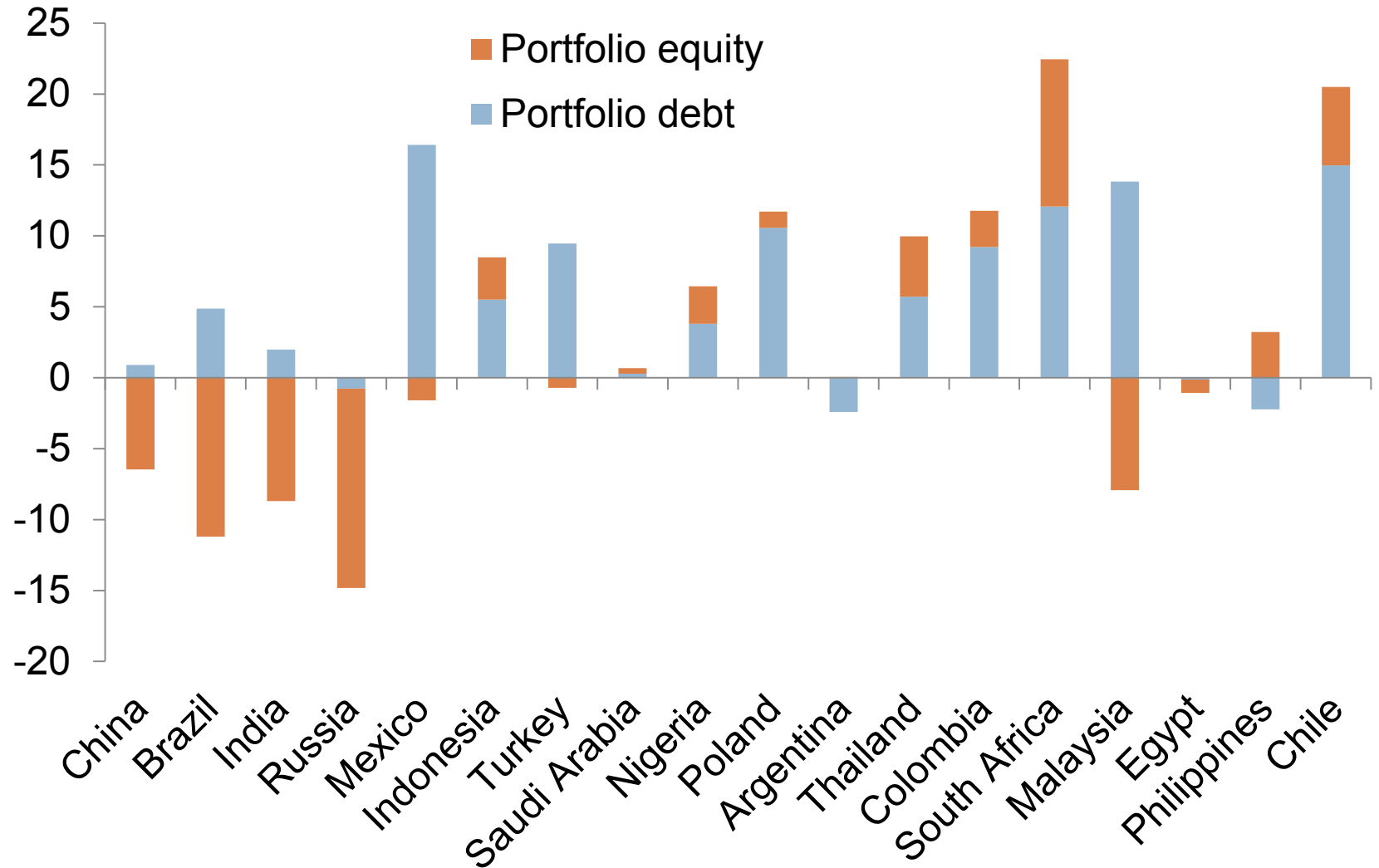
- EM aggregate masks substantial heterogeneity
- Portfolio debt liabilities

# Change in external balance sheet, 2007-14 (percent of GDP)





# Change in ratio of portfolio liabilities to GDP, 2007-14



# Challenges of measuring financial integration

- Difficulty in determining ultimate exposures
- Offshore activity / inflation of cross-border positions
- FDI: SPVs, SFIs etc (Netherlands has \$4 trn in FDI assets and liabilities, Luxembourg over \$3 trn)
- Portfolio equity: Investment fund industry
- Other investment: routing of bank flows

# Where do we go from now? Short term



- Advanced economies:
  - ▣ Cross-border role of banks?
  - ▣ Intra euro area flows?
- Risks of reduced flows to EMs?
  - ▣ Gradual normalization of US monetary policy
  - ▣ Growth in EMs below pre- and post-crisis trends

# Where do we go from now? Medium term

- Forces pushing for increased integration of EMs
  - Domestic financial development
    - Increased presence of EM financial institutions on global markets
    - Gradual development of institutional investors (example of Chile)
  - More FDI



Irving Fisher Committee on  
Central Bank Statistics

BANK FOR INTERNATIONAL SETTLEMENTS

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IFC Satellite meeting at the ISI World Statistics Congress on *"Assessing international capital flows after the crisis"*

Rio de Janeiro, Brazil, 24 July 2015

## Capital flow measures and research challenges<sup>1</sup>

Linda Goldberg, BIS and Federal Reserve Bank of New York

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<sup>1</sup> This presentation was prepared for the meeting. The views expressed are those of the author and do not necessarily reflect the views of the BIS, the IFC or the central banks and other institutions represented at the meeting.

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FEDERAL RESERVE BANK *of* NEW YORK

# Capital Flow Measures and Research Challenges

Linda Goldberg FRB-NY and BIS Visiting Scholar

July 2015 Keynote Presentation, BCB / CEMLA / IFC , Rio de Janeiro.

The views expressed in this presentation are those of the author and do not necessarily represent those of the Federal Reserve Bank of New York, the Federal Reserve System, or the Bank for International Settlements.

# Data availability and analytical challenges

## 1. Structural changes to credit intermediation

- Banking organizations: diverse business models, complex financial conglomerates, global operations, internal capital markets
- Nonbank intermediation (shadow banking)
- Challenge to keep up with evolving intermediation

## 2. Post crisis: more availability of international capital flow data

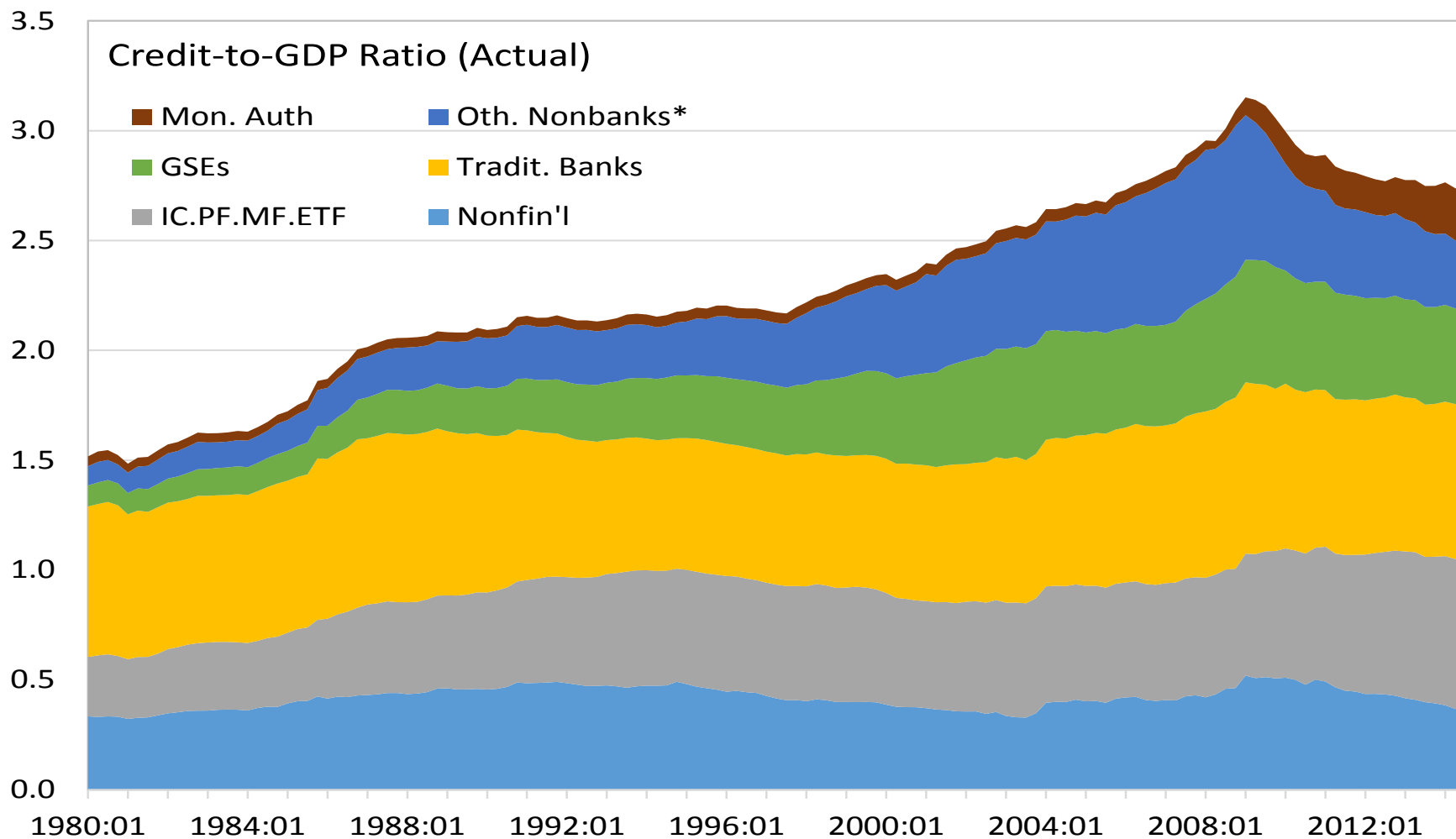
## 3. Challenges remain

- Data Gaps
- Data Management
- Performing Analytical Work
  - Limitations in access and integration
  - Opportunities for collaboration

# Structural changes to credit intermediation



# Traditional Banks remain important, but have lots of company in credit provision.



Source: Flows of Funds

# Banking international focus and structure

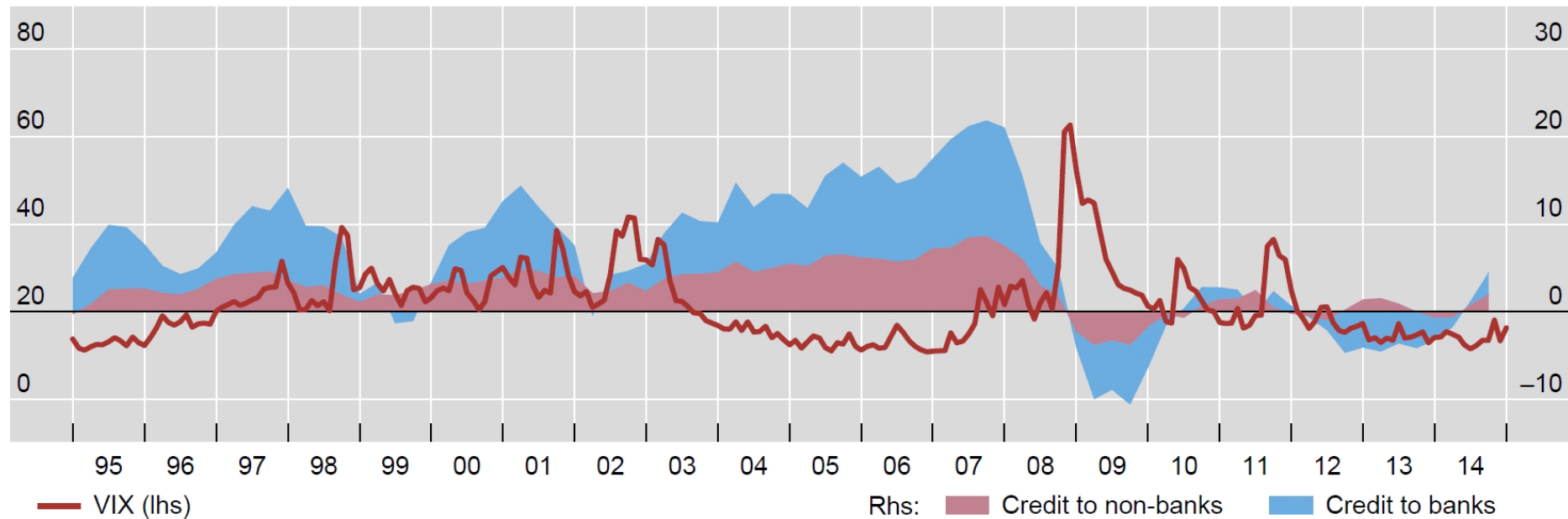
- ▶ Volume of international activity rose
  - Counterparties in transactions evolved: sovereigns to banks to bank/nonbank
  - Mode of servicing markets changed: growth in foreign bank branches and subsidiaries hosted by AEs and EMs.
  - Need for more information and better frameworks around these international entities

# International banking counterparties change: especially high growth rates of interbank flows, with steeper reversals as global risk conditions shift.

Year-on-year growth, in per cent

Graph 1

International bank claims<sup>1</sup>

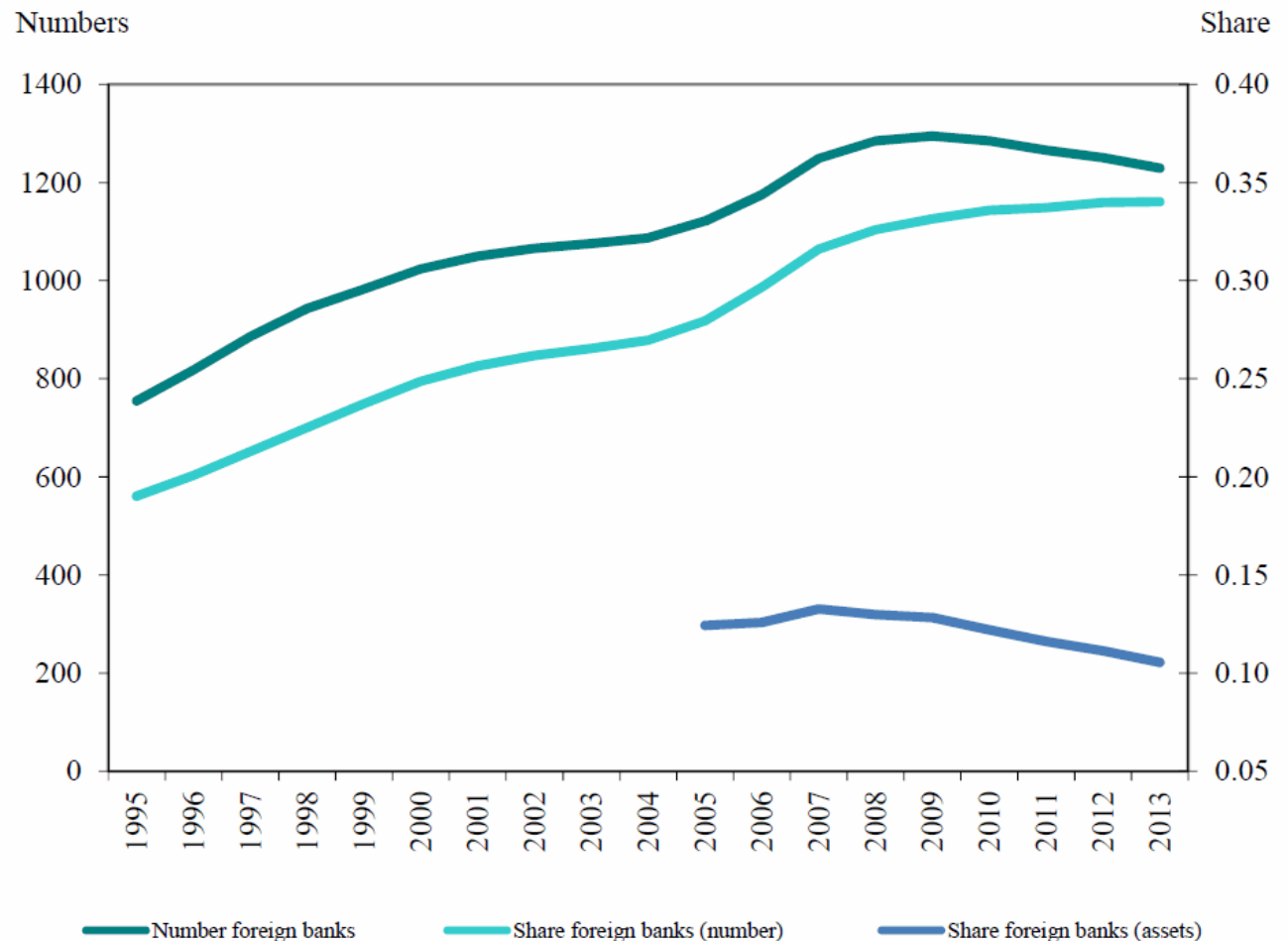


Source: Cohen & Koch, *BIS Quarterly Review*, March 2015. p. 15.

<sup>1</sup> Includes all BIS reporting banks' cross-border credit and local credit in foreign currency.

# Banks increasingly entered foreign markets by setting up local affiliates. Subsidiary activity reflects part of this.

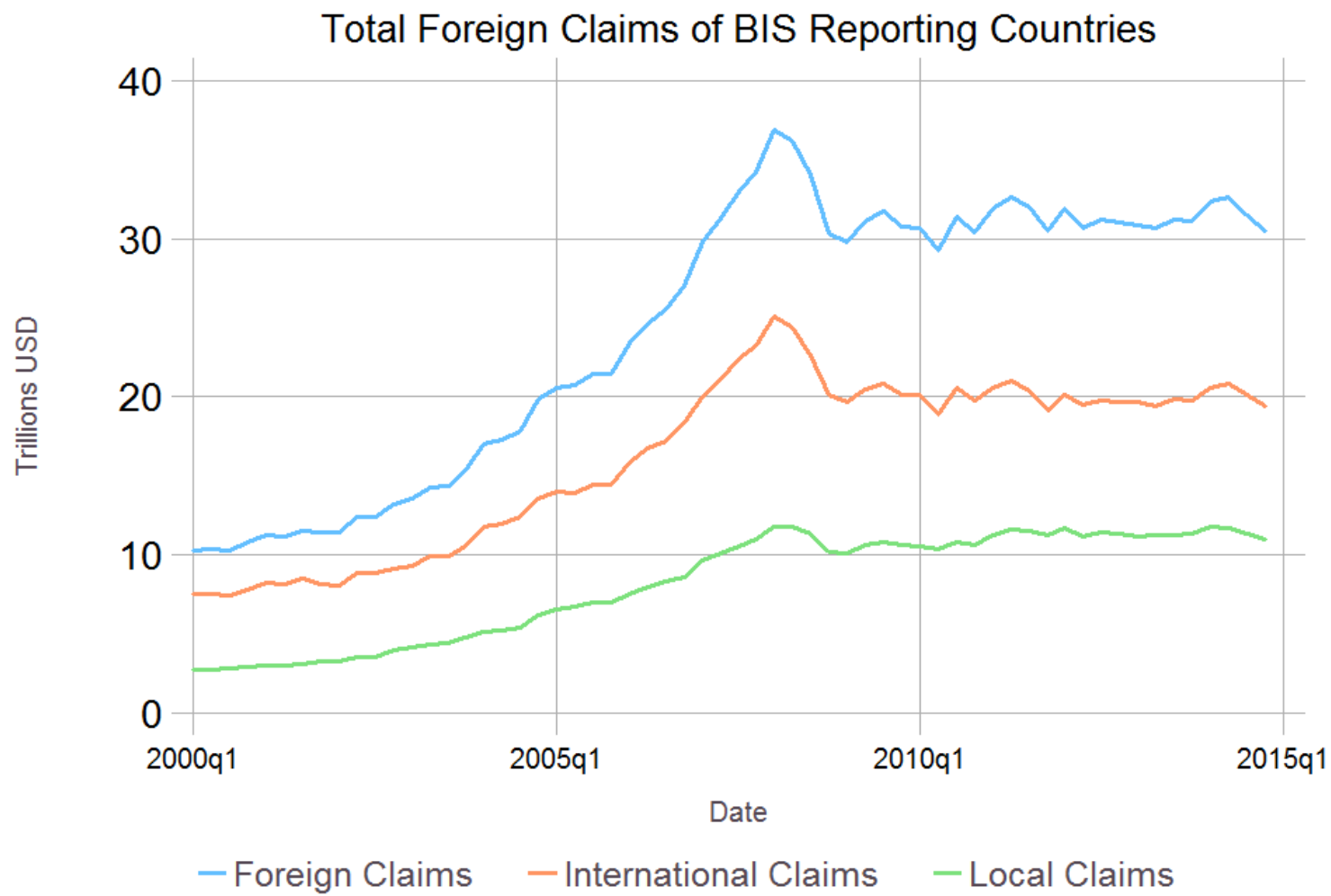
Figure 1  
Number and share of foreign banks, 1995 - 2013



Source: Claessens and van Horen, 2015. "The Impact of the Global Financial Crisis on Banking Globalization" figure 1.

# Cross-border lending joined by substantial local claims.

## Diversified products offered; some locations for investment, others for funding (Cetorelli/Goldberg 2012)



Source: BIS Consolidated International Banking Statistics.

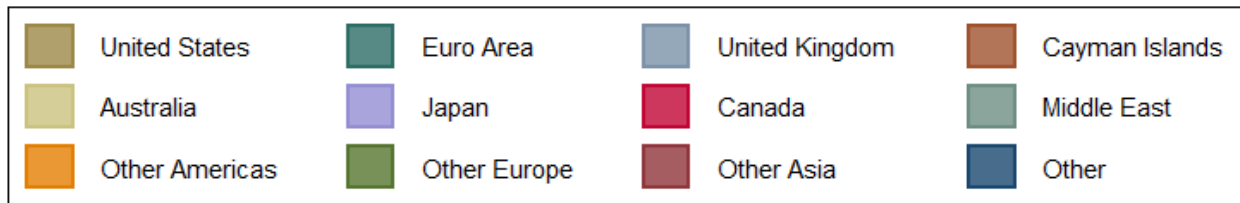
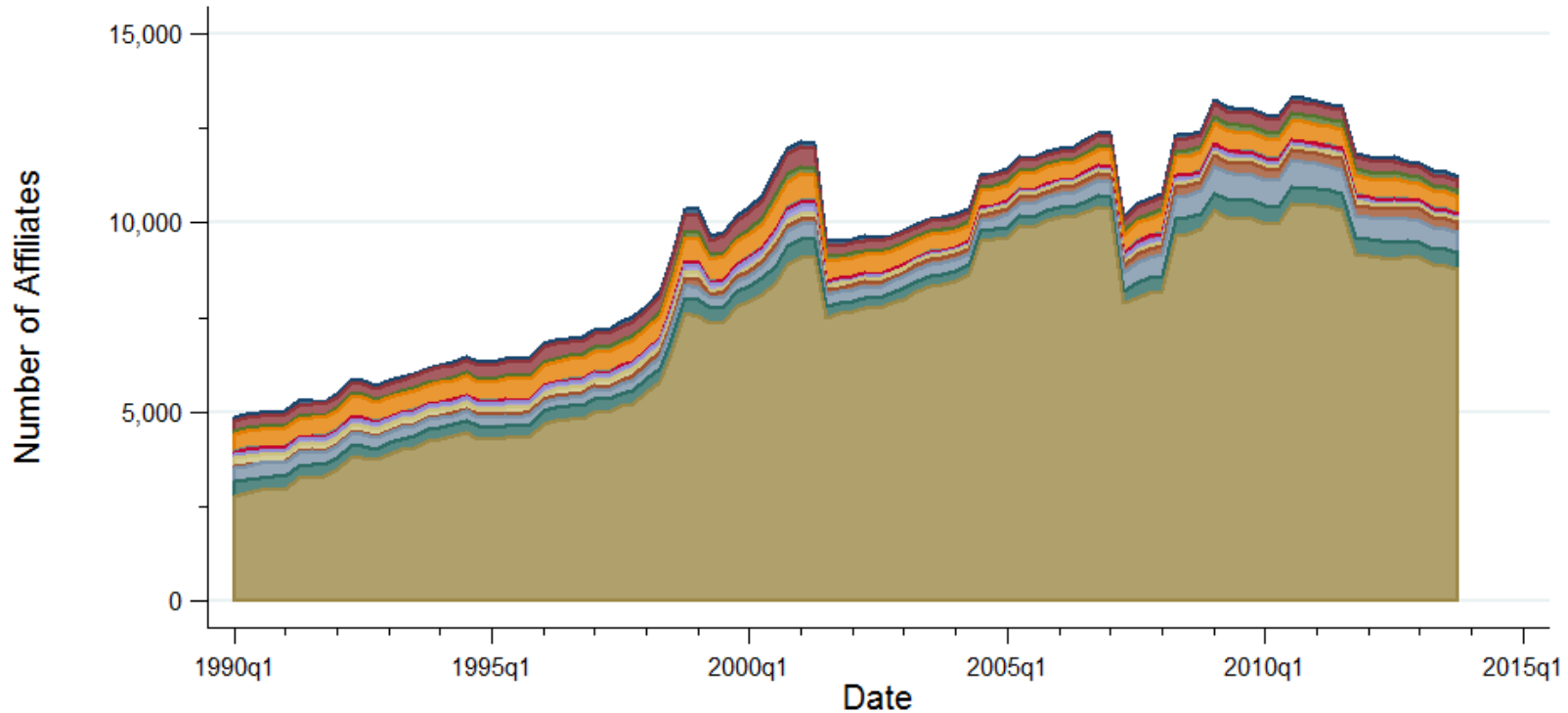
# Organizations involved in credit intermediation evolve.

- ▶ Traditional banks more global and diversified.
- ▶ Financial conglomerates more prevalent
  - Growth in organizational and business complexity
  - Greater use of internal capital markets within organizations, to domestic and foreign affiliates.
  - Patterns and consequences of liquidity management not well understood.
- ▶ Nonbanks grew in importance, and are sometimes in BHCs.
- ▶ Data collection and coverage gaps.
- ▶ Regulatory perimeters sometimes outdated.

# Evolving bank structure shown in counts of legal entities of US top 20 BHCs (conservative measure).

## US BHC Affiliate Count by Region

Sample: Top 20 BHC's By Asset Size, Quarterly



All BHC's are publicly listed and file the Y-9C (financials) and Y-10 (organizational structure).  
Excludes 6 BHC's that enter the sample in 2009: Goldman Sachs, Morgan Stanley, American Express, CIT Group, Ally, and Discover.

## Outside of banks, credit intermediation evolving through shadow banking / shadow banks.

- ▶ Not uniquely defined across institutions, but covers some combination of financial activities and entities.
- ▶ Considerable innovation in both activities and entity types. Growth rates have varied over time across component types.
- ▶ The innovations and shifting players makes financial stability analysis and data collection challenging.
- ▶ Even as statistical agencies are challenged in collecting regulatory data from banks/BHCs, broader umbrella of coverage is needed for the (newer) activities and entities.
- ▶ Always chasing the frontier!



**Table 2.1. Comparison of Shadow Banking Measures**

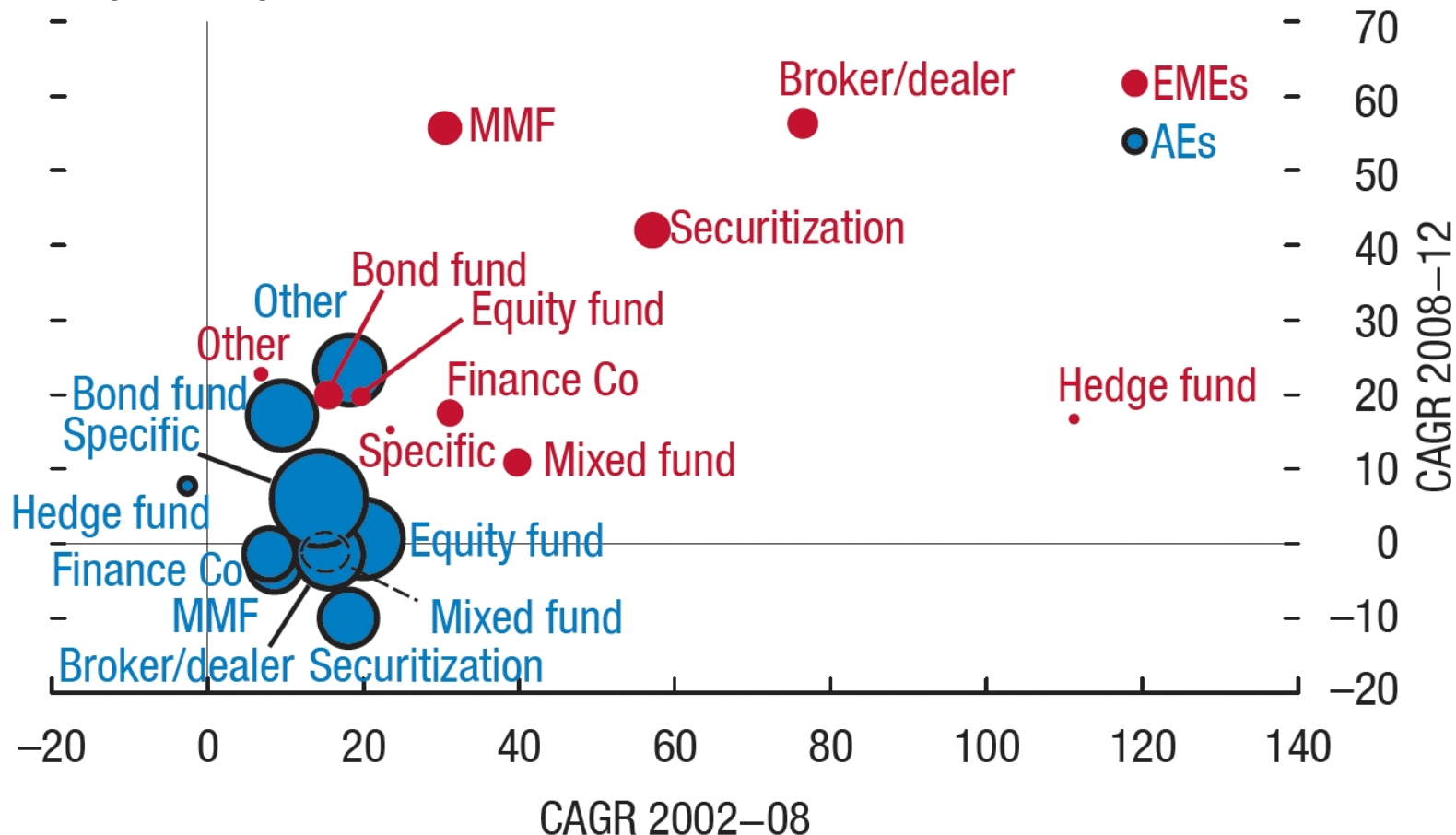
	Flow of funds	Financial Stability Board	Noncore liabilities
<b>Coverage</b>	Nonbank financial institutions <ul style="list-style-type: none"> <li>Engaged in financial intermediation</li> <li>Providing long-term financing</li> </ul>	Nonbank financial institutions <ul style="list-style-type: none"> <li>Engaged in financial intermediation</li> <li>Providing long-term financing</li> </ul>	Banks Nonbank financial institutions MMFs
	Excludes non-MMF investment funds	Includes non-MMF investment funds	Excludes non-MMF investment funds
	Advanced economies Former emerging market economies	Advanced economies Emerging market economies	Advanced economies Few emerging markets
<b>Source</b>	Flow of funds statistics Quarterly, long history, starting 1980s	Flow of funds and sector data, FSB Annual, short history, starting 2002	IFS Quarterly, short history, starting 2001
<b>Entities/ Activities</b>	Money market mutual funds	Money market mutual funds	Narrow measure includes: <ul style="list-style-type: none"> <li>Restricted and nonresident deposits</li> <li>Securities</li> <li>Loans</li> <li>MMF shares/units</li> </ul>
	Financial leasing corporations	Finance companies	
	Securitization vehicles	Securitization vehicles	
	Broker/dealers	Broker/dealers	
		Investment funds (bonds, equity, mixed)	
		Hedge funds	
	Country-specific entities <ul style="list-style-type: none"> <li>Financial holding corporations</li> <li>Development capital companies</li> <li>Other entities</li> </ul>	Country-specific entities <ul style="list-style-type: none"> <li>Financial holding corporations</li> <li>Private development banks</li> <li>Other entities</li> </ul>	Broad measure consists of narrow plus the following intra-financial-sector positions: <ul style="list-style-type: none"> <li>Securities</li> <li>MMF shares/units</li> </ul>
	Venture capital corporations		
	Other (not specified)		
<b>Features</b>	Entity based (narrower entity set) Entity breakdown not always available Balance sheet breakdowns available Somewhat more country specific	Entity based (broader entity set) Broad and narrow measures No balance sheet breakdowns More cross-country consistency Not publicly available Data more subject to valuation effects (due to importance of investment funds)	Entity and activity based Broad and narrow measures No balance sheet breakdowns Somewhat country specific Relates to financial fragility literature Captures shadowy banking activities

Source: IMF staff.

Note: FSB = Financial Stability Board; MMF = money market mutual fund; IFS = IMF, International Financial Statistics database.

Early patterns of shadow banking subsector growth are not necessarily indicative of future trends, posing challenges for data collection.

## 2. Compound Annual Growth Rates by Subsector (Percent)

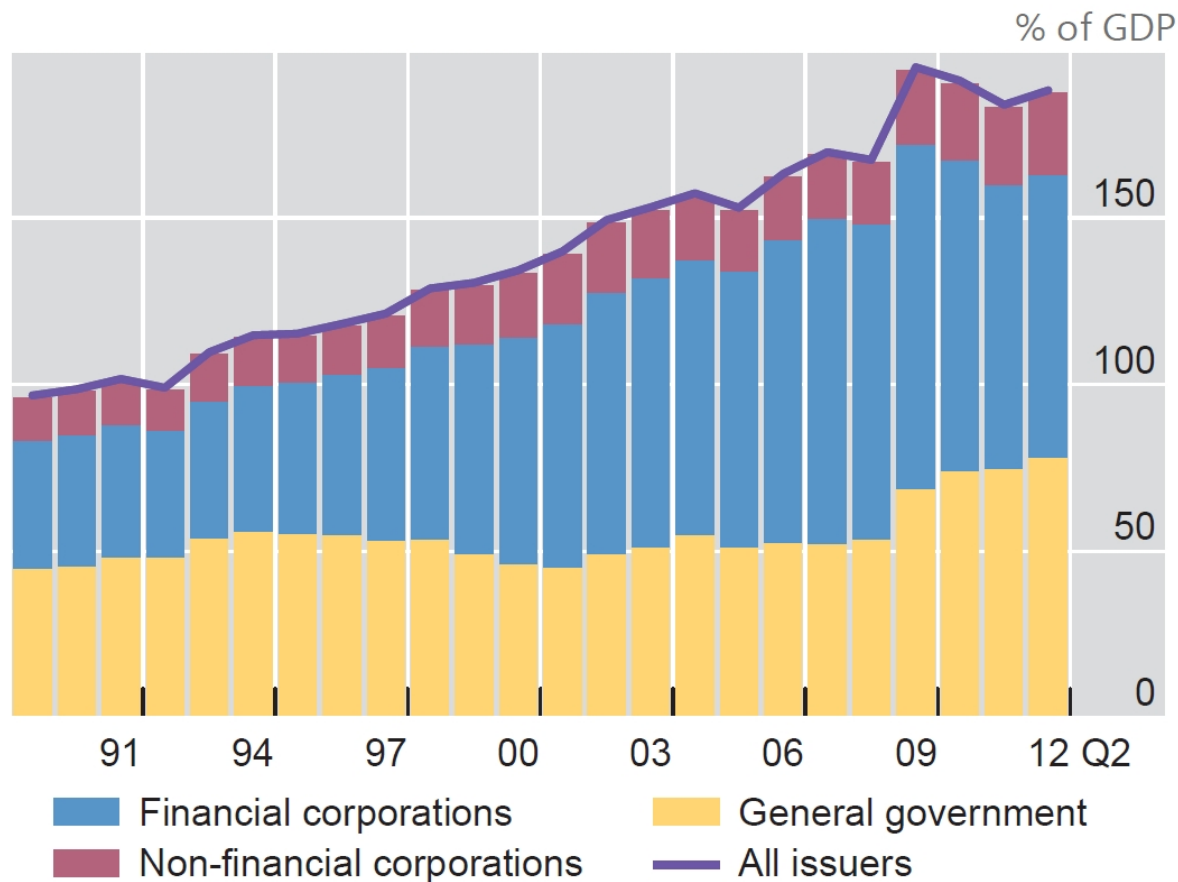


Notes: CAGR = Compound annual growth rate

Source: Valckx et al., IMF Financial Stability Report, Oct 2014. p. 74.

# Example: debt securities by financial corporations nearly doubled relative to GDP over a decade.

Total debt securities

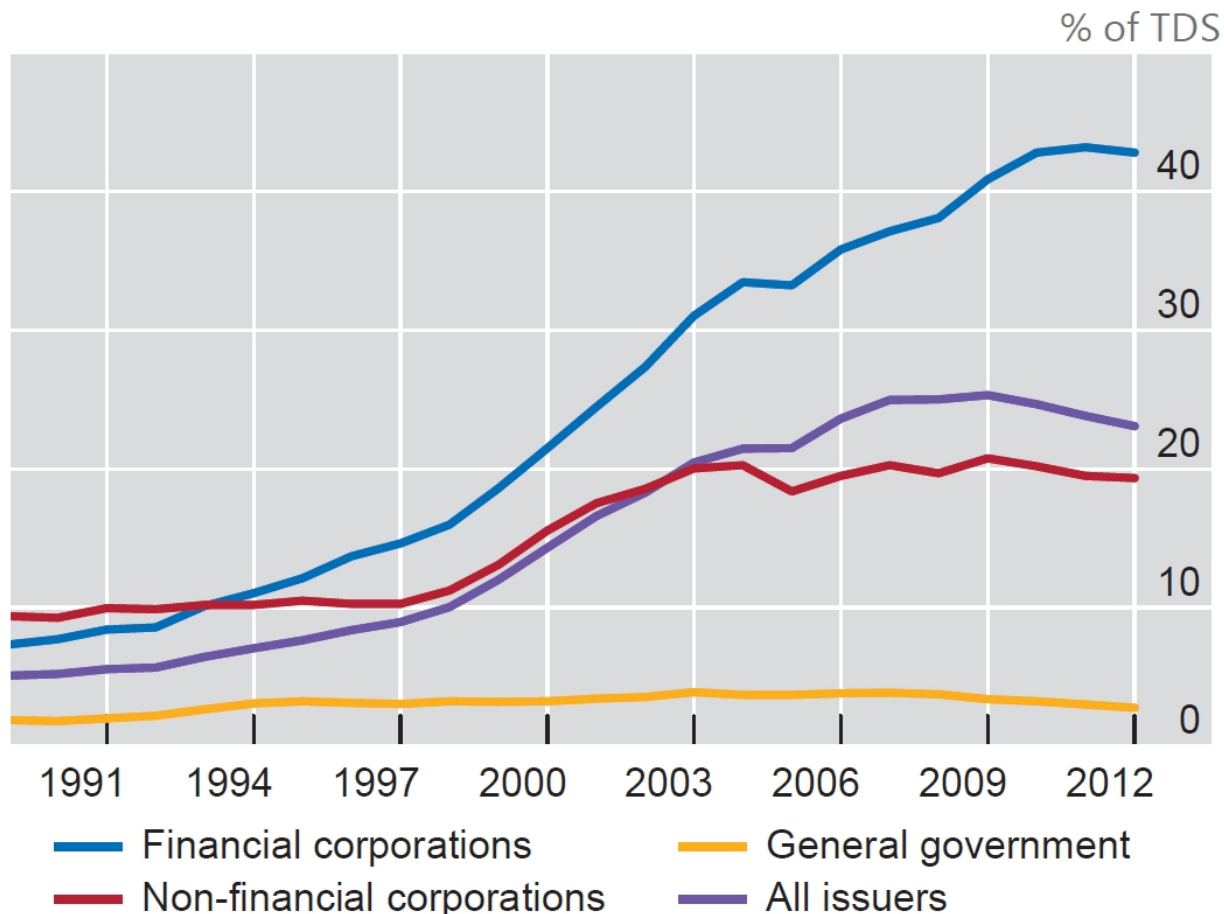


Notes: Growth of debt securities market for a fixed sample of 17 countries for which reporting begins in 1990.

Source: Gruic & Wooldridge, BIS Quarterly Review, Dec 2012. p. 74.

# For international capital flows, financial corporation issuance grew quickly, as did nonfinancial issuance.

International debt securities<sup>2</sup>



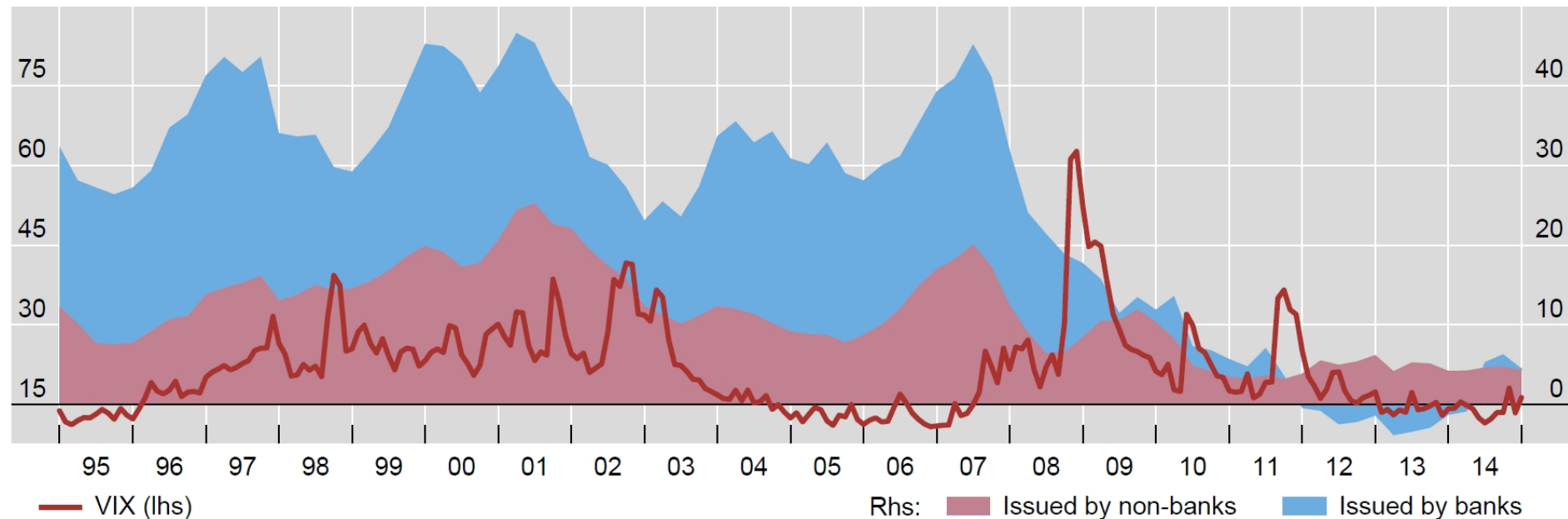
<sup>2</sup> For international debt securities, new BIS statistics.

Notes: Growth of debt securities market for a fixed sample of 17 countries for which reporting begins in 1989.

Source: Gruic & Wooldridge, BIS Quarterly Review, Dec 2012. p. 74.

# Bank issuance was particularly strong, and collapsed after the recent crisis.

International debt securities<sup>2</sup>



<sup>2</sup> Net issuance. All instruments, all maturities, all issuers.

Source: Cohen & Koch, BIS Quarterly Review, March 2015. p. 15.

Post crisis: more availability of international capital flow data

# Significant efforts to improved prudential supervision of bank holding companies.

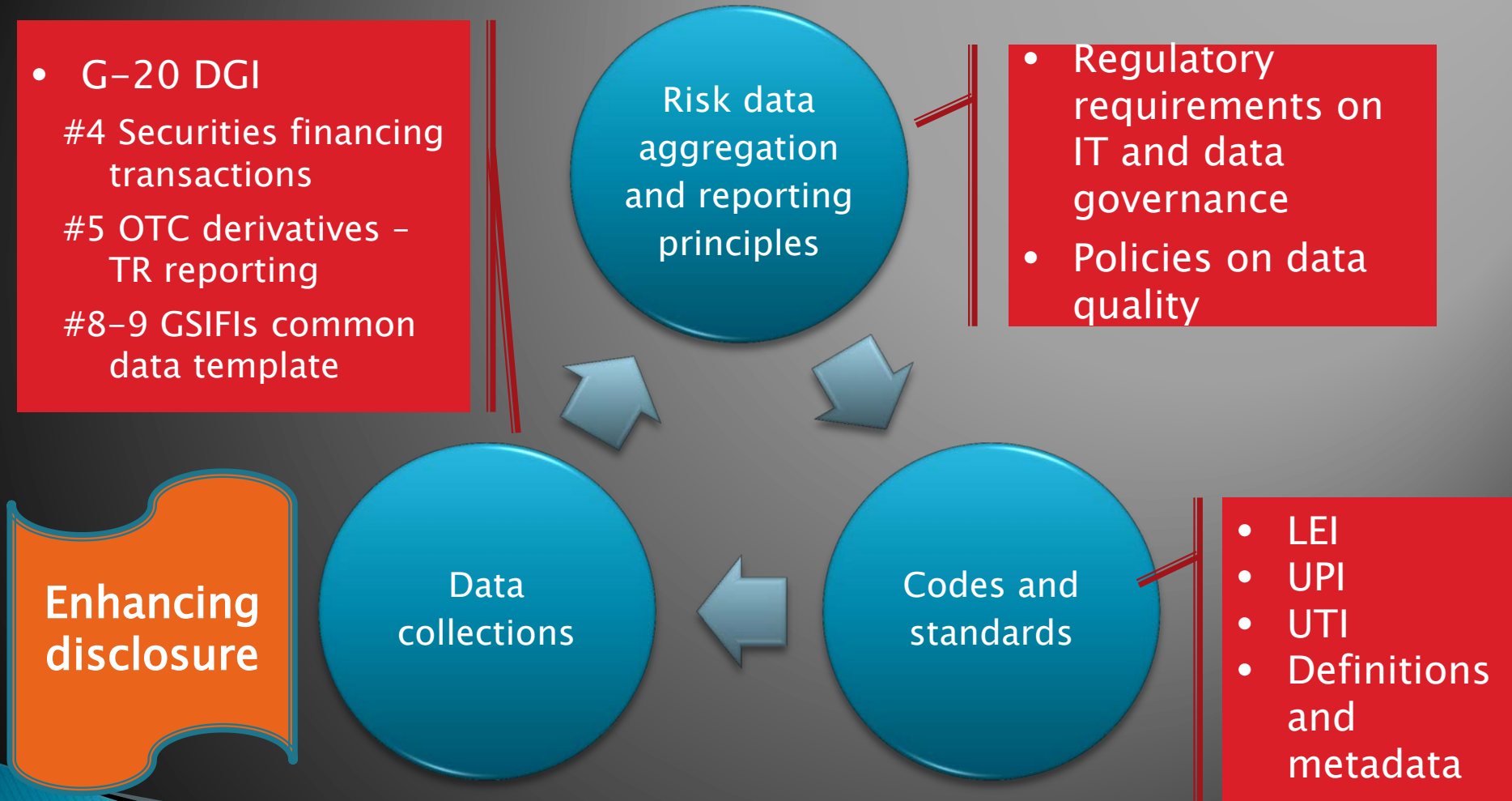
- ▶ Integration of **exposures** and **funding**
  - Assets AND Liabilities
  - Consider different business models
  - Mismatches within and between entities
- ▶ **Consolidated** and **connected** entities
  - Avoid gaps or biases due to reporting groups' organizations
- ▶ Collect **multiple risk determinants**
  - Crossing dimensions to assess systemic risk
  - Anticipate potential for changing and correlated risk factors
  - Flexibility to aggregate data according to relevant risk factors
- ▶ Stages of data collection changes organized through FSB, BIS

# **If history is a guide, relying on bank (or bhc) data, and regulatory reporting, will not be enough**

- ▶ Flexibility and adaptability required of statistical and data departments in countries/organizations
- ▶ Need to rely on diversity of data sources
- ▶ Design data processing systems with easy extensibility, so that new data can be integrated quickly and at relatively low cost as financial entities or activities change
- ▶ Hopefully processing and technological advances are used to make official data more accessible, and integrate private data
- ▶ Data asset management very important, with domestic and international financial statistics.



# FSB established an integrated framework



# Challenges to conducting research

# Data availability and analytics are challenging

- ▶ Within central banks, can view some confidential data for individual institutions, with access controls
  - can be held closely by particular departments
  - extensive restrictions for external analysts
- ▶ Integrated view of complex (banking) organizations difficult to come by. Pertains to
  - Bank and non-bank balance sheets
  - Details of domestic v. foreign capital flows
- ▶ Data and basic definitions can follow regulatory perimeters.
- ▶ Broader access and coverage still on the horizon.
- ▶ Combining with other data sources remains difficult.

# IBRN: Sharing insights not data

- ▶ The International Banking Research Network brings together **central bank researchers** to analyze issues on global banks.
  - Researchers have access to micro-data underlying the BIS international banking statistics.
  - Micro-banking data are key to design analytical experiments and providing insights beyond case studies.
- ▶ The network has been established in **2012**.
  - Austria, Germany, UK, US
- ▶ First project in **2013** with **11 central banks** + BIS, IMF
  - International banking and liquidity risk transmission
- ▶ Current project with **~23 central banks** + BIS, IMF, ESRB, ECB
  - International banking and regulatory spillovers

# “Cross-Border Regulatory Spillovers: How Much? How Important?”

## 1. Empirical methods

Experiment design using state-of-the-art considerations

## 2. Cross-country and time series database on prudential policies

Collaboration of IBRN team with IMF GMPI Survey team

## 3. Country implementation

i. Use own propriety data, share results and insights

ii. Own names on research paper

iii. Full policy relevance

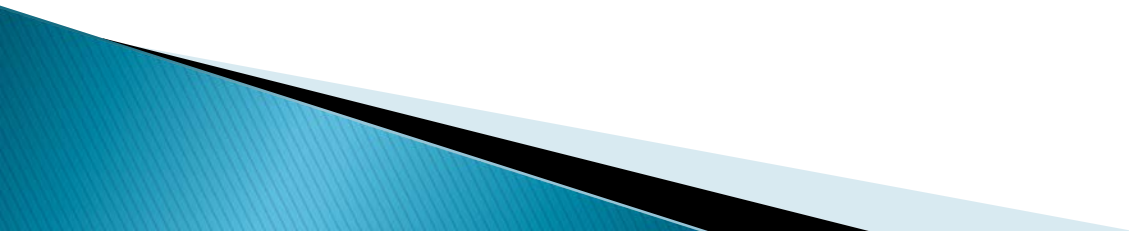
## 4. Proposal for journal symposium, submissions

## 5. Lessons for international policy community

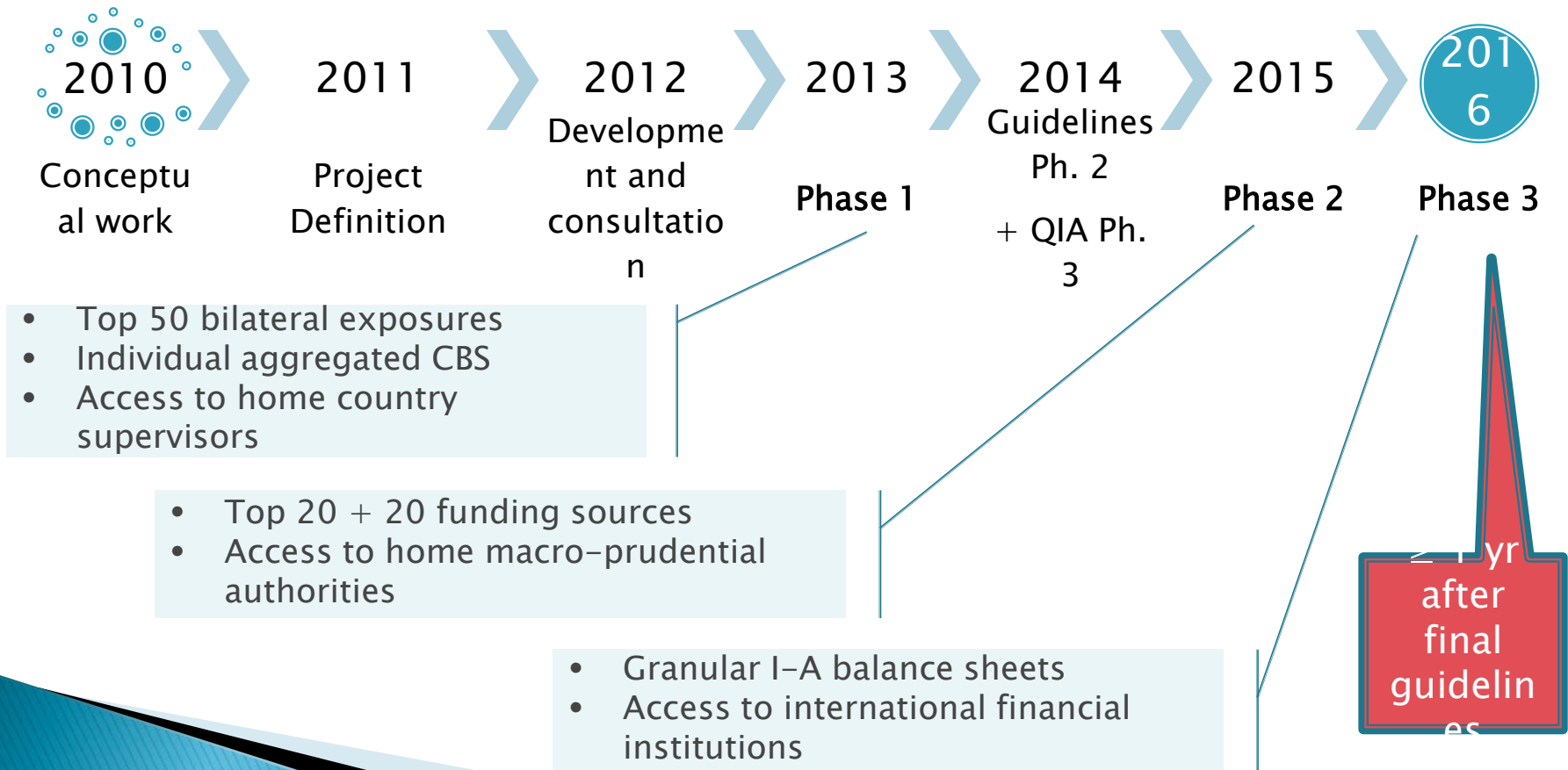
Homepage of the IBRN: <http://www.newyorkfed.org/IBRN/index.html>

## Concluding remarks.

- ▶ Recent decades are defined by considerable innovation in both activities and entity types.
- ▶ Developments are not always predictable.
- ▶ Even as statistical agencies are challenged in collecting regulatory data from banks/BHCs, broader umbrella of coverage is needed for the (newer) activities and entities.
- ▶ Flexible approaches are needed to integrate new datasets with existing data, for example through identifiers and platforms.
- ▶ Many opportunities for collaboration in the community of researchers and statisticians of international capital flows.



# Collection of G-SIBs data







IFC Satellite meeting at the ISI World Statistics Congress on “Assessing international capital flows after the crisis”

Rio de Janeiro, Brazil, 24 July 2015

## Capital flows in the post-global financial crisis era: implications for financial stability and monetary policy<sup>1</sup>

Mahir Binici, Central Bank of the Republic of Turkey

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<sup>1</sup> This paper was prepared for the meeting. The views expressed are those of the author and do not necessarily reflect the views of the BIS, the IFC or the central banks and other institutions represented at the meeting.

# Capital flows in the post-global financial crisis era: implications for financial stability and monetary policy

Mahir Binici and Mehmet Yörükoğlu<sup>1</sup>

## Introduction

The last three years have been unusual for the major world economies. Output in advanced economies has slumped, deflation risk has risen, and policy rates have approached the zero limit as central bank balance sheets have greatly expanded. Emerging market economies have also faced challenges: the initial effect of the developed world's difficulties on them included a sudden reversal in capital flows, currency depreciation, and liquidity problems coupled with negative growth. At a later stage, the picture was reversed with a surge in capital inflows, credit growth and foreign exchange appreciation in the emerging economies. While developed countries coped with the crisis by deploying unusual monetary and fiscal policy measures, emerging market economies combined monetary policy measures with various sets of macroprudential instruments. Hence, the global financial crisis highlighted the importance of using a broader set of instruments for financial stability, and of coherent macroeconomic policies.

This paper provides a perspective on the Great Moderation and financial integration, and their implications for price and financial stability. While these two policy objectives are mutually compatible in normal times, we argue that in high-growth periods the usual monetary policy practices, based on adjusting short-term interest rates with the aim of maintaining price stability, may not be sufficient to eliminate financial risks. Therefore, policymakers should use a broader set of macroprudential policies to reconcile their financial stability aims with their price stability objective.

In arriving at this conclusion, we provide a historical perspective on the evolution of change in monetary policy objectives, starting with the Great Moderation. We pay particular attention to the linkage between the Great Moderation and global imbalances. These phenomena were also associated with the growing integration of the emerging market economies with the rest of the world. We conclude that the Great Moderation, global imbalances, and the integration of emerging market economies have important implications for monetary policy, and imply a growing need for financial stability. Financial stability is increasingly important as a focus of policy as emerging market countries grow faster, reducing inflation pressures, but also grapple with greater challenges in terms of surging capital flows and closer financial integration.

In the next section, we discuss some background issues regarding the Great Moderation and financial integration. Section 3 presents a discussion on the recent global financial crisis and its implications for emerging market economies. Section 4 provides perspectives from Turkey. Section 5 concludes.

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<sup>1</sup> Central Bank of Turkey.

## 1. Background issues: the Great Moderation and financial integration

After the mid-1980s, the United States and other advanced economies experienced a substantial decline in macroeconomic volatility. This phenomenon is frequently referred to as “the Great Moderation”. Stock and Watson (2002) documented a significant decline in the volatility of output growth rate including consumption, total investment and their subcomponents. In addition, they showed a considerable moderation in wage and price inflation. As for international evidence, Stock and Watson (2005) show that other G7 economies also experienced a moderation in their business cycle fluctuations over the past three decades and an increase in synchronisation among their subgroups.<sup>2</sup>

Explanations for the Great Moderation fall into three categories (Bernanke (2004)): a change in the structure of the economy, improved macroeconomic policies, and good luck. Stock and Watson (2002) and references therein consider the structural change in the economy, including the shift in output from goods to services, information technology-led improvements in inventory management, and innovations in financial markets that facilitate intertemporal smoothing of consumption and investment. Bernanke (2004) claims that increased trade openness and international capital flows are examples of structural changes that contributed to macroeconomic flexibility and stability.

The second category of explanations, based on improved macroeconomic policies, focuses mainly on the role of monetary policy in increasing economic stability. In their empirical studies, Taylor (1999) and Clarida et al (2000) postulate an increase in the response of short-term interest rates to movements in inflation, an argument which is in line with the active Taylor-type rule. Blanchard and Simon (2001), on the other hand, show a strong co-movement of output and inflation volatility for both the United States and other developed economies. Thus, monetary policy is considered to have helped reduce output volatility. Stock and Watson (2002) estimate that 10–25% of the reduction in output volatility was due to improvements in monetary policy.

The good luck hypothesis is the third explanation for the Great Moderation and is based on the argument that the variance and frequency of shocks impinging on the economy has been smaller than usual.

### Implications

Among the three explanations for the Great Moderation, we focus on the first hypothesis of structural change and its implications. The factors that account for changes in the structure of economy include technological progress and improvements in business processes and inventory management, all of which are considered to be important contributory factors for steady GDP growth, reduced volatility, and increases in business cycle expansions (Stock and Watson (2002)). These factors are also considered to have contributed to increases in labour productivity, particularly after the second half of the 1990s. This productivity-driven growth could also have led to increases in economic capacity through a higher investment rate. Hence this supply side growth did not lead to any inflationary pressure, and thus monetary policy was expected to be more accommodative. In other words, with an increase in economic capacity, the policy rate could be reduced to accommodate productivity growth.

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<sup>2</sup> By historical standards the recent financial crisis led to a severe recession, although Clark (2009) argues that this does not necessarily imply a return to the volatility level observed in 1970s or the end of the Great Moderation.

The downside of the productivity and investment acceleration could be an increase in the current account deficit unless domestic savings are sufficient. However, Valderrama (2007) argues that the acceleration in labour productivity could depress the domestic saving rate since the expected increase in the wages of more productive workers would immediately change their expenditure. Therefore, the increase in labour productivity and the deterioration in global imbalances could be associated with the Great Moderation.

The change in the structure of economy may also imply improvements in the sophistication of financial markets that facilitate the intertemporal smoothing of consumption. Although they do not make their case clear theoretically, Blanchard and Simon (2001) argue that improvement in financial markets might lead to a decrease in the volatility of consumption services, non-durables and investment. Another effect of the improvement in financial markets through the decline in consumption and output volatility is a fall in precautionary saving. Hence, as business cycle volatility falls, and a country faces less risk and financial markets improve, we may expect that firms and consumers will reduce their aggregate saving and increase their leverage. Thus, overall financial risk may accumulate and asset volatilities increase. Therefore, the incoherence of financial risks and business cycle volatility imply that monetary authorities, while focusing on the price stability objective, may not necessarily rule out a broader set of macroeconomic risk measures.

From an open economy perspective, a decrease in output volatility and precautionary savings could also impair the external balance or asset position of the economy. In a two-country business cycle model, Fogli and Perri (2006) find that as the relative volatility of any shocks falls and the home country faces less risk vis-à-vis its partners, its precautionary motive is weakened, and the component of its external assets accumulated for self-insurance purposes falls. They consider this to be a driving factor behind the global imbalances.

The decline in inflation and output volatility is also considered to result from the improvement in monetary policy, which has moved the economy closer to the efficient frontier. Bernanke (2004) points out that a more credible monetary policy is the underlying factor behind a shift in the Taylor curve. An outcome of this shift in volatility, as well as a fall in the inflation rate over time, brought a decrease in short-term interest rates in the United States and other industrialised economies. We believe that this also contributed to the excessive build-up of leverage and other financial risks, and to divergence of short-interest rates from the level required for financial stability.

### **International aspect and global imbalances**

From an international perspective, the Great Moderation in the US and other industrialised economies is also a period during which the US current account balance deteriorated – a phenomenon later known as “global imbalances”. During this period, the emerging market economies also became more integrated with international financial and goods markets. Fogli and Perri (2006) claim that the global imbalances are partially an outcome of efficient market responses to structural change in the world economy. Caballero et al (2008), on the other hand, argue that the global imbalances could be explained by the growth experience of the major economies including the United States, Japan, Europe and emerging market economies. More importantly, they claim that the equilibrium is an outcome of the differences in the capacity for producing sound financial assets. In addition, they argue that the asset market collapse in Japan, emerging market crashes in the 1990s and early 2000s, and the

increasing integration of faster-growing countries such as China have led to a sustainable reallocation of savings towards the United States, and to lower interest rates.<sup>3</sup>

Obstfeld and Rogoff (2009) claim that global imbalances and the recent financial crisis are outcomes of economic policies in the 2000s, and that both are therefore the product of common causes. We argue that the common causes of these two phenomena could be partially attributed to the Great Moderation. The particular features of this framework are as follows: loose monetary policy in the absence of an inflationary threat, lower global real interest rates, financial innovation and deregulation in financial markets and regulatory weaknesses. These features were coupled with the greater financial and trade globalisation and, as a result, policies in the United States and other advanced economies have also affected the emerging markets and other developing economies. In its Financial Stability Review, ECB (2004) states that “Large and growing U.S. current account deficits have generally been perceived as posing a significant risk for global financial stability, at least since 2000”.

There is a clear understanding that, during the Great Moderation, monetary policy or other structural changes have improved the ability of the economy to absorb shocks, thereby dampening its volatility. Blanchard et al (2010a), on the other hand, provide a framework in which they state that these policies did not mitigate the effect of financial shocks that struck advanced economies during the recent crisis. They argue that, during the Great Moderation, macroeconomic risks were accumulated, tail risk was largely ignored, and firms and consumers had high leverage and exposure to broader financial risks. This structure in advanced economies, particularly in the United States, makes it necessary to use a wider set of policy instruments, and not only short-term interest rates with a price stability objective (see Figure 1).

### **Emerging market economies and financial integration**

As discussed above, the increase in global financial integration is another important aspect of the past three decades. However, the initial stage of financial integration was mostly among the advanced economies. With the removal of restrictions on international financial transactions, financial innovations, and progress in information technologies, emerging market economies (EMEs) also started to be involved in financial integration. The increase in de facto financial integration as measured by total inflows to and outflows from EMEs is presented in Figure 5.

During the Great Moderation, some features of the integration of EMEs with advanced economies could be summarised as follows. First, EMEs did not have even capital account liberalisation (de jure liberalisation). For instance, although most countries have removed capital inflow and outflow controls over time (eg Latin American countries), countries such as China and India still maintain significant capital controls. In addition, with the outbreak of the Asian financial crisis, countries including Malaysia and Thailand re-imposed or increased capital controls with the aim of insulating their economies from the adverse affect of sudden capital reversals. Thus, the liberalisation of capital accounts has been uneven, and some EMEs have considered restrictions in case of any external or domestic shocks.

Second, taking the early 1990s as a benchmark point, capital flows have displayed a steep and rising trend over the past two decades (Figure 5). However, one important feature of capital flows is that they are known to be volatile. In particular, there have been major swings

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<sup>3</sup> For other explanations of global imbalances, see Blanchard et al (2005) on the portfolio balance approach, Obstfeld and Rogoff (2004) on the reallocation of demand for traded versus non-traded goods and domestic versus foreign goods, and Dooley et al (2003) on the “Bretton Woods II” argument.

in capital flows: the first big wave of capital flows continued through the 1990s until the Asian crisis of 1997–98. After that, capital flows were muted until 2002, after which they accelerated rapidly until the recent financial crisis of 2007–08 (2008 saw a particularly sudden reversal). A recent wave of inflows was seen in 2009–10.<sup>4</sup>

Third, after the 1997–98 Asian crisis, many EMEs – particularly China and Korea and other Asian economies – have experienced increases in domestic savings, current account surpluses and an accumulation of foreign exchange reserves. Therefore, one fundamental change is that capital flows are no longer helping to finance current account deficits; rather they are serving to help most of the EMEs accumulate foreign exchange. Among many other factors, the accumulation of foreign exchange reserves is considered to reduce the effect of negative external shocks and sudden capital reversals in the economy, thus increasing the economy's resilience to external shocks.

Fourth, EMEs have also undergone regime changes in their monetary and exchange rate policies. With greater integration and the removal of capital controls, some countries also had monetary policy independence as their primary objective while moving toward a more floating exchange rate regime, and explicit inflation targeting. For instance, Brazil, Peru, Mexico, Turkey, and South Korea are among the EMEs that adopted inflation targeting in the 2000s.

### **Implications for monetary policy and financial stability**

As capital movements across borders can pose challenges for monetary authorities, they have important implications for price and financial stability. First of all, countries that are more dependent on international capital flows for private or public financing are more prone to the risk of “sudden stops” or reversals in capital flows. Sudden stops are in general associated with large exchange rate movements, which may have a substantial impact on the real and financial economy, and hence lead to a financial crisis. On the other hand, a surge in capital inflows often leads to monetary growth, currency appreciation, and loss of competitiveness, which can undermine exports and the trade balance, and trigger domestic lending and asset price booms. Empirical evidence suggests that the acceleration of GDP growth during episodes of large capital inflows is followed by a significant and persistent drop in growth rates (Cardarelli et al (2009)). Another concern over international capital flows is the loss of monetary policy independence in the context of the trilemma in open economy macroeconomics when a fixed exchange rate regime is adopted. Even in the absence of a fixed exchange rate regime, capital inflows can still pose challenges for monetary authorities. For example, capital inflows may impose inflation pressure, which requires a tightening of monetary policy. However, tighter monetary policy, by increasing the short-term interest rate, can attract additional capital inflows and lead to stronger currency appreciation, thus putting the economy into a spiral where more risks are accumulated and financial stability concerns are aggravated. Additionally, as argued in BIS (2008), transmission of monetary policy through conventional channels of interest rate and exchange rate may have declined with capital flows including the bank intermediation of flows.

In addition to posing challenges to monetary policy, capital flows can also raise financial stability concerns due to different risk exposures. One feature of EMEs, particularly in Latin America, is that they have high exposure to foreign exchange risk, which is an important threat to financial stability. For instance, if a recipient of capital flows is engaged in unhedged FX borrowing while its asset side is denominated in local currency, a sharp depreciation with a capital reversal could substantially increase its debt burden. Currency mismatches on an aggregate level are also linked with banking and debt crises (eg Chile in the 1980s and

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<sup>4</sup> See IMF (2007) for a detail discussion on managing large capital flows to EMEs.

Mexico in the 1990s (BIS, 2008)). Another aspect of capital flows, particularly short-term portfolio flows or bank loans, is the liquidity concerns that may arise. In particular, bank lending financed by short-term foreign borrowing is a major source of vulnerability since it creates both maturity and currency mismatches. In addition, these types of bank lending are also associated with consumption and credit booms, which create additional risk through loose credit rationing.

In summary, while emerging market economies have become increasingly integrated with global financial markets and have established relatively sound macroeconomic fundamentals in recent years, they still have several sources of vulnerabilities. For instance, compared to historical standards in advanced economies, EMEs still display unstable macro environments including volatile growth rates, volatile asset prices, and underdeveloped financial markets (Figures 2, 4 and 6). Therefore, surges in capital flows in these economies are a major source of financial stability concerns, and may lead to the dual misalignment of price and financial stability (Figure 5).

## **2. The emerging market economies and the financial crisis: issues and consequences**

The global financial crisis that started in the advanced economies had important effects on EMEs' real economies and financial markets. Driven partially by trade linkages, the EMEs' output – as measured from peak to trough – showed substantial declines with considerable variation across countries and subgroups.<sup>5</sup> On the other hand, the effects on financial markets were characterised by a collapse in asset prices and private credit growth, an increase in risk premia, and exchange rate depreciation. All these effects were closely linked to the reversal in capital flows and global deleveraging.

To counter the adverse effects of the global crisis, EMEs took various measures to calm the financial markets and to revive the real economy. These measures included a variety of monetary and fiscal policy measures. As the crisis took hold within the EMEs and liquidity problems developed, central banks started to reduce policy interest rates and to take additional quantitative measures. Some EMEs, including Turkey, were able to lower the policy rate quickly and substantially. The monetary authorities also faced the possibility that lower policy rates might fail to stimulate the economy if a liquidity trap or high default risks should prevent them from taking effect. For this reason, they also moved to boost the credit supply by applying non-interest rate instruments such as a reduction in reserve requirements, the acceptance of a broader range of collateral, and credit easing. Additionally, central banks were also involved in foreign exchange interventions and provided foreign exchange liquidity to domestic markets with a view to reducing exchange rate volatility and its disruptive effect on international trade (see, for example, Ghosh et al (2009) for additional discussion of policy options for EMEs).

In their extensive analysis of the linkages between the advanced economies and the EMEs during crises, Kose and Prasad (2010) note a strong yet gradual divergence between the business cycles of advanced economies and those of EMEs. They claim that this divergence implies a decline in EMEs' vulnerability to shocks emanating from advanced economies, and hence an improvement in their resilience. On the other hand, Kose and Prasad's empirical findings suggest that the convergence of business cycles among EMEs has increased.

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<sup>5</sup> See IMF (2010) and Kose and Prasad (2010a) for further details of country and subgroup variations among EMEs.

In addition to studies that focus on the divergence of business cycles between the two groups of countries, several papers have looked at the differing impact of the crisis on various EMEs. For instance, Izquierdo and Talvi (2010) find that the resilience of Latin American economies during the global financial crisis was buttressed by strong fundamentals that included low inflation, an external and a fiscal surplus, a sound banking system, a large stock of international reserves and a flexible exchange rate regime. These strengths are believed to have characterised other EMEs that also experienced at least some combinations of the above-listed factors. On the other hand, Berkmen et al (2009) examine the role of financial factors and find the results consistent with the essential problems that drove the advanced economies into the crisis. They claim that the countries with a more leveraged domestic financial system and faster credit growth suffered a larger output loss during the crisis. Similarly, Blanchard et al (2010b) highlight the role of a high level of short-term external debt in output loss during the crisis. As additional explanations that account for increased resilience among EMEs, Kose and Prasad (2010) also consider a large buffer of foreign exchange reserves, greater trade linkages among EMEs and greater diversification of production and export patterns.

In addition to the fundamental factors and monetary policy measures listed above, EME central banks used various tools that explicitly target financial stability, and hence reduce vulnerabilities attributable to leverage, liquidity and market risk, and interconnectedness. To shed some light on the issue, CGFS (2010) surveyed central banks on how they conceived macroprudential policy and used macroprudential instruments. Examples of macroprudential instruments used by central banks during and after the crisis include loan-to-value caps, debt-to-income limits, foreign currency lending limits, aggregate credit growth ceilings, limits on interbank exposure, countercyclical or dynamic provisioning, loan-to-deposit limits, and limits on open currency positions. These are broadly classified as measures targeting credit growth, and those that focus on the size and composition of bank balance sheets. CGFS reports summary results of the survey with responses by 33 central banks that used these instruments. The survey's most remarkable result is that EMEs significantly outnumbered advanced economies as users of some type of macroprudential instrument. We believe that this was a significant factor in the better performance of EMEs both in coping with the crisis and in managing its aftermath. Thus, macroprudential policy action can be an important element in assuring price and financial stability.

### **Policy implications and prospects**

The business cycles of EMEs are expected to become increasingly synchronised as high growth rates are sustained, domestic markets expand, financial markets become more sophisticated, and trade and finance linkages increase. Additionally, sound macroeconomic policies over the longer term and the linkages among the EMEs could usher them into an era similar to the Great Moderation experienced in advanced economies. As the EMEs maintain macroeconomic stability, they would substantially dampen the effect of domestic shocks, and become more resilient to the shocks emanating from advanced economies. Nevertheless, the moderation in EMEs coupled with greater sophistication in financial markets might also deliver the same outcomes seen in advanced economies, namely the build-up of financial risks, and increase in asset price volatility fuelled by highly leveraged households and firms. This calls for the central banks to have the necessary macroprudential tools in their policy packages to mitigate financial risks, and hence maintain financial stability



### **3. Where does Turkey stand? Crisis management, price and financial stability**

Turkey's economy performed strongly in the years leading up to the global financial crisis, with its GDP growing at an annual average of 6.75% between 2002 and 2007. This was the result of sound macroeconomic policies, including a credible monetary policy, fiscal discipline and structural reforms in the banking sector after the 2001 crisis. The country's high growth prospects and increased global liquidity helped to attract a large influx of capital consisting of both foreign direct investment (FDI) and portfolio flows. The capital inflows were accompanied by real exchange rate appreciation and widening current account deficits. On the other hand, sound macroeconomic policies brought the inflation rate down from a fairly high to a moderate level. That said, Turkey had a higher inflation and policy rate than most EME economies when the global financial crisis started. As noted in IMF (2010b), Turkey's overall economic fundamentals were less strong than those of EMEs in Latin America and Asia as it went into the global crisis, although it had a stronger position than emerging Europe.

As in many other EMEs, the first-round effect of the crisis was felt via the financial markets. Capital started to flow out of the country, the exchange rate sagged, asset prices fell, and the risk premium increased. Partly due to the sudden reversal in net capital flows, liquidity conditions tightened and bank lending seized up. The second-round effect was through the collapse of external and domestic demand. Mainly due to the loss of business and household confidence, external shocks, and uncertainties in the international environment, domestic consumption and investment dropped, and exports slumped. All these factors contributed to a massive output contraction, particularly in the last quarter of 2008 and the first quarter of 2009.

#### **Policy measures to cope with the crisis: monetary policy**

During the global financial crisis, the measures taken by the Central Bank of the Republic of Turkey (CBRT) included a substantial loosening of monetary policy. As mentioned above, Turkey entered the global financial crisis with moderately high inflation and policy rates. As domestic and external demand fell and the crisis began to deepen, expectations for a substantial decline in the inflation rate took hold. Thus, the CBRT cut the main policy rate by a total of 1,025 basis points, from 16.75%, over the year starting from November 2008 (Figure 11). These cuts were the highest among the OECD countries and the EMEs. The lower policy rate brought market rates down for both deposits and credit. In fact, short- and long-term real interest rates approached zero, and remain at record low levels.

To sustain the recovery, the CBRT also took swift action in the foreign exchange, money and credit markets. First, as the crisis hit the EMEs from October 2008, the CBRT terminated foreign exchange (FX) market intervention and provided FX liquidity in the market as necessary. Before the end of October 2008, the bank provided additional FX liquidity to alleviate possible price fluctuations as market liquidity tightened. At the onset of the crisis the central bank also resumed its intermediary functions related to foreign exchange deposits and gradually increased the transaction limits for banks in the FX deposit market. The required reserve ratio for the FX liabilities of banks and other finance houses was lowered by 2% before the end of 2008.

The CBRT took several measures in the Turkish lira market. First, the Bank tightened the gap between borrowing and lending rates in the money market by 1% to reduce the potential volatility in overnight rates. Second, after October 2008, with a view to stabilising the money markets and eliminating volatility in overnight interest rates, the Bank started to inject more liquidity. The smooth functioning of the credit market was another important component of crisis prevention measures. As the probability of a permanent liquidity shortage started to

increase, the CBRT started three-month repo auctions, and reduced the required reserve ratio for Turkish lira by 1% from 6%.

### **Recovery and post-crisis measures**

The economy started to recover swiftly in the second quarter of 2010. Largely due to tax incentives, private consumption was the driving force of the recovery process. By contrast, investment demand was relatively weak in the early stages of the recovery. The global economic outlook – particularly for the main trading partners in the euro area – also delayed the recovery in external demand. However, an increase in product market diversification and relocation later led to a gradual increase in total exports.

As the economic recovery became more evident, central banks in some advanced economies and EMEs started to prepare the markets for normalisation. A common belief was that, over a long period, loose monetary policies combined with expansionary fiscal policies should be creating further fragilities in the economy and might lead to inflation, which would entail additional welfare costs in the future. For that reason, the CBRT took the following measures related to the foreign exchange markets, liquidity management, and maturity mismatches.

As FX liquidity improved and international capital flows revived, the Turkish lira started to appreciate. The central bank therefore started to intervene in the FX market to build up reserves in August 2009. However, as capital inflows increased in mid-2010, the CBRT altered its method for foreign exchange buying auctions with effect from 4 October 2010. This policy aimed to benefit from capital inflows more effectively with a view to strengthening foreign exchange reserves and to enhancing resilience against any sudden reversal in flows (see Figure 13). Thanks to the improvement in the FX market and accelerated private credit growth, the FX required reserve ratio was also gradually increased in 2010, and was brought back to pre-crisis level of 11%.

Several other measures have targeted the Turkish lira market. First, a technical interest rate adjustment and corridor system are being implemented for efficient liquidity management (see Figure 12). With this policy, overnight market rates are allowed to deviate from the policy rate to a certain extent. However, with borrowing rates approaching the zero limit, the gap between the borrowing and lending rate was widened drastically. This policy is also intended to lengthen the maturity of Turkish lira transactions. Second, the Bank started to use the one-week repo auction interest rate rather than the overnight borrowing rate as its policy rate while maintaining its monetary policy stance.

As credit growth accelerated and capital flows increased, the required reserve ratio was gradually increased until it stood above its pre-crisis level. Additionally, the remuneration of reserves was terminated to increase the effectiveness of this policy tool and withdraw further liquidity from the market.<sup>6</sup> This required reserve policy is expected to increase the effectiveness of the lower policy rate (as discussed below) and the wider interest corridor. Meanwhile, the required reserve ratio for Turkish lira liabilities has been adjusted to favour deposits with longer maturities. This policy aims both to slow the acceleration in credit growth and to reduce maturity mismatches and related risk by lengthening the maturity of liabilities.

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<sup>6</sup> For further details, see CBRT, “Monetary policy exit strategy”, 2010.

## Post-crisis outlook: a further need for macroprudential policies

Output started to exceed its pre-crisis level in the second quarter of 2010. With the debt crisis continuing to evolve in some European economies and with growth slowing in the third quarter, domestic and external demand started to diverge more markedly. In particular, the import of goods and services has rallied in recent periods, but total exports have been steady, mainly due to the export of services (Figure 7).

Among the subcomponents of GDP, private consumption has increased significantly in recent quarters, driven partially, it is believed, by credit supply. Expansionary monetary policy in the advanced economies has prompted further capital flows into EMEs, which amplify the acceleration in domestic demand and credit growth. Under the current economic conditions of a low policy rate and the absence of an inflationary threat, credit demand is also increasing as loan rates show a declining trend. Low interest rates and loose credit conditions are expected to spur economic growth over the medium term (Figure 8).

Although the CBRT has taken additional measures in the context of monetary policy exit strategies, several features of the current economic outlook are particularly important for EMEs including Turkey. Given the EMEs' sound macroeconomic foundations, the surge in capital inflows may well be sustained over the next few years. As discussed in the literature, such episodes of capital inflows are generally followed by acceleration in output growth, increasing household and corporate indebtedness, asset price bubbles and a deterioration of the current account balance. Furthermore, the recent wave of capital flows is mainly in the form of portfolio investment, as the uncertain international economic outlook has choked off the flow of FDI to the EMEs.

The current economic outlook thus raises important concerns over financial stability, which has become a major policy objective for the monetary and other financial authorities. Whereas price and financial stability were the main concerns as the economy slipped into crisis, financial stability has gained importance as the recovery accelerates. The difficulty here is that the policy rate required for price stability and the one that would be ideal for financial stability are expected to diverge as growth accelerates and international capital flows surge. In this case, a policy rate that targets inflation could be less than optimal for keeping financial risks in check. This implies that the central bank, as in many other EMEs, will need to use policy instruments other than short-term interest rates if it is to contain the attendant risks (see Figure 1, and Scenario I in Figure 16).

In these circumstances, the use of other policy instruments is warranted if financial stability is to be maintained. These could include required reserves and liquidity management facilities, and other measures targeting credit growth, such as loan-to-value caps, or measures that address the size and composition of bank balance sheets, such as measures to limit procyclicality and specific financial risks, liquidity requirement ratios, additional taxes and fiscal controls. To pave the way for the use of such macroprudential measures, the CBRT has used various communications tools. For instance, the summary of its October 2010 Monetary Policy Committee meeting states that "Should the capital inflows continue, the divergence in the growth rates between domestic and external demand is likely to intensify in the forthcoming period. Additional policy instruments, other than the short-term policy rates, would be needed to curb risks emanating from this channel. In this respect, the Committee stated that, should the disparity between domestic demand and external demand continue, it would be necessary to utilize other policy instruments such as reserve requirement ratios and liquidity management facilities more effectively, to address financial stability concerns including rapid credit expansion and a deterioration in the current account balance." (CBRT (2010d) p 4).

In this context, it is necessary to clarify the context of policies for financial stability, as well as the principal indicators that are being considered for monitoring by the CBRT. These indicators are the indebtedness ratio and debt maturity for households and firms. As found in previous studies, eg Berkmen et al (2009), it was the countries with more leveraged domestic

financial systems that suffered a greater loss of output during the crisis. In addition, maturity and currency mismatches have been the triggering factors behind banking crises particularly in Latin American countries. As measured against the scale of economy, a lower level of bank loans and lower household liabilities with less FX risk exposure have bolstered the resilience of the Turkish economy during the global financial crisis. Keeping household debt and bank leverage at moderate levels should therefore contribute to the country's financial stability. However, maturity mismatches have widened as the maturities of firms' external debt and government debt securities have lengthened while deposit maturities have contracted. The other policy elements for financial stability include the FX positions of the public and private sectors, and FX risk management using futures and options markets instruments.

A major vulnerability at the current economic conjuncture is the widening current account deficit, with the associated implications for financial stability. Two main factors stand behind this development: first, that the extensive borrowing opportunities due to excessive liquidity and low interest rates have increased demand for both domestically produced and imported goods. Second, the appreciation of the real exchange rate has boosted demand for imports even further, undermining export performance. In addition, the type of capital transaction that finances the current account deficit is also an important source of vulnerability. Turkey's extensive FDI inflows in recent years helped to finance the current account deficit, but these have now dried up, as in other EMEs, in the face of the uncertain international economic outlook. The recent wave of capital inflows is mainly in the form of portfolio investment and, to some extent, of bank loans. FDI flows are considered to be the more stable form of capital flow during both turbulent and settled times, while portfolio flows are likely to be more transitory as they are susceptible to sudden reversals, informational problems and herding behaviour (see, for example, Calvo and Mendoza (2000), and Sarno and Taylor (1999) for further discussion). Hence, the optimal policy mix for financial stability must take into account the financing of the current account deficit by potentially transitory capital inflows, and the implied linkage with financial stability (Figures 9 and 10).

In this context, an increase in policy rates should suppress credit demand and hence could reduce the current account deficit via the credit channel. However, such a policy would increase the differential between domestic and foreign interest rates, and thus feed further capital inflows and appreciation of the domestic currency. This, in turn, would lead to a further deterioration of the current account deficit via the exchange rate channel. Although the net effect of these two channels remains ambiguous, and requires an empirical examination, a further increase in the policy rate does not seem to be a plausible option as a means of curbing the current account deficit. Instead, the optimal policy mix might consist in using macroprudential instruments to restrain credit growth while gradually reducing the policy rate with the aim of limiting exchange rate appreciation.

### **Financial stability outcomes: an evaluation**

The divergence of domestic and external balances, a surge in capital inflows and credit growth, a widening current account deficit, and a real and nominal appreciation of the Turkish lira became apparent in the last quarter of 2010. These domestic and external conditions confronted policymakers with a difficult dilemma, now that the maintenance of financial stability had become the prerequisite for continued price stability. To solve this dilemma, the CBRT applied a new policy mix that consisted of a lower policy rate, a wider interest rate corridor and higher reserve requirements. Within this framework, which took shape mainly after mid-November 2010, the CBRT implemented a series of measures that aimed to bolster financial stability by circumventing short-term capital flows, slowing down the acceleration of credit growth, tightening market liquidity, steepening the yield curve, and increasing the volatility of market rates for short-term lira and swap transactions. These policies are designed to strengthen the perception that the central bank's financial stability mandate has gained in importance.

The new policy mix has price, quantity and volatility aspects that establish a new equilibrium for monetary policy. While lowering the policy rate could be construed as easing in terms of price stability, the significant increase in the required reserve rate and other instruments that regulate lira liquidity is perceived as a quantitative tightening in the credit market. In addition, asset prices, including overnight lira rates, swap rates and exchange rates, have displayed greater volatility as the interest rate corridor between borrowing and lending rate was widened.

The policy mix after mid-December was implemented by raising required reserves on Turkish lira liabilities to 9.5% on average with a significant differential between the rates on short-term and long-term liabilities.<sup>7</sup> In addition, the policy rate was reduced by 75 basis points, the interest rate corridor was widened by 50 basis points, and daily FX purchases were reduced to US\$50 million for 2011.

The widening of the interest rate corridor led to a substantial deviation of overnight interest rates from the policy rate as well as increased volatility in overnight rates. The policy also affected short-term rates on swap transactions and their volatility, which has spiked markedly upwards over the past two months (Figures 14 and 15). Besides the increase in volatilities, the initial impact of interest rate and required reserve policy changes could also be observed in a marginal increase in the maturities of swap transactions and Turkish lira repo transactions, the maturity composition of deposits, and a steepening yield curve (without any significant change in inflation expectations).

Daily FX purchases with a further increase in required reserves, a lower policy rate and the interest rate corridor have affected both nominal and real exchange rates. The effect of these policies is seen in Figure 14, which shows how the Turkish lira/US dollar exchange rate has started to depreciate and to diverge from other emerging market currencies. In contrast to an FX intervention sterilised through open market operations, FX interventions paired with an increase in reserve requirements and other market liquidity measures are expected to have an immediate impact on the real exchange rate. This argument was supported by Reinhart and Reinhart (1999) in a framework that extends the seminal overshooting model of Dornbusch (1976). The theoretical findings in Reinhart and Reinhart (1999) are supported by evidence from Latin American and Asian countries during the 1990s when these economies experienced substantial and volatile international capital flows.

The initial impact of the new policy mix on the maturity of debt instruments, credit growth, the exchange rate and yield curve is in line with the CBRT's projections. However, we still do not have enough evidence to make an overall assessment of the full impact of monetary policy measures on financial stability, and to disentangle these effects from other macroprudential and fiscal policy measures taken by other authorities.<sup>8</sup> Therefore, the evolution of financial stability indicators, including debt ratios and maturities, FX positions, and other financial risks, in upcoming periods will depend on the domestic and external economic environment which will also shape the monetary policy stance. Still, the use of fiscal and macroprudential measures will have a vital part to play in reducing policymakers' reliance on monetary policy, and to reinforcing the coherence of price and financial stability.

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<sup>7</sup> The required reserve ratios were first adjusted with respect to maturity in mid-December with a lower rate for liabilities with longer maturities. In late April 2011, the required reserve ratio was raised to 16% for both demand deposits and one-month deposits; 13% for deposits with a maturity of 1–3 months and other lira liabilities, including repo transactions; 9% for 3–6 months deposits; 6% for 6–12 months deposits; and 5% for one-year and longer deposits. FX required reserve rates were also raised above the pre-crisis level of 12% for liabilities with maturities of less than a year.

<sup>8</sup> Measures taken by the Banking Regulation and Supervision Agency and Ministry of Finance include a loan-to-value cap, minimum payments on credit card balances, a tax cut on interest from foreign bonds, a reduction in the transaction tax on sales of domestically issued corporate bonds, and tax hikes on consumer loans.

## 4. Concluding remarks

The recent global financial crisis that hit advanced economies and some of the emerging market countries led to a major slump in output, an increase in deflation risk, and a rise in asset price volatilities. As the crisis deepened and expectations deteriorated, the central banks in advanced economies launched unconventional monetary policies to restore confidence and revive their economies. The crisis in advanced economies was quickly transmitted to the EMEs, which faced the additional challenges of currency fluctuations, asset price volatility, and a sudden reversal in capital flows. EMEs coupled their conventional monetary policy tools with macroprudential policies in order to mitigate financial risks and avert a deep recession.

This paper provided a perspective on the Great Moderation as it was experienced in advanced economies and on the growing financial integration of EMEs, and the implications of these phenomena for monetary policy and financial stability. While sound monetary policy and structural changes during the Great Moderation have dampened cyclical fluctuations and improved the ability of the economy to absorb shocks, these factors did not mitigate the financial risks accumulated in the advanced economies. EMEs, on the other hand, experienced boom-bust cycles, sudden stops and structural changes while the advanced economies were enjoying their age of moderation. However, in the past decade, EMEs have become more integrated with the global economy, and have shown increased resilience thanks to strong fundamentals including low inflation, external and fiscal surpluses, sound banking systems, a large stock of international reserves, and flexible exchange rate regimes. With their sound macroeconomic fundamentals, EMEs are expected to generate sustained high growth over the long term and to become the motor of the world economy (Table 1, Figures 2 and 3).

We conclude that policy frameworks for stable output growth and inflation may still be the main focus of central banks. That said, the recent financial crisis has shown that these institutions also need to adopt macroprudential policies for financial stability. As EMEs go through a phase of moderation similar to that experienced by advanced economies, they will need to establish more credible macroprudential policies if they are to set their financial systems on sound foundations.

Table 1  
**Macroeconomic indicators**

	GDP growth		Investment/GDP		Savings/GDP		Fiscal balance/GDP	
	AE	EME	AE	EME	AE	EME	AE	EME
1980–89	3.07	3.48	23.11	24.06	21.72	22.62	–	–
1990–99	2.73	3.61	22.15	25.76	21.50	22.81	–	–
2000–09	1.78	6.09	20.71	26.95	19.68	29.62	–3.22	–1.55
2010–15*	2.50	6.65	19.64	31.51	19.07	33.36	–5.31	–2.28

Note: AE = advanced economies; EME = emerging markets and developing countries (both IMF World Economic Outlook definitions). All variables are in percentage terms and indicate average over decades.  
 \* IMF forecast.

Sources: IMF World Economic Outlook Database.

Figure 1

**Changing monetary policy priority – price vs financial stability**

(a) Average Growth Era



(b) High Growth Era

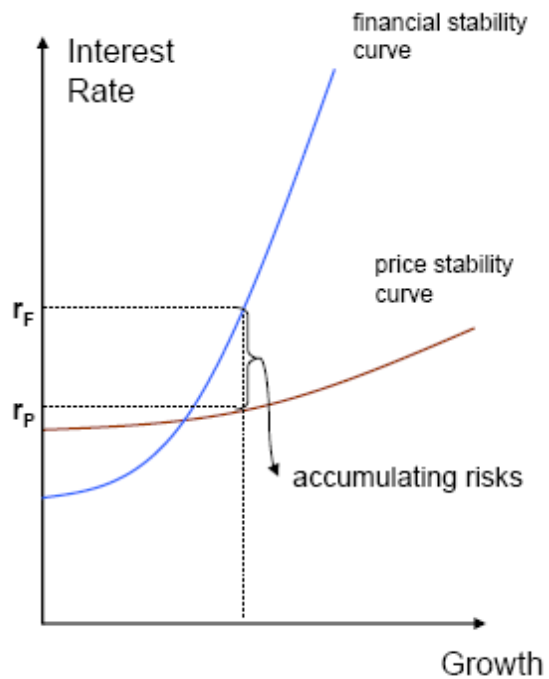
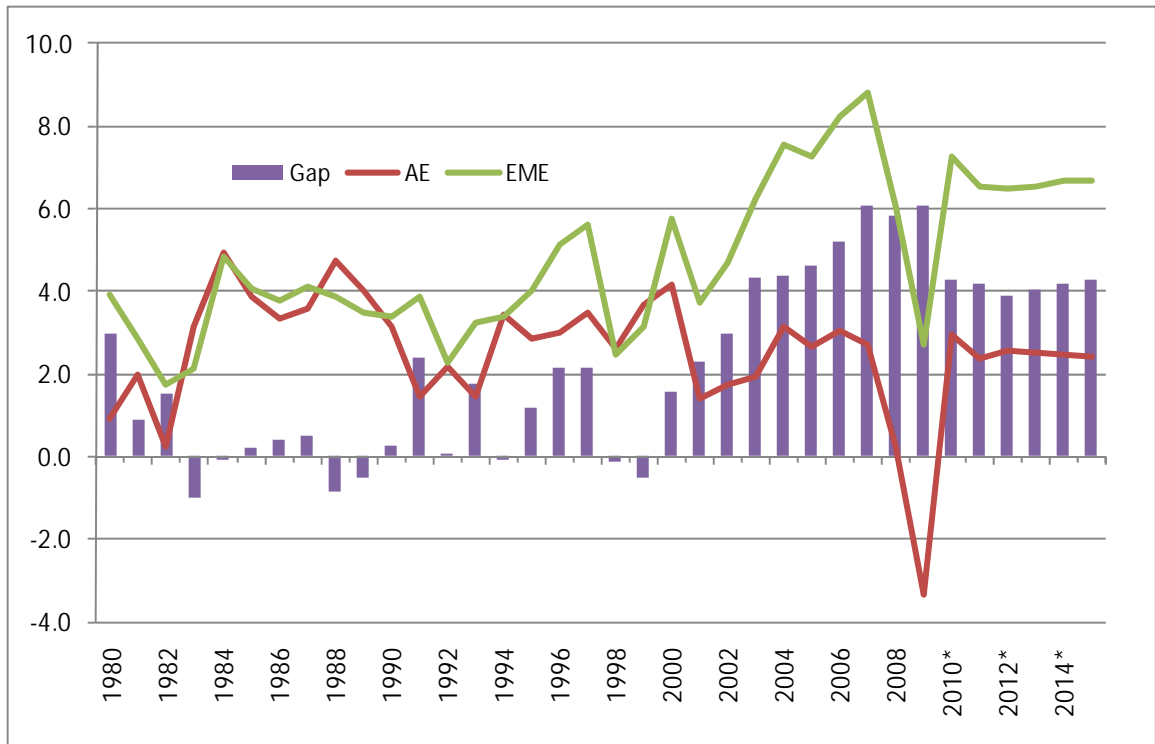


Figure 2  
**Growth performance – advanced economies and EMEs**

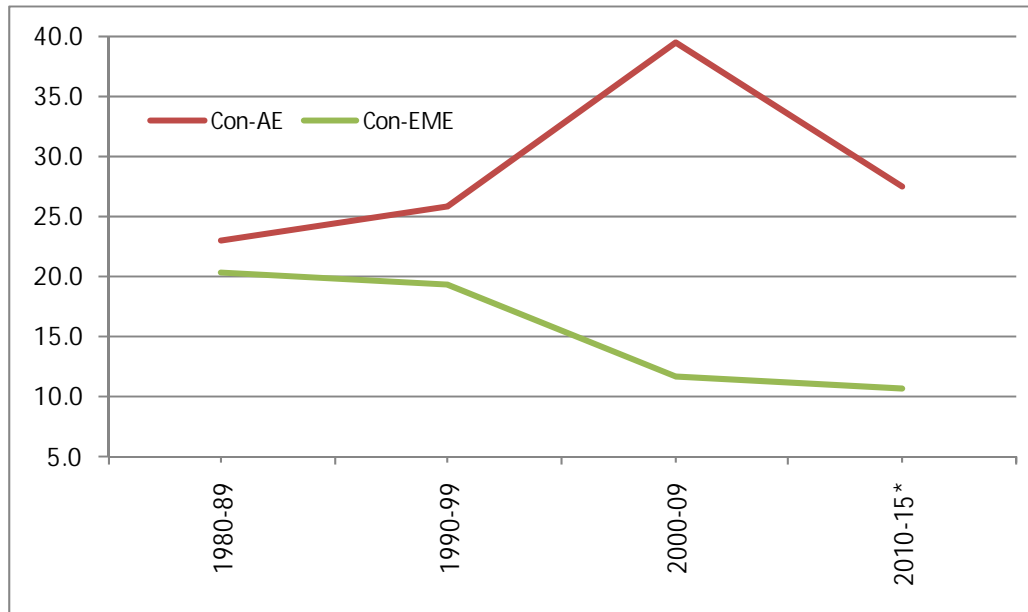


Figures for 2010 and after are forecasts. AE = advanced economies; EME = emerging markets and developing countries (both IMF World Economic Outlook definitions).

Source: IMF WEO database.



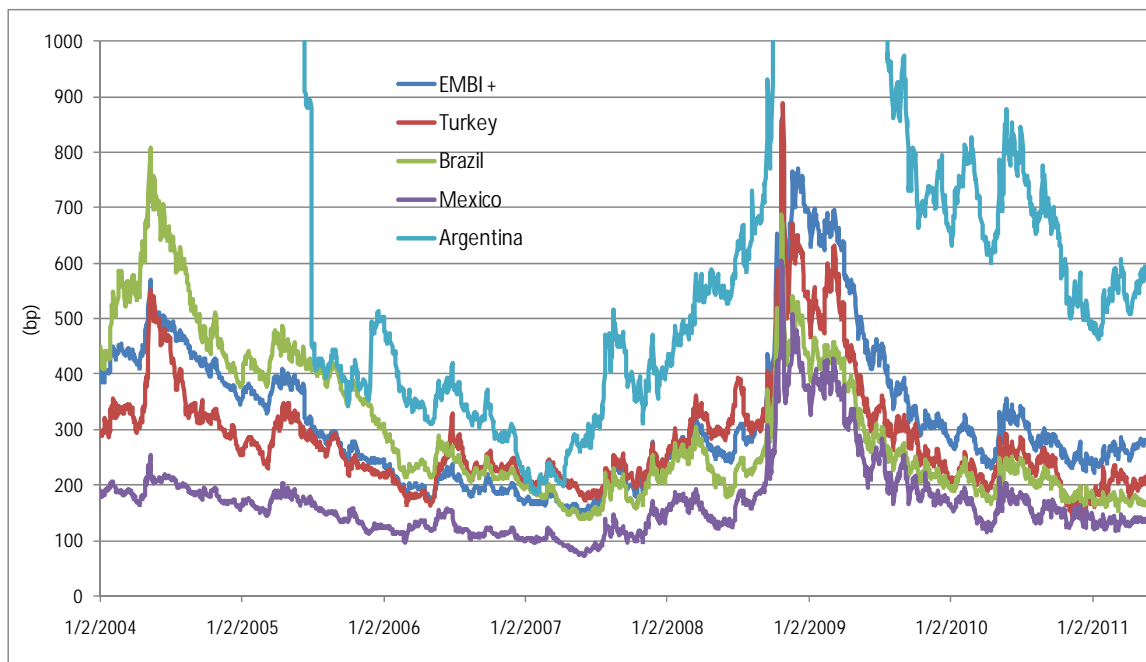
Figure 3  
**Convergence – advanced economies and EMEs**



AE = advanced economies; EME = emerging markets and developing countries (both IMF World Economic Outlook definitions).

Source: IMF WEO database and authors' calculation based on the Rule of 70, which gives the number of years for the real GDP to double.

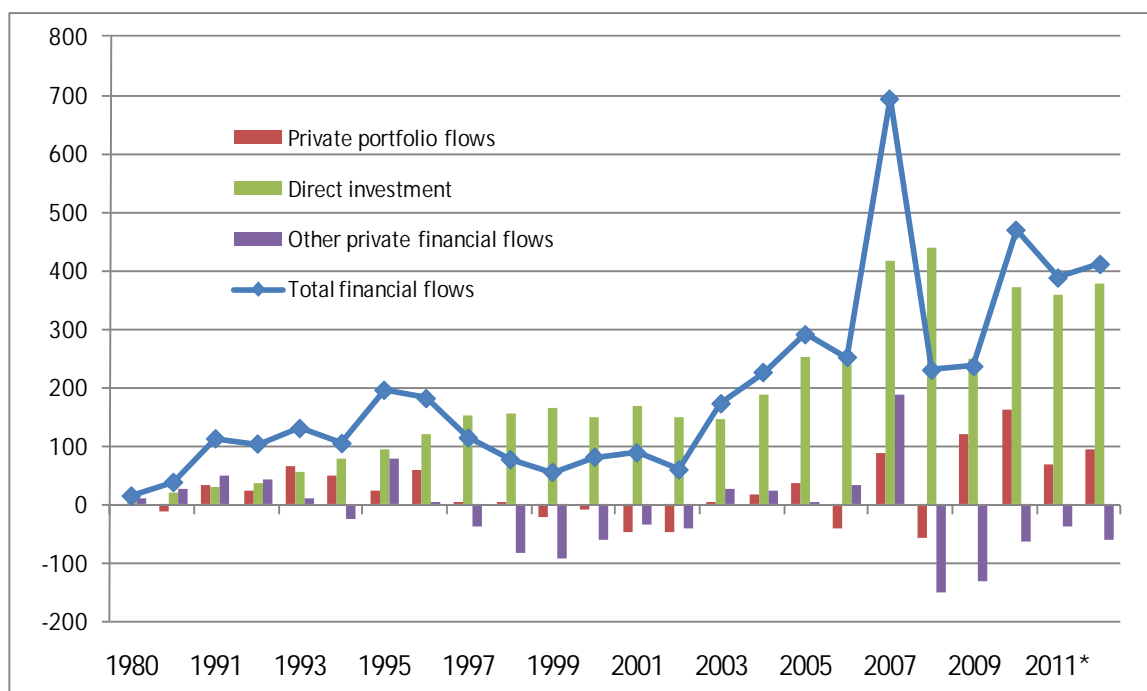
Figure 4  
**Secondary market bond spread – Turkey and Latin American economies**



Spread is difference between selected countries' bond return and US Treasury return.

Source: JP Morgan Emerging Market Bond Index (EMBI+).

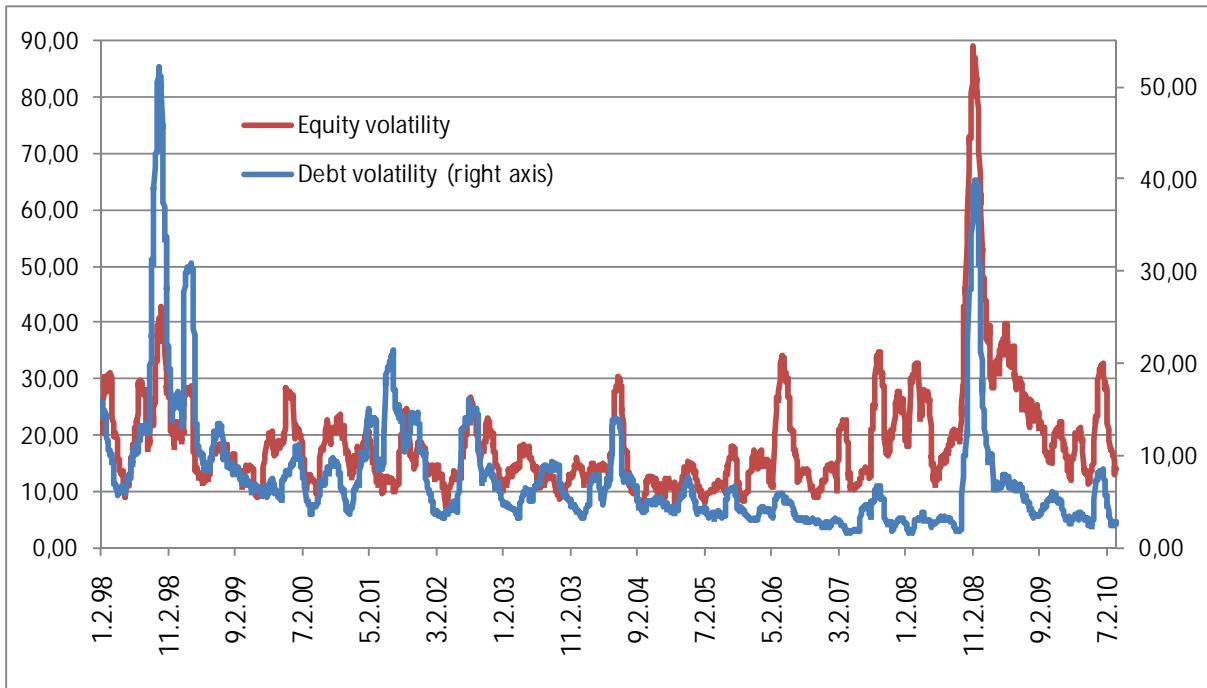
Figure 5  
**Net private financial flows to EMEs**  
 US dollar billions



Figures for 2010 and after are forecasts.

Source: IMF WEO database.

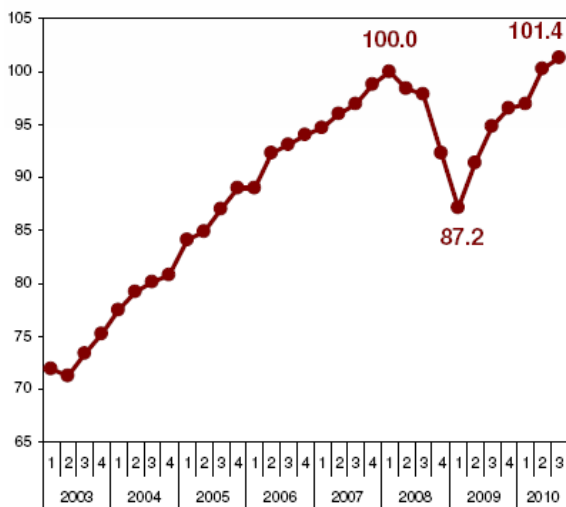
Figure 6  
Emerging market volatility measures



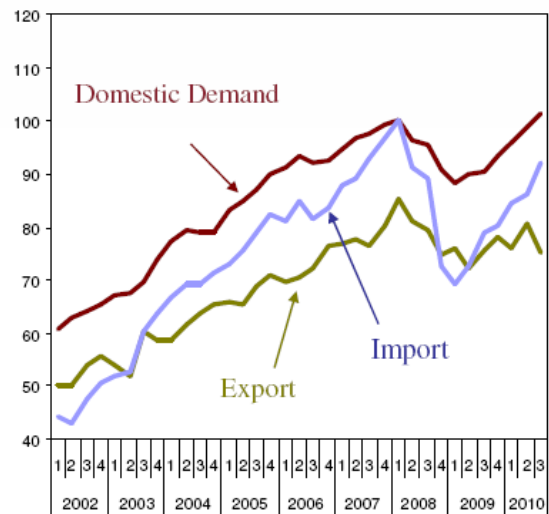
Source: IMF GSFDR Database.

Figure 7  
Turkey – economic outlook and risks

(a) Seasonally adjusted GDP  
2008 Q1=100



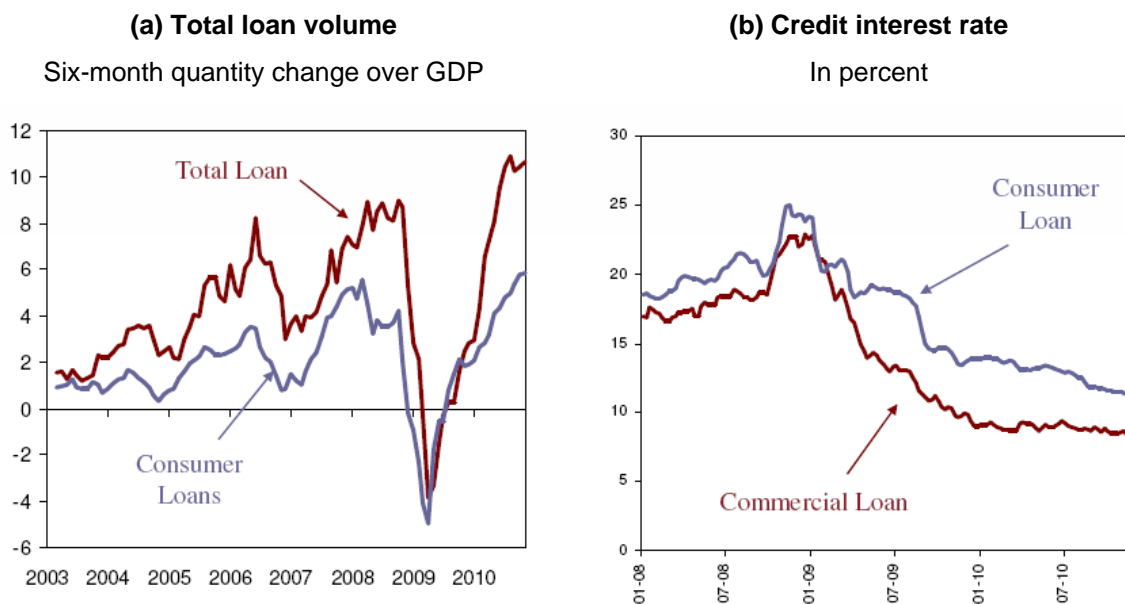
(b) Aggregate demand components  
Seasonally adjusted, 2008 Q1=100



Sources: TurkStat and CBRT.

Figure 8

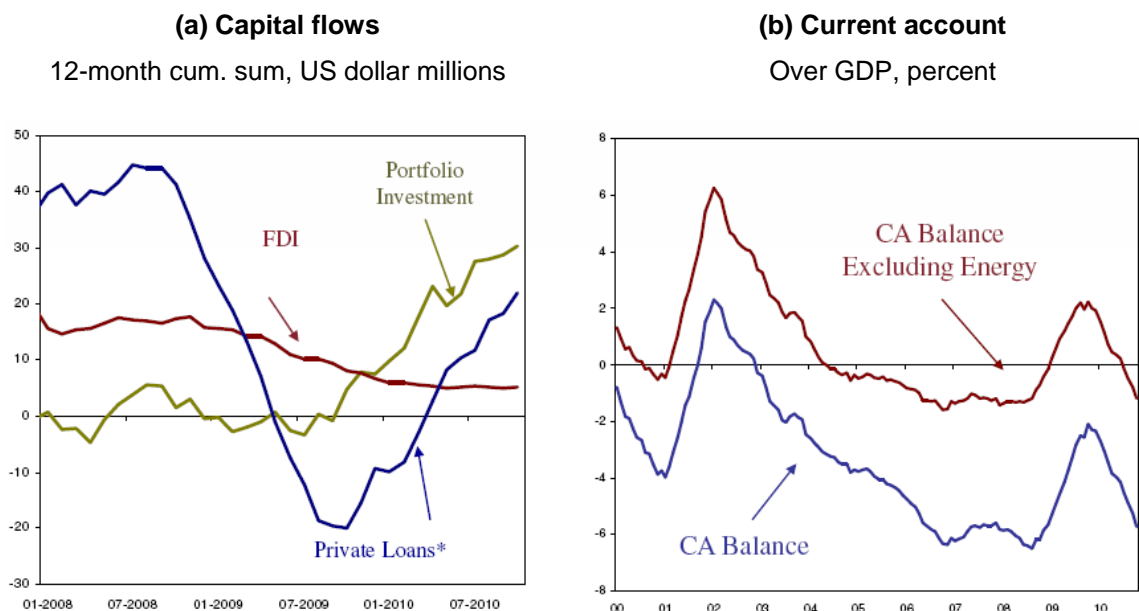
**Expanding credit volume**



Total loans are adjusted for exchange rate effect, and annualised. Loan rates are two-week moving average. Sources: TurkStat and CBRT.

Figure 9

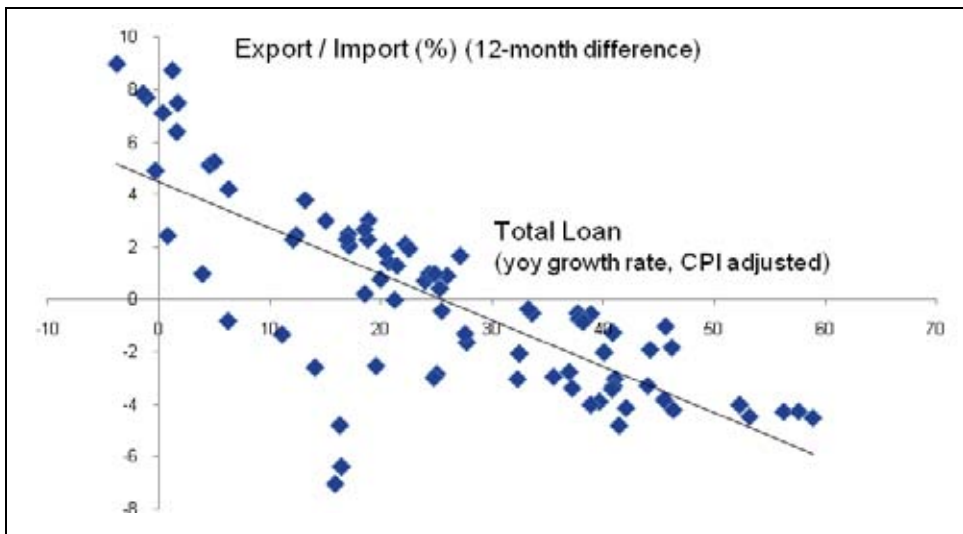
**Balance of payments**



\* Private loans are adjusted for the amendment made in Decree no 32.

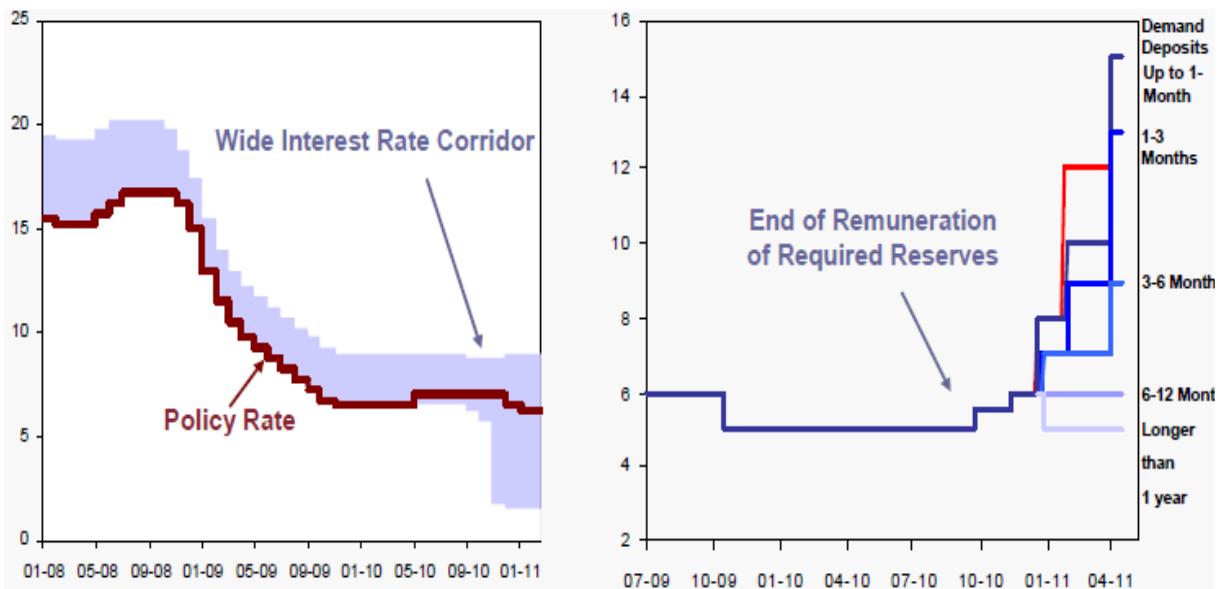
Sources: CBRT and BRSA.

Figure 10  
**Credit growth and current account balance**



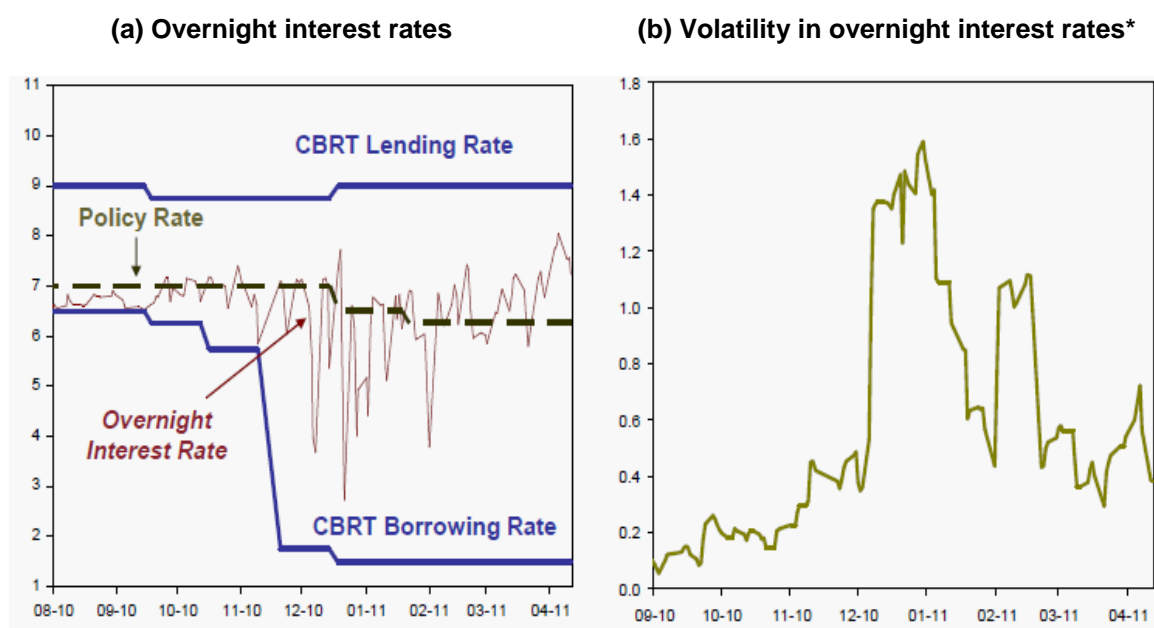
Sources: CBRT and BRSA.

Figure 11  
**Policy rate and required reserve ratio**  
 In percent



Source: CBRT.

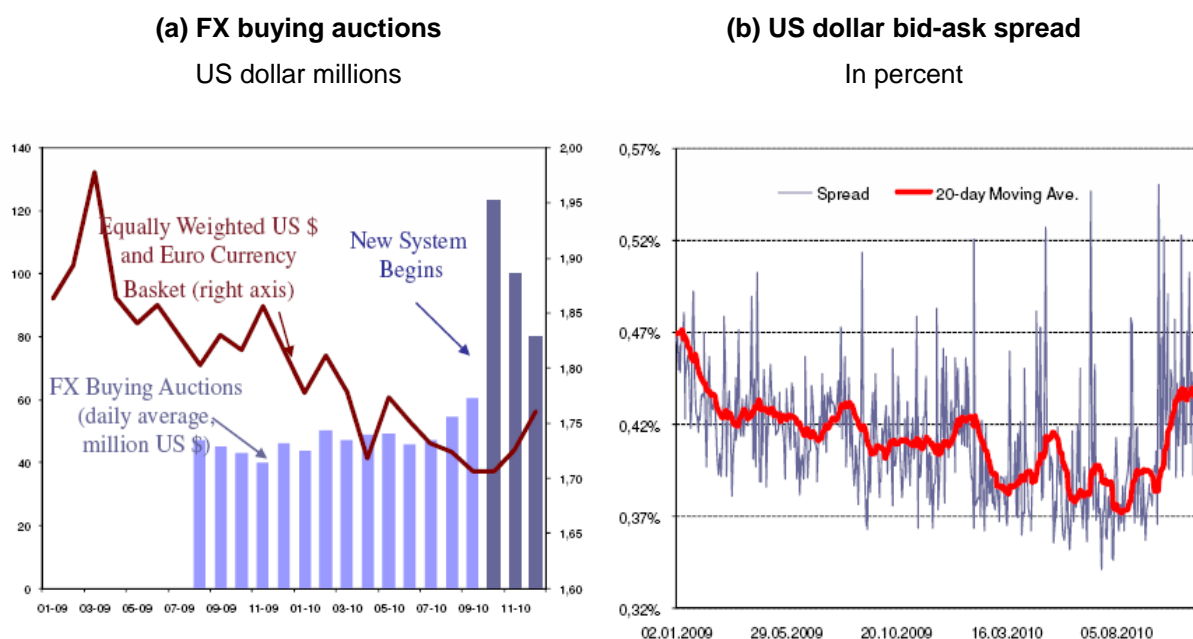
Figure 12  
**Corridor system and O/N rate**  
 In percent



\* Two-week standard deviation.

Sources: CBRT and Istanbul Stock Exchange.

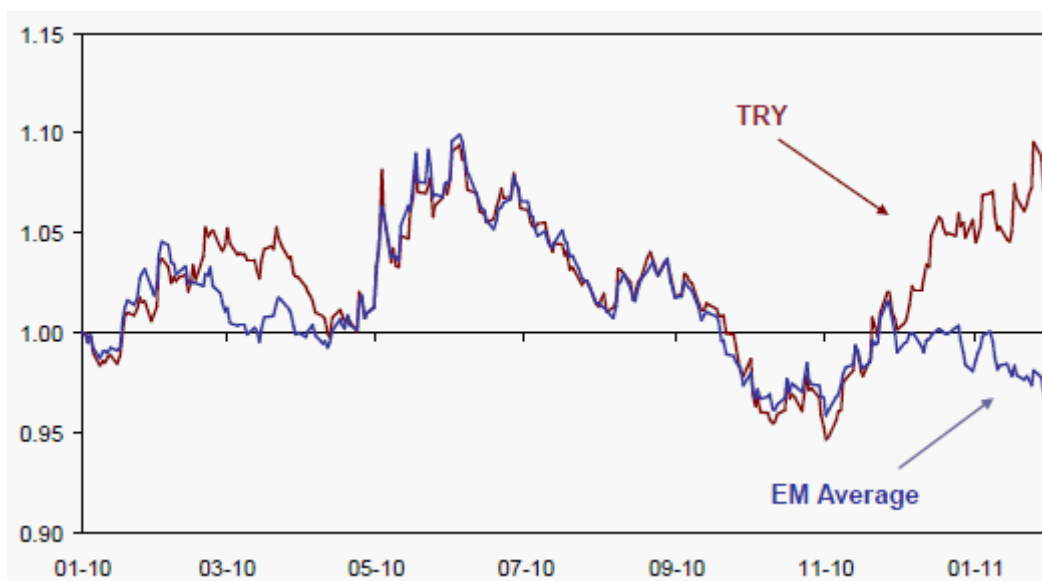
Figure 13  
**Foreign exchange purchases**



Sources: CBRT and Istanbul Stock Exchange.

Figure 14

**Turkish lira and other emerging market currencies against US dollar**



Note: Average of emerging market currencies, including Brazil, Chile, Czech Republic, Hungary, Mexico, Poland, South Africa, Indonesia, South Korea and Colombia.

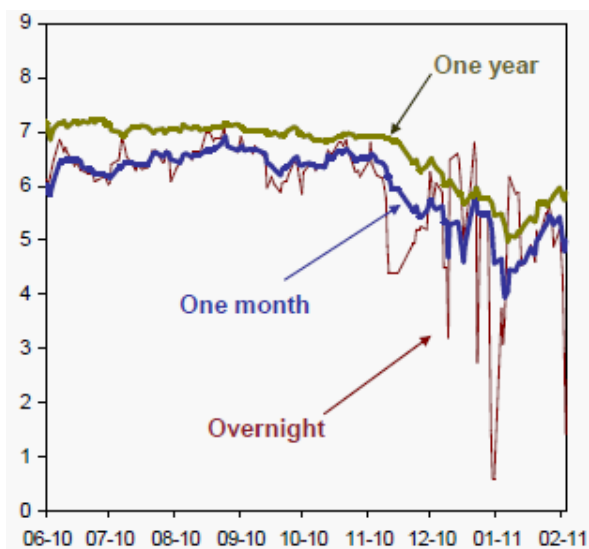
Sources: Bloomberg, CBRT.

Figure 15

**Swap rates and volatility**

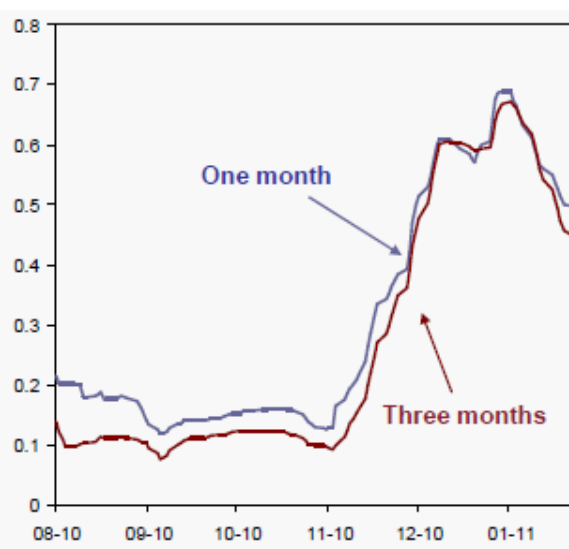
**(a) Swap rates**

(In percent)



**(b) Volatility of swap rates**

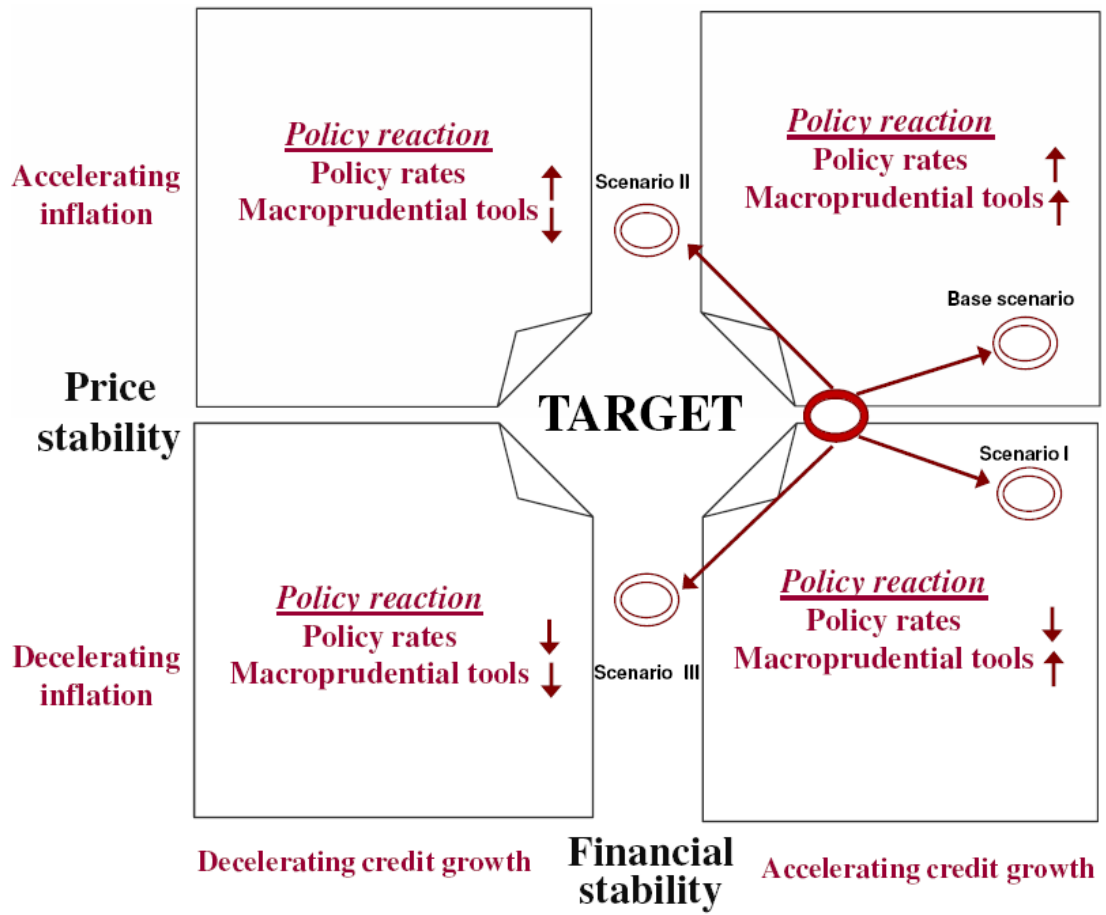
(2-week standard deviation)



Sources: CBRT and Istanbul Stock Exchange.

Figure 16

Current economic policy – price and financial stability



Source: CBRT Financial Stability Report.



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IFC Satellite meeting at the ISI World Statistics Congress on “Assessing international capital flows after the crisis”

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## Transaction and valuation effects on Germany's international investment position (IIP) – new statistical approaches and IIP trends<sup>1</sup>

Ursula Schipper, Deutsche Bundesbank

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<sup>1</sup> This paper was prepared for the meeting. The views expressed are those of the author and do not necessarily reflect the views of the BIS, the IFC or the central banks and other institutions represented at the meeting.

# Transaction and valuation effects on Germany's international investment position (IIP) – new statistical approaches and IIP trends

Ursula Schipper<sup>1</sup>

## **Abstract**

Germany's cross-border investments and liabilities as reflected in its international investment position (IIP) have increased considerably over the past decade and have thus become more significant in macroeconomic terms. Changes in the IIP are driven by the current account balance, as well as by price movements in the foreign exchange and securities markets. These valuation effects are now being systematically calculated for the first time and can therefore be integrated into the balancing items of the System of National Accounts (SNA) and into the IIP's equation of motion. In addition, the various analytical dimensions of the IIP's dynamics are presented and illustrated by empirical evidence for Germany in a three-tier accounts system.

**Keywords:** International investment position (IIP), external position, balance of payments (BOP), financial account

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## 1. Macroeconomic significance and analytical value of the IIP

The IIP shows at a point in time the value and composition of financial assets and liabilities of a country's residents vis-à-vis its non-residents; individual assets and liabilities are valued at the applicable exchange rates and market prices at the end of the reporting period. This makes the IIP a stock account, for which the balance of payments (BOP) – broken down into the current, capital and financial account – provides the corresponding flow account (for further details, see Deutsche Bundesbank, 2013). The international financial and sovereign debt crisis has demonstrated that the stocks recorded in the IIP serve as an important indicator of dependencies and potential contagion channels, particularly since they have risen sharply worldwide over the past decade. For example, Germany's net IIP as a percentage of gross domestic product (GDP) reached a new record high of 36% at the end of 2014 (see Figure 1, data as reported by the end of March 2015).

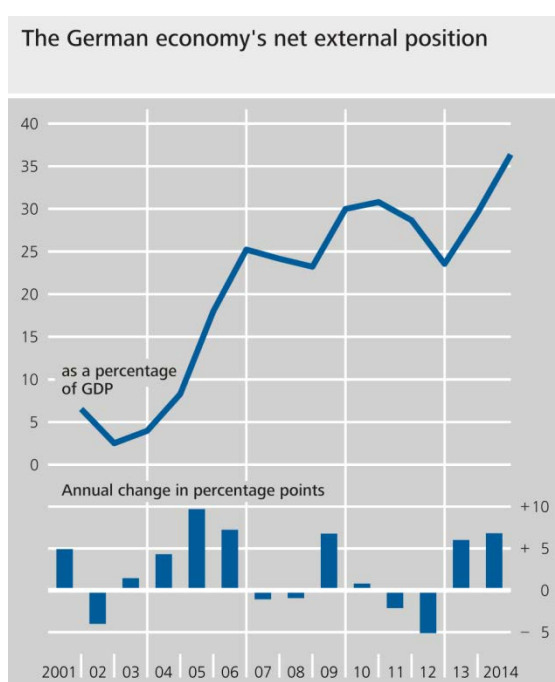


Figure 1

A significant drop in a major current account deficit – that is to say, a reduced flow imbalance – can, nevertheless, coincide with the continued growth of a net debtor position, ie an increased stock imbalance. This “phenomenon” was observed in several crisis countries when analysing external imbalances within the euro area (see IMF, 2014; Lane *et al*, 2014). The recommendations made in 2009 by G20 central bank governors and finance ministers to close the statistical information gaps that were identified during the last financial crisis therefore also attach greater importance to the IIP (see Financial Stability Board and IMF, 2013).

The growing significance of external stocks is also reflected in econometric analyses of the determinants of real exchange rates and within the scope of the intertemporal approach to the BOP (see Harms, 2008). Information on not only the amount but also the composition of financial assets and liabilities included in the IIP are also essential for the IMF's balance sheet approach (see IMF, 2009,

chapter 14), which is used to examine the balance sheets of the total economy and individual sectors within it for asymmetries in capital structure, maturities or currencies. Under the EU's Macroeconomic Imbalance Procedure (MIP), there is an indicative threshold for not only the current account balance but also the net IIP; in the event of an imbalance, it becomes the subject of an in-depth review (see European Commission, 2012).

In line with the IIP's growing importance for economic policy, the IMF's revised Balance of Payments and International Investment Position Manual (BPM6) contains a set of specific definitions in which the presentation of the IIP in one integrated statement is defined as the new global standard. An ambitious new concept is the separate listing of valuation effects. The statistics' users thus profit from important additional information (see IMF, 2009; Deutsche Bundesbank, 2014a, 2014b).

In the new integrated IIP statement, changes in the stocks of individual asset and liability positions recorded in the IIP between reporting periods are broken down into transaction-related changes arising from the financial account, valuation-related changes caused by market price or exchange rate fluctuations and "other changes" resulting, for instance, from write-downs on uncollectible credit claims (see Figure 2).

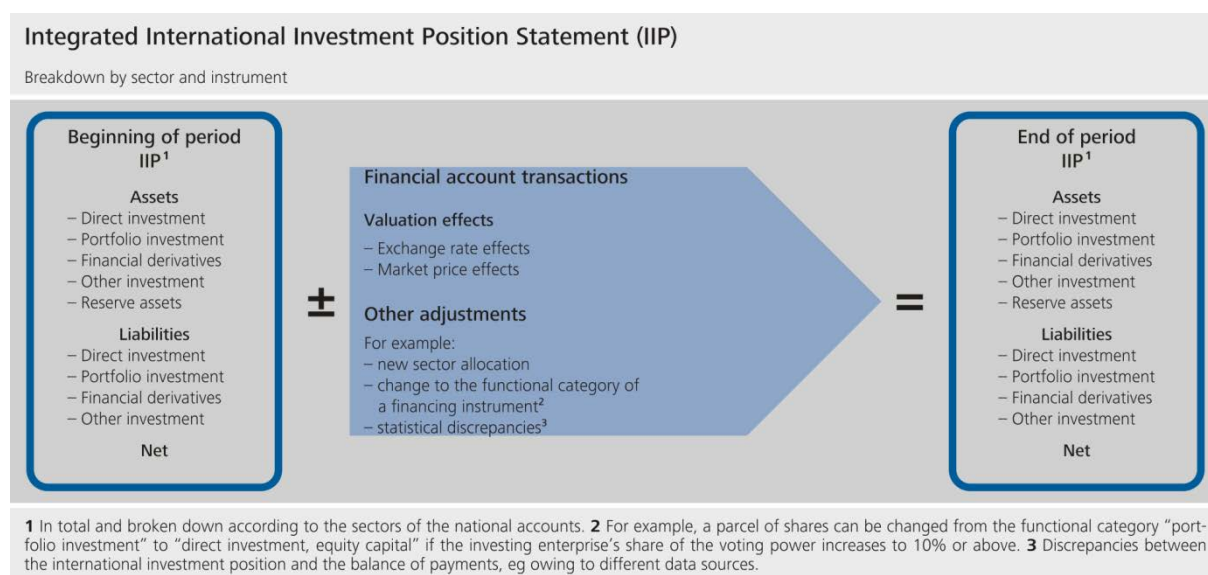


Figure 2, Deutsche Bundesbank (2014a).

This paper systematically outlines the various potential uses of these new statistical data. First, valuation effects are integrated into the balancing items of the SNA. The subsequent introduction of an equation of motion incorporates valuation effects as a major determinant of changes in an economy's IIP, thus opening up new perspectives for the analysis. Finally, an empirical section based on this presents a three-tier accounts system describing the various analytical dimensions of the IIP for Germany.

## 2 Valuation effects in the IIP as a new component in the balancing items of the SNA

Up to now, changes in the net IIP ( $\Delta IIP$ ) have often been determined in a simplified manner by only considering the transaction-related financial account balance (FA); the remaining (valuation) difference being provisionally identified as a statistical residual between flows and stocks. In practice, however, this simplified presentation is problematic in cases where valuation losses and gains do not offset. Henceforth, valuation effects (VE) and other changes (OC) can be explicitly recorded. The former are broken down into exchange rate effects (ER) and other market price effects (MP), while the latter are grouped into a collective item for all other non-transaction-related stock changes (eg write-downs on credit claims).

This translates into the following initial equation for stock changes in the IIP:

$$(1) \quad \Delta IIP = FAB + VE + OC$$

where

$$(2) \quad VE = ER + MP$$

This equation can also be directly integrated into the balance sheet for the total economy of a country or currency area. In simplified terms, the **consolidated net assets** (V) of domestic sectors comprise domestic non-financial assets, ie primarily net capital stock (K), and the net IIP:

$$(3) \quad V = K + IIP$$

Thus, new national wealth ( $\Delta V$ ) can be created by either investing in domestic non-financial assets (fixed assets, in particular) or accumulating net IIP ( $\Delta IIP$ ):

$$(4) \quad \Delta V = \Delta K + \Delta IIP$$

The **increase in wealth** held by residents therefore manifests itself in the modernisation and expansion of domestic industrial production facilities and public infrastructure ( $\Delta K$ ), as well as in the investment of savings abroad ( $\Delta IIP$ ). Major changes in the IIP can be caused by very different factors, however. For example, they can reflect low domestic investment levels or high yield prospects abroad. Additionally, in many cases, changes in the net IIP are also based on the market-related valuation effects stated or on other changes, as can be derived from equations (1) and (4):

$$(5) \quad \Delta V = \Delta K + FA + VE + OC$$

The financial account balance is largely determined by the current account transactions and capital transfers that are effected between residents and non-residents within a given period. The following relationship should be noted **between the financial account balance flows, on the one hand**, and the balances on the current account (CA) and capital account (KA), on the other:

$$(6) \quad FA = CA + KA$$

In BOP statistics, the “errors and omissions” item is also positioned on the right-hand side of equation (6); this provides a summary of transactions that cannot be allocated to the statistics (eg incomplete reports by economic agents, difficulties to attribute the recorded payments to the correct time period). Since it is not needed in the methodological argumentation that follows it may be neglected for the sake of simplicity.

The current account balance, in turn, comprises the external balance of goods and services (Ex-Im) and the respective balances on investment income (II), compensation of employees (CO) and current unrequited transfers (received and made) (CT):

$$(7) \quad CA = (Ex-Im) + II + CO + CT$$

As the combination of equations (1), (6) and (7) shows, the current account indicates which transactions in the real economy (as viewed from the supply side) have contributed to changes in the net IIP. In addition to purely portfolio reallocations, the financial account contains the corresponding financial transactions that arise from the transaction-related changes in individual asset and liability positions recorded in the IIP.

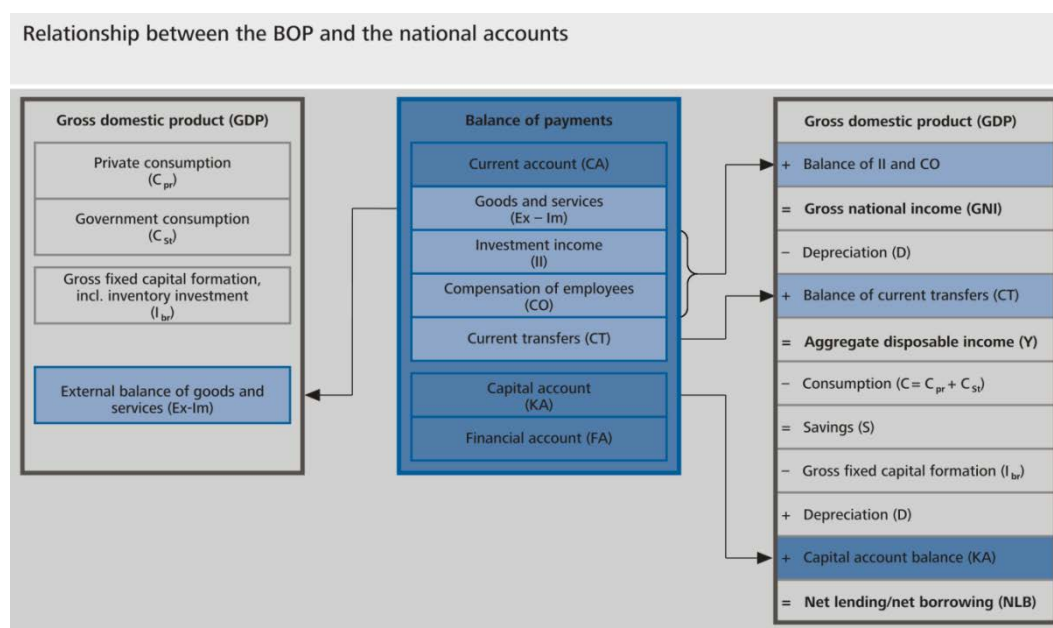


Figure 3

Furthermore, viewing the BOP and the national accounts together, the major accounts can be expressed as accounting identities, (see Figure 3) that allow for further relevant derivations of changes in a country's net IIP. In this way, aggregate disposable income (Y) is derived from the sum of GDP less depreciations (D) and the respective balances on investment income (II), compensation of employees (CO) and current transfers (CT).

$$(8) \quad Y = GDP - D + II + CO + CT$$



The disposable income thus defined (Y) can be used for either consumption (C) or savings (S):

$$(9) \quad Y = C + S$$

If equations (8) and (9) are combined the current account balance can also be seen as the gap between aggregate saving and aggregate net investment ( $I_n$ ), when the GDP is rewritten according to the expenditure approach as the sum of consumption (C), gross investment ( $I_{gr}$ ) and the external balance of goods and services (Ex-Im), and when taking into account the current account balance as noted in equation (7) and depreciations (D) on the domestic capital stock:

$$(10) \quad S = I_n + CA \text{ or } S - I_n = CA$$

If an economy saves more than it invests, this will result in a positive current account balance (the reverse also applies). With respect to net lending/net borrowing (NLB), the capital account balance should also be taken into account:

$$(11) \quad NLB = S - I_n + KA$$

Combining equations (10) and (11) and taking into account equation (6) results in the following:

$$(12) \quad NLB = CA + KA = FA$$

Net lending/net borrowing, which captures the transaction-related changes in an economy's net financial assets, thus corresponds to the balances on the current account and capital account, which correspond, in turn, to the financial account balance.

Taking explicit account of valuation effects and other changes, a country's change in net wealth as presented in equation (4) now takes the following basic form in equation (5):

$$(13) \quad \Delta V = I_n + NLB + VE + OC$$

Changes in residents' wealth are therefore derived from their net investment, net lending/net borrowing and the valuation effects of as well as other changes in the IIP. The share attributable to changes in the net IIP amounts to the following:

$$(14) \quad \Delta IIP = NLB + VE + OC$$

Based on the accounting identities and valuation effects described above, the next section focuses on an equation of motion which explains changes of the IIP by integrating the aforementioned determinants in multiple expansionary steps.

### **3. The equation of motion for the IIP as an analytical frame of reference**

#### **3.1 Deriving the basic equation**

Corresponding to equations (1), (7) and (12), changes in the net IIP can be broken down into the following components: A primary account balance (PA), which is made up of net lending/net borrowing (NLB) less the now expressly recorded investment income balance (II), and valuation effects (VE and OC):

$$(15) \Delta IIP = PA + II + VE + OC, \quad \text{with } PA = NLB - II = (CA - II) + KA$$

This presentation allows for the analytically important differentiation between the contribution attributable to the primary account balance and the contribution calculated as the total return on the net external position. The primary account balance therefore encompasses the current account balance – less investment income – and the capital account balance. The total return on the IIP is a net variable encompassing the investment income received from abroad less the property income sent abroad, as well as the net effect of all valuations. In turn, these are determined by the current return, exchange gains or losses, other market price gains or losses and other possible valuation changes. If this total return is compared with the net external position, this yields the overall rate of return ( $\tilde{i}_n$ ), which consolidates the return-relevant variables (PI, VE and OC) for all asset and liability positions. Equation (15) can therefore be formulated as follows:

$$(16) \Delta IIP_t = PAB_t + \tilde{i}_n IIP_{t-1}$$

The following applies by definition:

$$(17) \tilde{i}_n = (II + VE + OC)_t / IIP_{t-1}$$

Changes in the net external position can also be expressed as percentage of GDP; this reveals analytically significant insights into its dynamics, which play a key role in assessing the sustainability of external positions, for instance. The net IIP to GDP ratio (iip) is derived from net IIP as a percentage of GDP. The applicable basic equation for changes in the net IIP to GDP ratio can be expressed in the following compact format (for a similar approach, see Harms, 2008).

$$(18) \Delta iip_t = pab_t + (\tilde{i}_n - g) / (1+g) iip_{t-1}$$

To simplify the presentation, the GDP growth factor (1+g) will be disregarded, and the following approximation for little growth rate will be used instead:

$$(19) \Delta iip_t \approx pab_t + (\tilde{i}_n - g) iip_{t-1}$$

where

- iip = net IIP as a percentage of GDP
- $\Delta iip_t$  = change (in percentage points) in the net IIP to GDP ratio in period t
- pab<sub>t</sub> = primary account balance as a percentage of GDP in period t
- $\tilde{i}_n$  = overall rate of return (including valuation effects) on the net external position
- g = nominal GDP growth rate ( $\Delta GDP_t / GDP_{t-1}$ )
- iip<sub>t-1</sub> = net IIP at the end of period t-1 as a percentage of GDP of period t-1

The change in the net IIP to GDP ratio ( $\Delta iip_t$ ) thus comprises the sum of the primary account balance (as a percentage of GDP) as defined above and the net external assets ratio at the end of the preceding period weighted with the time-dependent interest-rate growth rate differential ( $\tilde{i}_n - g$ ). The key variable for the further expansionary stages of the equation of motion is therefore the overall rate of return ( $\tilde{i}_n$ ) as introduced in its basic form in equation (17), which now needs to be progressively expanded into its constitutive determinants.

### 3.2 Differences between returns on asset and liability positions in the IIP

The first step in enlarging the model is to present the overall rate of return ( $\tilde{i}_n$ ) as the difference between the rate of return on assets ( $\tilde{i}_a$ ) and the rate of return on liabilities ( $\tilde{i}_l$ ). First, this accounts for the fact that – contrary to the simplified assumptions of the uncovered interest rate parity theory – securities denominated in different currencies are not perfect substitutes and market participants often behave in a manner that is not risk-neutral, which is interesting from an analytical perspective as well as important in empirical terms. Second, in addition to the pure generation of returns, there are other motives for forming external assets and liabilities (eg as part of direct investment), meaning that if valuation effects are factored in, the average effective interest rate ( $\tilde{i}_a$ ) on external assets (A) usually differs from the average effective interest rate ( $\tilde{i}_l$ ) on external liabilities (L). It is therefore generally the case that

$$(20) \quad \tilde{i}_n = (\tilde{i}_a A - \tilde{i}_l L) / IIP$$

In an explicit analysis, the effective average overall return on the net external assets ( $IIP = A - L$ ) can thus be broken down according to the following defining equation:

$$(21) \quad \tilde{i}_n = \tilde{i}_l + (\tilde{i}_a - \tilde{i}_l) \lambda \quad \text{where } \lambda = (A / IIP)$$

By integrating equation (21) into equation (19) and through the elementary transformation, the following central relationship emerges as an important interim result, in which  $a_{t-1}$  symbolises the external assets at the end of the period t-1 in relation to the gross domestic product of the previous period:

$$(22) \quad \Delta iip_t \approx pab_t + (\tilde{i}_p - g) iip_{t-1} + (\tilde{i}_a - \tilde{i}_l) a_{t-1}$$

Equation (22) shows that, in addition to an interest-growth differential which has now been modified compared to (19), the difference between the returns on external assets and external liabilities also play an independent role as a factor driving the IIP ratio. In this context, the respective interest rates ( $\tilde{i}_a$  and  $\tilde{i}_l$ ) represent weighted effective returns in the sense of overall rates of return. The valuation effects can thus be integrated into this approach since in an economic reading they can be interpreted as changes in the volume of assets that affect the rate of return.

### 3.3 Recognition of exchange rate changes

We will now enhance the rates of return on assets and liabilities as defined in section 3.2 ( $\tilde{i}_a$  and  $\tilde{i}_l$ ) by explicitly including exchange rate changes. A foreign-currency position produces two return-relevant valuation effects in the event of an exchange rate change. The first relates to the interest revenue or expenditure converted into the domestic currency (transaction-related part) while the second comprises the corresponding external asset or external liability (pure stock effect). Using the example of an asset position in the form of a foreign currency bond that is assumed to have a fixed nominal interest rate ( $i_f$ ), the following overall return ( $i_a$ ) applies to a domestic monetary unit and a particular period when a relative exchange rate change (direct quotation) equivalent to  $\hat{e}$  is taken into account:

$$(23) \quad i_a = (1 + \hat{e}) i_f + \hat{e}$$

By itself, a depreciation in the domestic currency (ie  $\hat{e} > 0$ ) thus leads to a higher effective interest rate on foreign currency claims on non-resident borrowers.

In a simple two-asset model consisting of a bond denominated in domestic currency with a weight of  $h$  and an interest rate of  $i_{\epsilon}$  as well as a foreign currency bond with the weight of  $1-h$  and an interest rate of  $i_f$ , the overall return for the asset portfolio consists of a pure weighted interest rate component [ $i_{\epsilon} h + i_f (1 - h)$ ] and a weighted exchange rate effect [ $(1+i_f) (1 - h) \hat{e}$ ]. An equivalent formula describes the overall rate of return on the external liabilities ( $\tilde{i}_l$ ):

$$(24) \quad \tilde{i}_a = i_{\epsilon} h + i_f (1 - h) + (1 + i_f) (1 - h) \hat{e}$$

As shown by equation (24), the effect of exchange rate changes on the net external assets is heavily influenced by the currency composition of the asset and liability positions. If, for example, as in Germany, there is a clear surplus of foreign currency on the asset side of the IIP, ie a higher proportion of claims than liabilities are denominated in foreign currencies, a general nominal depreciation of the domestic currency causes a valuation-related rise in the net external assets. In isolation, this leads to an increase in the overall rate of return ( $\tilde{i}_n$ ).

A comprehensive and systemic integration of exchange rate changes into the overall rates of return  $\tilde{i}_a$  and  $\tilde{i}_l$  could be achieved by using an effective exchange rate weighted with the external assets or liabilities. The Bundesbank is currently developing an effective exchange rate weighted with external positions. This involves establishing a system of effective exchange rates, with a breakdown of Germany's foreign assets and liabilities by currency, sector and instrument. As well as providing information on the impact of exchange rate changes on the asset and liability positions in the IIP, this could also be applied to the area of sensitivity calculations.

### 3.4 Recognition of market price changes

As stated earlier, the IIP overall rates of return ( $\tilde{i}_a$ ,  $\tilde{i}_l$ ) also include changes to financial market prices. These market price effects (MP), which are the result of price gains or losses, often play an important role, especially for portfolio investment. For instance, the interest rate ( $i_f$ ) in equation (24) is composed of a

cash-flow return (current return,  $i_{cf}$ ) and a valuation component caused by market price changes (price-related return,  $\Delta P/P$ ):

$$(25) \quad i_f = i_{cf} + \Delta P/P$$

For the sake of simplicity, we now assume a general interest rate shock that causes a one-off parallel shift of a flat yield curve. The resulting relative market price change ( $\Delta P/P$ ) of a financial instrument can be approximated fairly well using the duration approach (for the derivation and discussion of the duration approach, see *Albrecht/Maurer*, 2008, pp 442). In its variant as the modified duration ( $D_m$ ), which can also be calculated for complex portfolios, it measures the relative market price change ( $\Delta P/P$ ) triggered by a given market interest rate change ( $\Delta i_k$ ), eg the price sensitivity of fixed-income securities. The following therefore applies to the price-related return of a security:

$$(26) \quad \Delta P/P \approx -D_m \Delta i_k$$

Assuming a given change in the market interest rate, the price of a financial instrument reacts more strongly the higher the modified duration ( $D_m$ ). In turn, the modified duration is larger the lower the market interest rate and the smaller the coupon, and the longer the residual maturity (and vice versa). This implies that, depending on the relevant cash-flow return ( $i_{cf}$ ) and residual maturity, the market prices of financial instruments react with varying degrees of sensitivity to market interest rate changes and that the duration of a bond or portfolio of financial instruments changes constantly over time, even if market interest rate levels remain constant.

Applying the duration approach and the previous findings on the exchange rate effect, equation (23) can now be written as follows:

$$(27) \quad \tilde{i}_a \approx i_{cf} + [-D_m \Delta i_k + (1 + i_{cf} - D_m \Delta i_k) \hat{\epsilon}]$$

The expression in square brackets captures the two valuation effects based on market price and exchange rate changes. An equivalent formula applies for the overall return on the liabilities side ( $\tilde{i}_l$ ). For presentation reasons and for the sake of simplicity, we have assumed here that all investments are made in foreign currency.

The impact of market interest rate changes on a country's net external assets is contingent on their **net effects**; ie their impact on the overall rate of return ( $\tilde{i}_n$ ). Because the value of the portfolio duration for the assets usually differs from that for the liabilities and because the IIP is not balanced, ie a country typically has a positive or negative net external asset position, the **duration gap** determines the market price-related net wealth effects.

Applying the duration gap approach and focusing solely on the market price effect, a homogeneous shock shifting the overall interest rate level results in the following formula for the market price-related impact (partial effect) on the net interest rate:

$$(28) \quad \tilde{i}_n (MP) \approx -DG \lambda \Delta i_k$$

With the duration gap:

$$(29) \text{ DG} = D_A - (1 - \beta) D_P$$

in which:

$\lambda$	=	External assets over net IIP (A/IIP)
$\beta$	=	Net IIP over external assets (IIP/A)
$D_A$	=	(portfolio-weighted) modified duration of the assets portfolio
$D_P$	=	(portfolio-weighted) modified duration of the liabilities portfolio
DG	=	Duration gap
$\Delta i_k$	=	Change in capital market interest rate level (in percentage points)

The condition for a positive duration gap ( $\text{DG} > 0$ ), ie relatively stronger interest rate elasticity for the external assets, can be taken directly from (29): ( $D_A/D_P > (1 - \beta)$ ).

Which constellation prevails depends on the terms of issue of the financial or investment instruments as well as the particular external portfolio structure during the observation period. Here, the larger the ratio of external assets to the net IIP ( $\lambda$ ), the stronger the response of the net interest rate on the net IIP to an interest rate shock leveraged via the duration gap (and vice versa).

The calculation of duration figures requires a considerable degree of detail and processing of the necessary statistical information; so far, the available data has fallen short of these requirements. Furthermore, simple measures of duration only model first-order effects; if market conditions change significantly, return-related effects may also occur owing to the convexity of the underlying present value model. In addition, non-parallel shifts in the yield curve require more complex methods (for a discussion of these concepts, see *Albrecht/Maurer, 2008*).

#### **4. A three-dimensional accounts system as an approach to present the IIP**

If the previous model outputs are joined together and if the various assets and liabilities are also broken down by instrument and sector according to the IMF's guidelines, the calculations made in the context of the IIP can be performed using a three-dimensional accounts system. This produces an income, an instrument, and a sector account for the IIP, each of which captures specific aspects and which together present a multi-faceted picture of the net external asset position and its changes (see Figure 4, data as reported by the end of September 2014).

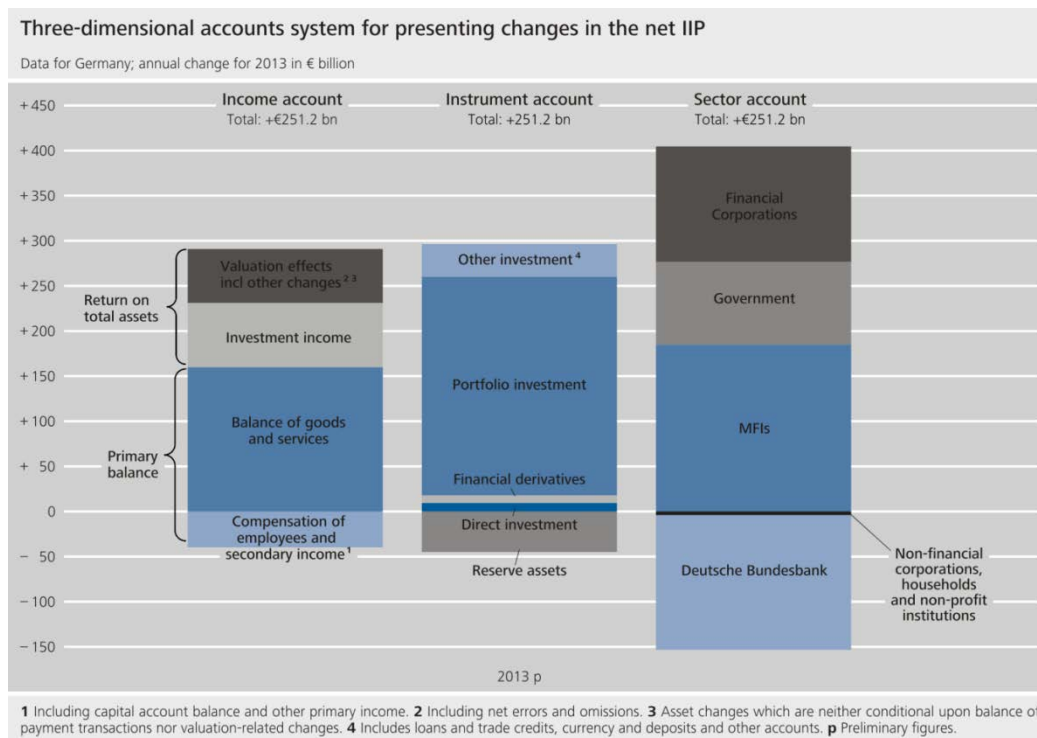


Figure 4

The function of the IIP's income account is to record the analytical breakdown of the change in the IIP, presented in basic equation (15), into the primary account balance and the return on total assets, the latter consisting of the balance of investment income, the valuation effects and other changes. This also allows the various determinants according to equation (17) to be quantified more precisely, especially the complex role of the effective returns on external assets and external liabilities and therefore also the impact of the international yield spreads. In this context, the different valuation effects can also be broken down further and their respective contributions be determined (see Figure 5).

In 2013, for example, year-on-year growth in net external assets was unusually strong at over €250 billion. As shown by the income account for the IIP, this is the result of the persistently high primary balance surplus. The surplus in the balance of goods and services, which benefited not least from favourable terms of trade, contrasted in 2013 with the negative structural balances from the compensation of employees and transfers. The investment income (including valuation effects and other changes) increased the net external asset position by around €130 billion.

This primarily reflects the fact that, owing to Germany's net creditor position, which amounted to approximately 45% of GDP at the end of 2013, its investment income surpluses have been increasing for around a decade (see also *Deutsche Bundesbank*, 2015). Likewise in 2013, the balance of investment income, which amounted to €1 billion when viewed in isolation, contributed to the increase in the IIP; however, this value remained lower than in the previous year despite rising net external assets. Even so, the weighted interest rates in the IIP have probably not yet reacted fully to the international low-interest-rate environment,

and in the case of direct investment, the profitability of the non-financial corporate sector had a stabilising effect on the aggregate return ratios.

As a general rule, in the longer term, the IIP accounts also show the typical positive feedback effect between the financial stocks and the resulting revenue. The valuation effects in the net IIP, which consisted of market price effects to the value of +€40 billion and countervailing exchange rate effects amounting to -€47 billion, balanced out at a comparatively low figure of -€7 billion in 2013.

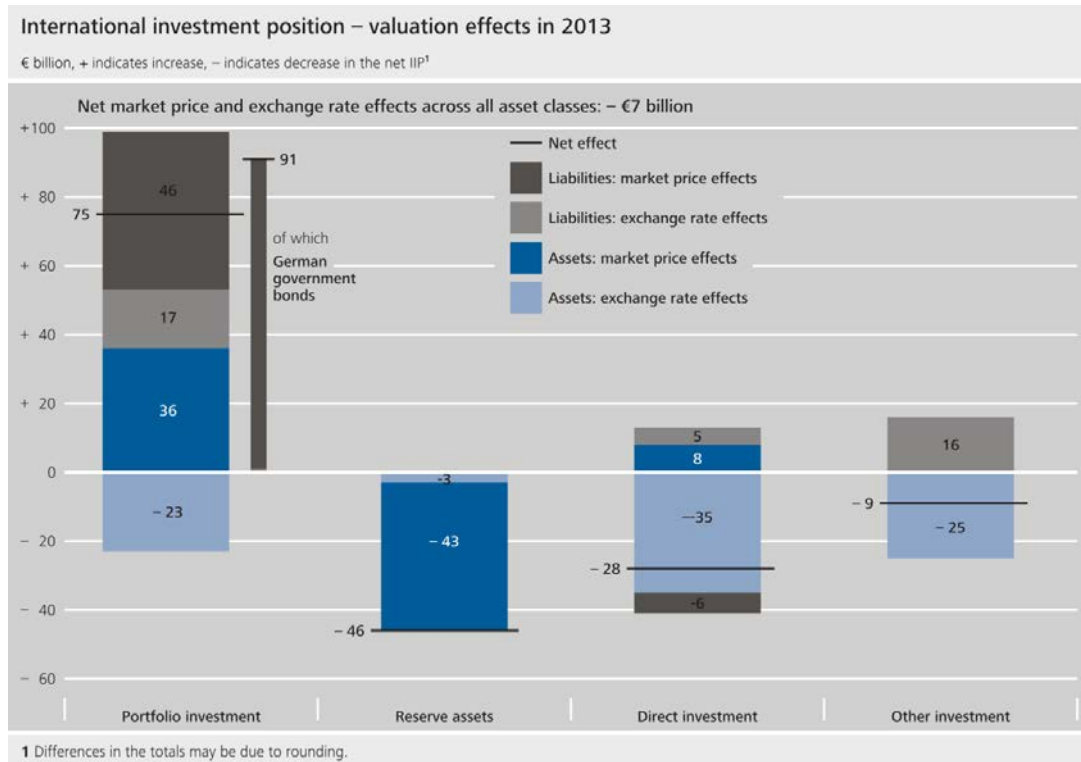


Figure 5, Deutsche Bundesbank, 2014b.

The IIP's instrument account focuses on the investment and financing instruments, broken down into various functional categories (direct investment, portfolio investment, other investment and reserve assets). It reveals that significant market price movements have taken place, especially in the securities markets. A marked rise in prices took place in the equity markets, in particular, with the calming of the European financial markets, and owing to the search for high-yielding forms of investment. In the new IIP accounting system, this had a positive impact on the price-related return of equity investment as well as portfolio investment. In addition, over the course of 2013, price decreases which diminished returns were recorded on the liabilities side, most notably for long-dated domestic government bonds. In terms of the overall rate of return, this had a greater impact than the decline in interest rates on new investments.

The IIP's sector account, which takes the sectoral picture of domestic and non-resident creditors and debtors and breaks it down into the domestic key sectors of an economy, also showed significant position changes in 2013. Sectoral portfolio



shifts can also be used to assess changes in aggregate return sizes (see Deutsche Bundesbank, 2015).

It was typical of developments in 2013 that, as market participants' confidence returned, there was a clear decline in the Deutsche Bundesbank's external assets from the euro area's payment system (Target balances), meaning that the Bundesbank was able to reduce its net creditor position, which had increased rapidly in the wake of the financial and sovereign debt crisis, for the first time. Including the write-downs of the gold reserves owing to the sharp fall in the price of gold, the Bundesbank's share of the net external assets went down from 75% to 50%. Overall, lending to non-residents has tended to shift from the public back to the private sector. Monetary financial institutions, whose net external position decreased further in 2012, more than doubled their net creditor position in 2013.

An analysis over a longer period, where the short-term volatility determined by the financial markets in a given year has a significantly smaller impact on yield size, shows a more balanced ratio between the rates of return on the assets and liabilities side of the IIP. Over the crisis period from 2007 to 2013, the overall returns on the external assets can be estimated at an annual average of 3.2%, compared with 3.3% on the liability side (see Frey et al, 2014). During this period, then, at a nominal GDP growth rate of 2% pa, in addition to the positive primary balance, the weighted interest rate-growth differential played a large part in shaping the dynamics of the net external assets ratio.

## **5. Conclusion**

Given persistent global imbalances and high structural heterogeneities in the euro area, the statistical accounts system for the international investment position (IIP) is attracting increasing attention from both analysts and policymakers. A broad-based and deeply disaggregated internationally harmonised data set is an essential prerequisite for the ongoing monitoring and surveillance of key external variables. The systematic recording of valuation effects, which has now been made possible, therefore constitutes an important step forward. In a disaggregated framework, valuation effects can be viewed as yield-determining factors and analytically integrated into the IIP equation of motion. In line with this, a three-dimensional accounts system is now available that captures the external generation, use and distribution of the IIP's changes and also dovetails with the macroeconomic statistics comprising the national accounts and the financial accounts.

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Rio de Janeiro, Brazil, 24 July 2015

## South Africa’s experience with capital flows since the financial crisis – from measurement to analysis<sup>1</sup>

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<sup>1</sup> This paper was prepared for the meeting. The views expressed are those of the author and do not necessarily reflect the views of the BIS, the IFC or the central banks and other institutions represented at the meeting.

# **South Africa's experience with capital flows since the financial crisis**

## **From measurement to analysis**

Paper presented by Barend de Beer (South African Reserve Bank)

at the IFC satellite meeting during the 60<sup>th</sup> ISI conference

24 July 2015

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Brazil

## 1. Introduction

The nature of international capital flows revolves around optimal yield seeking behaviour – be it through longer term foreign direct investment<sup>1</sup> (FDI) or shorter term, more liquid, portfolio and other investment. Much of these flows are destined for emerging market economies (EME's) – in general there has been a significant surge in capital flows to EME's over the past decade. This provided these economies with access to foreign capital and the possibility to positively impact their real and financial development and hence economic growth. Yet, at the same time it has also introduced major challenges for policymakers in these economies, especially in times of heightened global uncertainty. The general consensus amongst EME's is that capital flows should be carefully monitored to understand their impact on the overheating of economies, loss of competitiveness and increasing vulnerability to swings in capital flows. In general, FDI inflows are preferable to other forms of capital given that these mostly entail investments in real economic activities and hence are longer-lasting and more productive given the increased potential for positive economic spill-over effects. There is also evidence to suggest it is less volatile than other capital flows. (Albuquerque, 2013)

This paper has two aims – firstly to briefly analyse South Africa's experience with cross-border capital flows since the recent financial crisis (section 2) and secondly to highlight certain positive methodological developments and future focus areas in the compilation of the South African cross-border capital flow data (section 3). The last section draws some conclusions.

## 2. South African capital flow developments within the international context

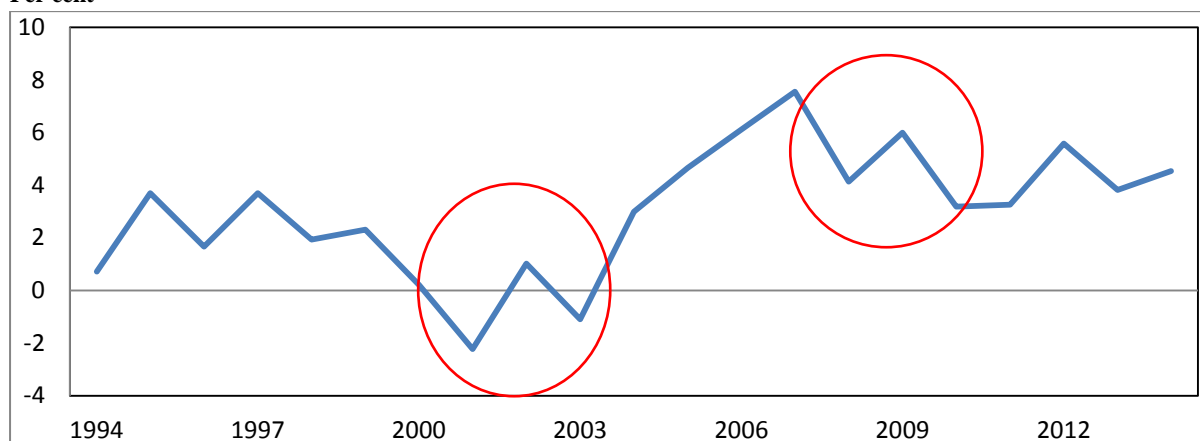
After a prolonged period of sanctions during the 1980's, South Africa re-joined the global financialisation drive after its first democratic elections in April 1994. Subsequent capital account liberalisations, and the fact that the country's stock of foreign liabilities was quite low as a result of the sanctions, have contributed to an increase in net capital inflows to South Africa, especially from 2003 onwards. Figure 1 depicts the balance on the financial account as a ratio of GDP – indicating that there were only two periods (2001 and 2003) where this ratio moved into negative territory. As South Africa expanded its international trade and investment relations these inflows proved instrumental in supporting the current account deficit and rebuilding the country's international liquidity position. The current account deficit reflects the shortfall in domestic savings to meet the investment needs of the economy, and hence the need for international capital to augment the shortfall. Between 2003 and 2014 South Africa's average domestic savings rate as a percentage of GDP amounted to 16,1 per cent which was significantly below the global average of 21, 2 per cent.

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<sup>1</sup> Generally FDI is considered to be of a longer-term nature; however certain activities between multinational parent and subsidiary institutional units can be of short-term nature, e.g. trade credits.

**Figure 1: Balance on financial account as a percentage of GDP**

Per cent

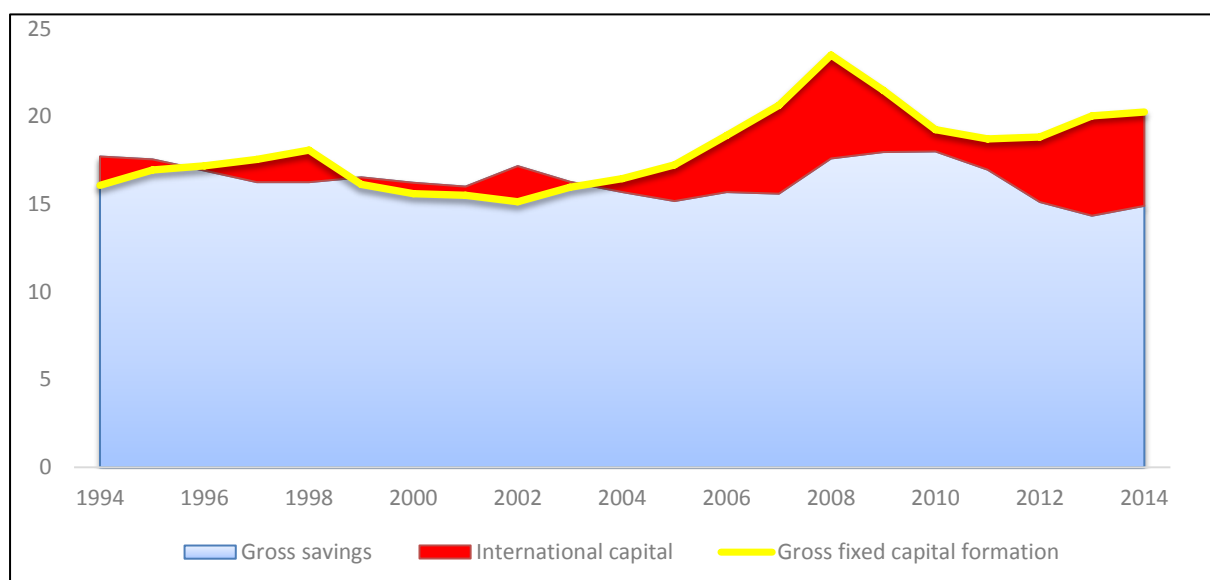


Source: SARB

Over the same period South Africa's public sector debt as a ratio of GDP increased substantially from 31,6 per cent to 43,9 per cent – a significant increase, but still much lower than many other developed and developing economies. These developments have thus in effect meant that South Africa's domestic gross fixed capital formation – which is a key requirement for future growth sustainment - has become increasingly reliant on international capital inflows.

**Figure 2: Financing South Africa's gross fixed capital formation (ratio to GDP)**

Per cent



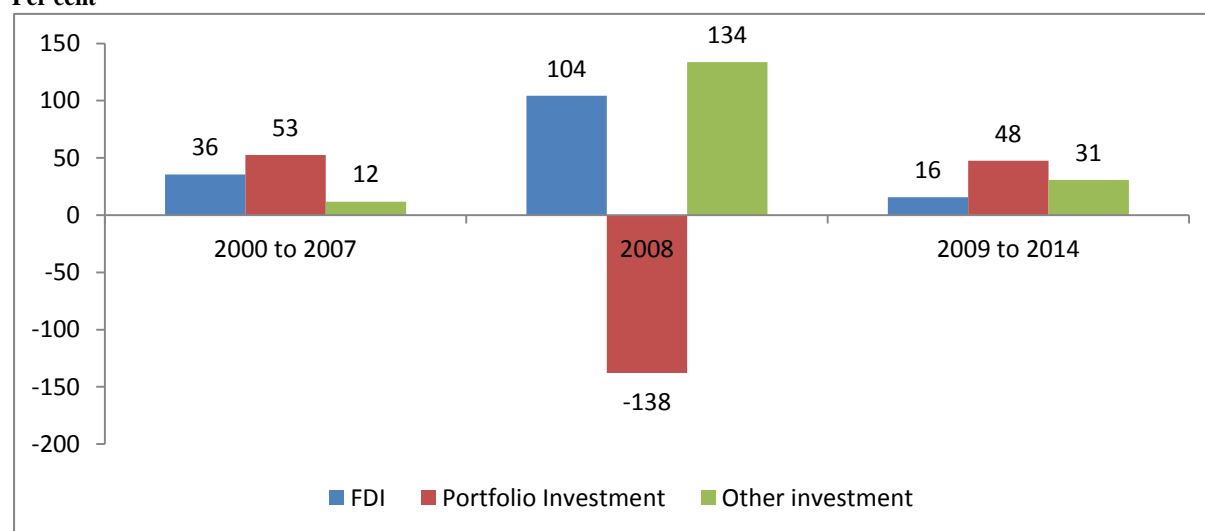
Source: SARB

In principle, access to foreign capital contributes to a country's ability to increase future income streams by undertaking investments whose prospective returns exceed the cost of finance and therefore better smooth consumption over time. Figure 2 illustrates that since 2003 South Africa has consistently, and to an increasing degree, become reliant upon international capital flows to sustain the internal capital investment drive. This in itself, is not

necessarily concerning because the optimal yield seeking behaviour within a global free market economic system should direct capital to those areas where investment opportunities will yield the highest return. It should result in optimal capital diffusion which should, in theory, address global liquidity requirements by providing essential financing to EME's. However, this is not necessarily always the case over the short run due to imperfections such as asymmetrical information structures and international capital markets that are very sensitive to sentiment - often driven by perceived national and international risk factors. Therefore the construct of the international capital liability stock position of an EME becomes critically important. These positions are the result of previous period flows and have a significant impact on future capital flows.

**Figure 3: South African net financial flows by functional type<sup>2</sup>**

Per cent



Source: SARB

Figure 3 provides an overview of the types of capital that have flowed through South Africa's financial account over the past 14 years. In the period 2000 to 2007 portfolio investment contributed 53 per cent of the total net inflows for the period with FDI second at 36 per cent and other investment relatively subdued at 12 per cent. This picture changes quite dramatically in 2008 – as the financial crisis erupted - when investor sentiment turned negative and portfolio investment recorded an outflow of 104 per cent of the balance on the financial account - this was however fully countered by other investment and FDI inflows. Other investment inflows increased, probably also in part due to South African investors repatriating some of their international funds during the crisis. Regarding FDI, South Africa recorded its highest annual attraction of FDI in 2008, ironically just as the world was entering a period of significant turmoil. This illustrates the relative fluidity of portfolio and to a lesser degree other investment in contrast to that of FDI. After the sharp reversal in portfolio flows in 2008, South Africa once again became primarily reliant on portfolio flows between 2009 and 2014 – representing approximately 50 per cent of the inflows recorded on the financial account. Equally significant is the increase in the share of other investment from 12 per cent

<sup>2</sup> The period 2009 to 2014 does not add to 100 per cent because derivative flows have not been included here. These flows were not measured in the previous periods.

in the pre-crisis period to above 30 per cent in the post-crisis period. Of specific interest is the relative decline of the FDI contribution (from 36 per cent to 16 per cent) over the same period – as stated earlier this is probably the most stable contributory category which EME's generally seek to attract.

The above-mentioned developments in South African cross-border capital flows have taken place against the backdrop of macroeconomic factors that affect all EME's, such as investor sentiment, inflation expectations, interest rate differentials, commodity price cycles and exchange rate movements. Additionally, country-specific factors such as political stability, structural constraints (such as electricity supply, transport infrastructure and other broad infrastructural development) and growth prospects are key determinants of South Africa's ability to attract future cross-border capital flows as well as its ability to weather surges and reversals in these flows. Due to the fact that South Africa is a major commodity-producing country its economy is generally more exposed to the commodity price cycle than other EME's would necessarily be – with the resultant pass-through effect on capital attraction, growth and exports. (Gruss, 2014) Since the crisis, South Africa's growth has been disappointing, averaging 1,8 per cent between 2009 and 2014, broadly in line with dismal global growth which has been a key driver of the drop in commodity prices and the weakness of global trade volumes. The struggling global growth performance persists even while global monetary policy remains very accommodative with low interest rates and moderate inflation pressures. While there might be uncertainty regarding the timing of global interest rate tightening due to these factors, the USA is still expected to increase interest rates before the end of 2015 – which will decrease the real interest rate differential between South Africa and international markets, possibly adding pressure on South Africa's ability to sustain its attraction of cross-border capital flows and thereby increasing the pressure on the domestic currency.

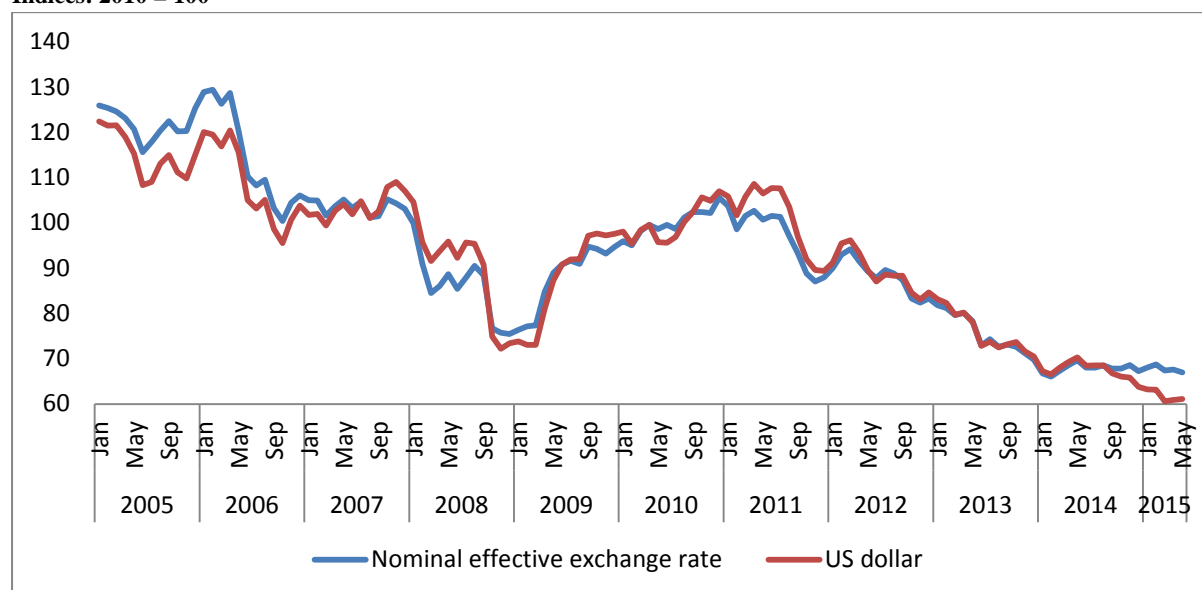
Developments in the rand foreign exchange market since the financial crisis have also increased the focus on cross-border capital flows and the implications it has for a country's ability to deal with surges and reversals in cross-border capital flows. South Africa's exchange rate regime is one of the most flexible among EME's and foreign exchange intervention is rare. Reserves cover almost 5 months of imports and close to 80 per cent of gross external financing needs. (IMF, 2014). Since the sharp depreciation that accompanied the financial crisis the rand initially strengthened by 45 per cent against the US dollar between October 2008 and April 2011 (34 per cent against a trade-weighted basket of currencies). Since April 2011 the rand has however experienced sharp periods of depreciation with only momentary appreciation, on average depreciating by 44 per cent between April 2011 and May 2015 (35 per cent against a trade-weighted basket of currencies). See figure 4. The developments in the rand reflected both domestic as well as international developments. By the second half of 2011, amidst deteriorating international economic prospects, capital flows receded significantly and thereby eliminating much of the cumulated currency gains since the onset of the financial crisis. This left numerous EMEs with sharply depreciating currencies and the implications thereof. (Gosh et al, 2012) Additionally, domestic wage negotiations and labour disputes towards the end of 2011 and during 2012 contributed to the



rand depreciation as investor sentiment echoed concerns regarding this. However, since 2013, the developments in the rand exchange rate largely reflected global rather than specifically South African influences. According to a study by Investec (2015) the US dollar has strengthened in anticipation of possible monetary tightening in 2015, with higher US interest rates believed to be an indication of both stronger economic growth and stock market performance. This has spurred US dollar strength against the rand, with the rand depreciating by 4 per cent against the US dollar since the beginning of 2015, and 1,5 per cent on a trade weighted basis. Another contributory factor was the declining commodity prices. The further statistically significant influence has been the spread between long term US interest rates and their higher RSA equivalents – this reflects SA risk, or expected rand weakness. The interest rate spread also consistently adds rand / US dollar weakness (or strength when the interest spread narrows). (ZAeconomist, 2015). During periods of volatility South Africa continually resisted increasing capital control measures and has instead gradually built its gross international reserve asset position and international liquidity position, which stood at US\$ 46,4 billion and US\$41,5 billion at end of May 2015, respectively. Thus, the flexible exchange rate has helped

**Figure 4: Movements in the rand exchange rate**

Indices: 2010 = 100



Source: SARB

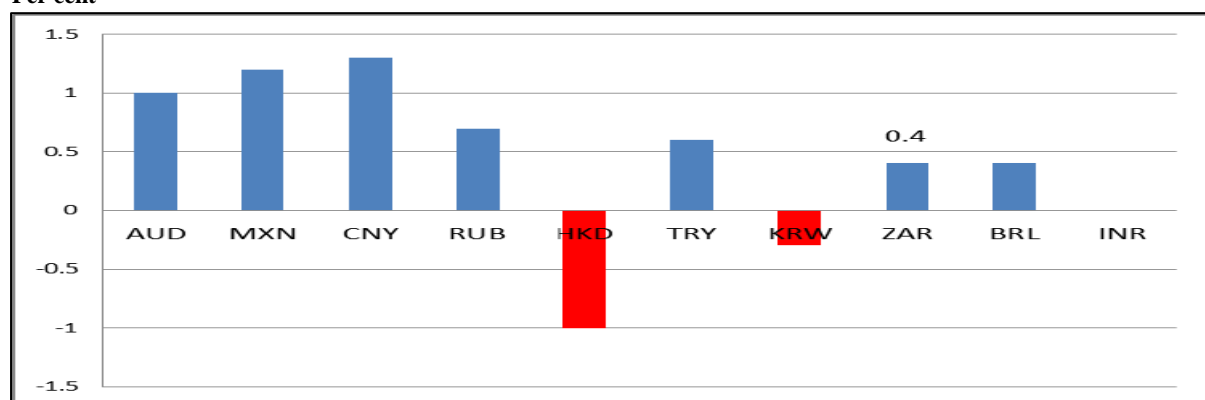
South Africa manage volatile capital flows, and furthermore the gradual increase of foreign exchange and gold reserves is also aimed at buffering against surges in market volatility. This is in line with developments in various EMEs - many of which have recently increased reserves, taking advantage of renewed capital inflows (IMF, 2014). In addition to this, the BRICS' Contingency Reserve Arrangement would also enable South Africa to draw US\$ 10 billion to further bolster the buffer.

Taking the above-mentioned into consideration, an analysis of the structure of the rand FX market based on the 2013 BIS Triennial Survey on Foreign Exchange and Derivative Market

Activity<sup>3</sup> (BIS Triennial Survey) proves very interesting. Results from the 2013 BIS Triennial Survey showed that the average daily turnover in the South African FX market increased by US\$7 billion between 2010 and 2013, reaching US\$21 billion in April 2013 (where after it continued to increase but at a much slower pace, reaching US\$21,3 billion in April 2015). A comparison of the growth in FX turnover between the previous three surveys (2004, 2007 and 2010) shows that the 50 per cent increase between 2010 and 2013 was notably higher than the previous record increase of 40 per cent recorded between 2004 and 2007. Of particular interest is the fact that while the daily average turnover in the South African FX market reached US\$21 billion in April 2013, the global daily average turnover in the USD/ZAR currency pairing reached US\$51 billion, implying an increased rand market outside the borders of South Africa.

The increasing role of EME's in the global economy stands in contrast to the limited role of their currencies in international transactions – both trade related and financial. However, certain EME currencies have the potential to grow and in some cases have already grown their share of the global FX turnover. In this regard factors that are important for currency internationalisation include economic size, trade and financial networks, macroeconomic stability and policy support. The South African rand (ZAR) is one of the currencies that has the potential to grow its share of global turnover in future, having increased its share by 0,4 per cent in April 2013, and thereby surpassing the 1 per cent mark. (Figure 5)

**Figure 5: Change between 2010 and 2013 in global FX market share of selected currencies<sup>4</sup>**  
Per cent



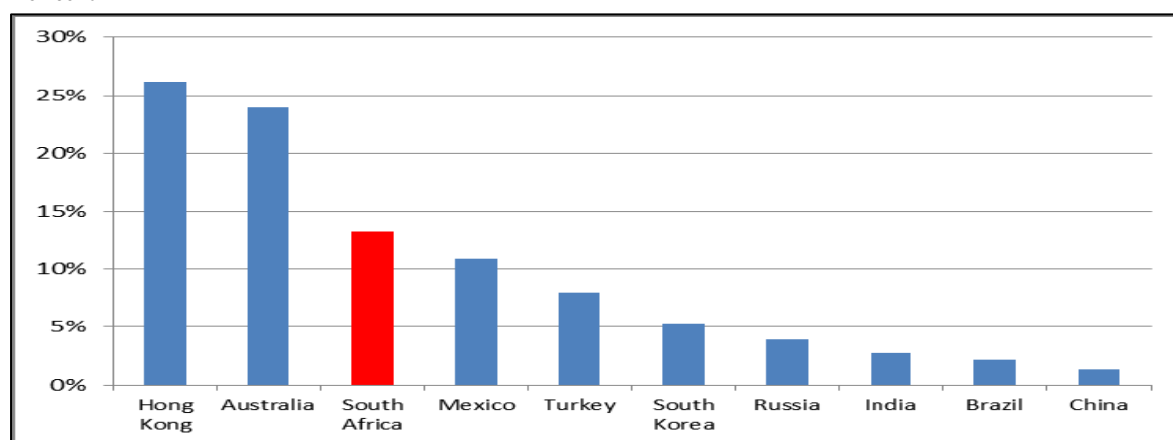
Source: BIS (2013 triennial survey – month of April)

The growing internationalisation of the rand is demonstrated when the share of the USD/ZAR currency pair as ratio of GDP is compared to that of selected countries. (Figure 6) The global turnover in USD/ZAR represented 13,3 per cent of GDP. The only countries that had a higher ratio were Hong Kong (26,2 per cent) and Australia (23,9 per cent).

<sup>3</sup> This international survey is conducted by the BIS every three years, commencing in 1995, with the next survey scheduled to be conducted in April 2016.

<sup>4</sup> AUD = Australia, MXN = Mexico, CNY = China, RUB = Russia, HKD = Hong Kong, TRY = Turkey, KRW = South Korea, ZAR = South Africa, BRL = Brazil, INR = India

**Figure 6: April 2013 turnover of selected currencies against the US dollar as ratio of GDP**  
Per cent



Source: BIS (2013 triennial survey – month of April)

The rand increased its ranking among the top 20 currencies, moving from 20<sup>th</sup> position in 2010 to 18<sup>th</sup> position in 2013. The data presented also provide more insight into the size of the rand market being traded outside South Africa. Possible reasons for this could include increased currency invoicing in local currency by South African exporters and also increased use in financial market transactions – e.g. holdings of rand by entities such as hedge funds for speculative reasons. The increased turnover in the JPY/ZAR currency pairing (US\$4 billion per day in 2013) could also point to increased carry trade activity. Overall, the South African rand seems to be increasing in popularity as an EME currency of choice. Whilst this bodes well for the liquidity and depth of the rand market it also poses significant policy questions in periods of heightened international uncertainty and risk coupled with surges and reversals in capital flows.

The final part of section two takes into account the development of South Africa's capital flows vis-à-vis its peers. In a global capital market where EME's compete for investor funds it is necessary to analyse a specific country's development in comparison to that of its peers. How has South Africa fared vis-à-vis its international peer countries? A useful manner in which to conduct such a panel analysis is to link it to international credit ratings. In a longitudinal panel study<sup>5</sup> done in 2014 on South Africa's attraction of FDI relative to a panel of peer countries<sup>6</sup>, it emerged that South Africa has fared relatively poorly in attracting FDI despite having a high potential to attract FDI. South Africa persistently recorded lower inflows of FDI as a percentage of GDP compared to the comparator countries. There were only two years within the review period that South Africa barely penetrated the inter-quartile range of the comparator group. As mentioned earlier, in 2008, against the backdrop of global FDI inflows recording their second largest annual level of US\$1,7 trillion, South Africa experienced record FDI inflows of approximately US\$12 billion. However, despite the record inflows, South Africa's inward FDI flows as a ratio of GDP of 3,3 per cent was still considerably lower than the average of 5,9 per cent for the comparator group. In 2009, a

<sup>5</sup> de Beer and Rangasamy

<sup>6</sup> Panel based on Fitch credit ratings for period 2002, 2005 and 2010

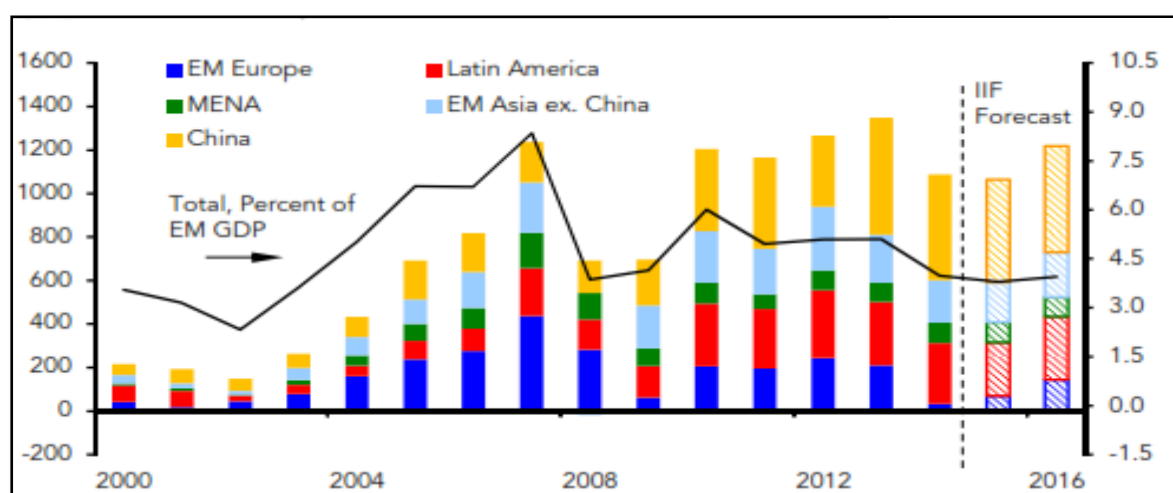
similar situation prevailed with South Africa's FDI ratio of 1,9 per cent edging closer to the inter-quartile range but still significantly lower than the comparator group average of 3,1 per cent.

In a study on the determinants of net private capital inflows to EME's Ahmed and Zlate (2013) find that growth and interest rate differentials between EMEs and advanced economies and global risk appetite are statistically and economically important determinants of net private capital inflows. They also found that there have been significant changes in the behavior of net inflows from the period before the recent global financial crisis to the post-crisis period, especially concerning portfolio inflows – this is partly explained by the greater sensitivity of such flows to interest rate differentials and risk aversion. Figure 7 shows that after a sharp reversal during the global financial crisis of 2008-09, private capital flows to EMEs surged in the aftermath of the crisis to an all-time high of US\$1,35 trillion in 2013, thereafter declining to just under US\$1,1 trillion in 2014. As a ratio to emerging market GDP the sizeable post-crisis period flows could however not emulate the level seen in 2007, close to 8 per cent of EME GDP, oscillating between three and six per cent between 2009 and 2014.

**Figure 7: Private capital flows to EME's**

US\$ billions

Per cent of EME GDP

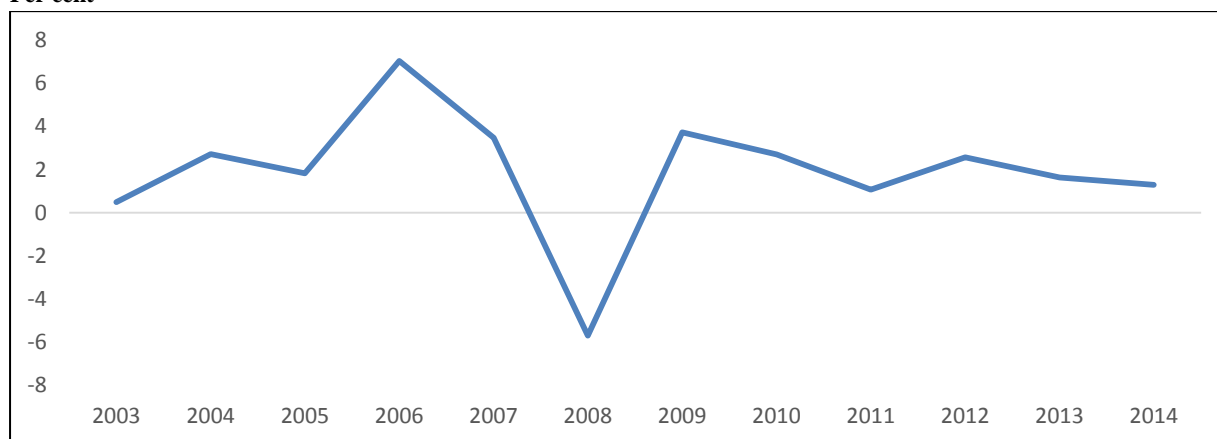


Source: IIF

The experience in South Africa was similar to that of the other EME's as is illustrated in figure 8. Net portfolio flows to South Africa as a ratio of GDP peaked at 8 per cent in 2006, reversed to negative 6 per cent in 2008, at the height of the financial crisis, and thereafter has not pierced levels above 4 per cent yet. This does not however diminish the fact that South Africa attracted significant levels of net portfolio inflows in the post-crisis period – an issue that, as in other EME's, has become a key policy debate due to the vulnerability to reversals accompanying it. Such a development would impact EME's through two channels – firstly through the repricing of their financial asset and liabilities and secondly through currency adjustment.

**Figure 8: Net portfolio flows as per cent of GDP**

Per cent



Source: SARB

The International Institute of Finance (IFF, 2015) identifies these vulnerabilities as a key issue for larger EME's that have become heavily reliant on portfolio capital inflows, for example if monetary tightening in large developed economies should commence. However, they believe that the countries which have in the recent past been identified as most vulnerable—Brazil, Indonesia, South Africa, and Turkey - should be able to handle such a tightening better than the 2013 reversal, in part due to some strengthening in policy frameworks and because these countries' financing needs have been reduced by lower oil prices. It is however reiterated that these economies remain exposed to an upwelling in risk aversion – as do other EME's – due to market sentiment relating to policy shifts in developed economies coupled with domestic policy credibility.

### 3. Closing data gaps and improving methodology

A key concept closely related to the analysis of international capital flows – such as the one in section 2 - is the compilation of the data used for such analysis. The processes, methodologies and structure used to compile international capital flow data, and economic statistics in general, form the bedrock upon which analysis and ultimately policy decisions are based. The country specific application of international guidelines has significant impacts on data consistency, availability and reliability. Thus, the compilation of data and analysis thereof are two different but closely related components of the overall statistics information model. These two components work towards one goal – namely to provide decision makers with the best framework within which to make policy decisions. Any country that subscribes to this model bases its reputation on the quality of the economic statistics produced by its official statistical agencies – typically the national statistical agency and national central bank. The responsibility it places on these organisations revolve around a dedication to actively promote ongoing improvements in their statistical production process in order to accurately measure and portray, economic developments as they evolve over time. Therefore it is not sufficient for a country to have a high quality statistical compilation and dissemination system, but it is also essential to share with users, the knowledge about the production and quality control processes that ensure the compilation of good statistics. (Eurostat, 2011)

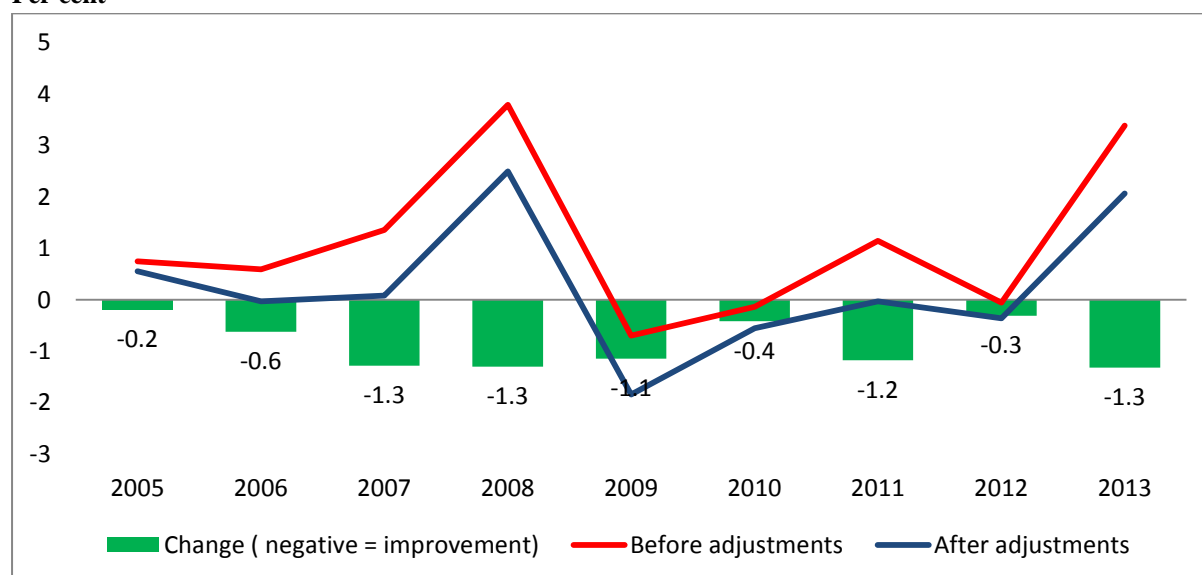
In South Africa's case the South African Reserve Bank (the Bank) is responsible for the compilation of various sets of official statistics, one of which is the balance of payments (BoP), containing data on cross-border capital flows. There has been continual improvement and development with regards to the measurement of South Africa's capital flows, which have come about due to:

1. Adherence to international developments in guidelines and reporting requirements;
2. Internal statistical quality control improvements (quality and cross-checking); and
3. Continually improving analysis of measured data and providing feedback to the compilation process.

One of the key objectives in this regard is to reduce, in a systematic and sound manner, the unrecorded transactions in South Africa's BoP. Figure 9 illustrates South Africa's unrecorded transactions as a ratio of GDP before and after certain methodological and measurement refinements were made. This shows that for all of the years since 2005

**Figure 9: Unrecorded transactions as a ratio of GDP**

Per cent



Source: SARB

the adjustments were positive, with the unrecorded transactions decreasing as a ratio of GDP. The improvement in the unrecorded transactions was the product of improvements in methodology and measurement techniques in various sub-components of the capital flows. The key areas of development will now be highlighted briefly.

### 3.1 Foreign direct investment

One of the areas that have received specific attention since the financial crisis is the methodology underlying the measurement of FDI. Due to the nature of FDI and the

infrequency<sup>7</sup> with which this type of transactions take place for a specific institutional unit it is difficult to measure. Unlike the other three categories which either have formal structures (e.g. exchanges) through which the data is measured or include instruments which generally appear in a relatively repetitive pattern like currency and deposits, trade credits, etc., the nature of Merger and Acquisition (M&A) type FDI transactions is such they are infrequent with regard to a specific institutional unit and could be quite complex. Often the detail and complexity of a transaction have to be understood in order to appropriately include the transaction into the BoP framework. Before the crisis the measurement component as well as the analysis of FDI data in South Africa left ample scope for refinement and extension – which presented a gap to be filled. In South Africa’s case the FDI is presented in the traditional functional breakdown which only provides a high level overview between acquisition of assets and incurrence of liabilities. During 2013 the Banks’ Balance of Payments Division developed an International Transaction Database (ITD) on FDI. This database measures quarterly FDI transactions via a survey form (Foreign Direct Investment Survey) with the target population being South African and international multinational groups with an FDI presence in South Africa. The type of data obtained from this survey allows for a much richer analysis of the FDI data, with breakdown categories such as:

- Sector of FDI originating multinational (in case of outward FDI);
- Geographical destination (origin) of outward FDI (inward FDI); and
- Type of FDI
  - Equity
  - Debt

This breakdown has for example shown that a significant portion of South Africa’s inward and outward FDI is channeled through international financial centers which act as intermediaries, e.g. Mauritius. (SARB, 2014) In addition it has shown that whilst a significant component of South Africa’s incurrence of liabilities is in the form of debt, the incurrence of assets rely much heavier on equities. This additional level of detail has for example allowed for the linked analysis of FDI flows in the financial account with dividend receipts and repayments on inward and outward FDI in the current account by geographical center. This analysis is of specific value to EME’s where the asymmetrical flows from FDI returns (dividends paid versus dividends received) might pose a financial drain on the economy.

### **3.2 Portfolio investment**

With continuous advancements, increased sophistication and growth of global financial markets, accompanied with market players’ continuous system adjustments to accommodate growth, the Bank continually reassesses the methodology underlying the measurement of inward and outward portfolio investment flow statistics. This reassessment is in line with the Bank’s aim at integrated statistical quality control and improvement. In 2014 the Bank initiated a project to improve and reconcile data pertaining to non-resident portfolio investment by more

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<sup>7</sup> Specifically related to M&A type FDI activity - because for example a gradual injection of capital by a parent company into a subsidiary or extension of short-term trade financing can occur more frequently and is easier to measure.

closely aligning portfolio flow statistics with that of non-resident stock holding data – a process aimed at narrower convergence with the balance sheet approach (BSA) which has gained prominence after the financial crisis. All relevant parties to the portfolio investment data were involved – these included transfer secretaries, banks, the national treasury, the Johannesburg Stock Exchange and the Central Securities Depository. These role players all contribute, directly or indirectly, to the facilitation of the transacting and accompanying booking processes and to the compilation and dissemination of records related to non-resident bond and equity investments. This significant methodological refinement exercise soon yielded positive results. The revisions effected to the non-resident bond investments data were released in the Bank’s June 2014 Quarterly Bulletin and indicated that South Africa managed to attract more bond inflows on a net basis than previously measured and reported – the data was subsequently revised for years 2011 to present.

This exercise was extended to the equities portion of portfolio investments as well, and although still in the process of finalising and computing the net result, the preliminary indication is that more portfolio equity inflows were attracted than previously realised - especially for the year 2014. The reassessment of bond flow data resulted in a reduction in unrecorded transactions and it is foreseen that a similar result will be evident once the equities revision is finalised – a process which should be finalised with the results published towards the end of 2015.

### **3.3 Derivatives**

In anticipation of the revised requirements of BPM6 the Bank mandated a task team to assess and measure the over the counter (OTC) derivatives market in South Africa. Due to the fact that the majority of the OTC derivatives market in South Africa is intermediated by the banking sector the task team commenced with the measurement of derivatives in the deposit taking corporations sector. This entailed the inclusion of additional reporting requirements in the existing balance sheet survey form submitted on a monthly frequency by banking sector institutions in South Africa. The banks were required to provide data from 2010 onward based on the BSA. This requires the banks to submit derivative data broken down by broad counterparty sector for the following categories:

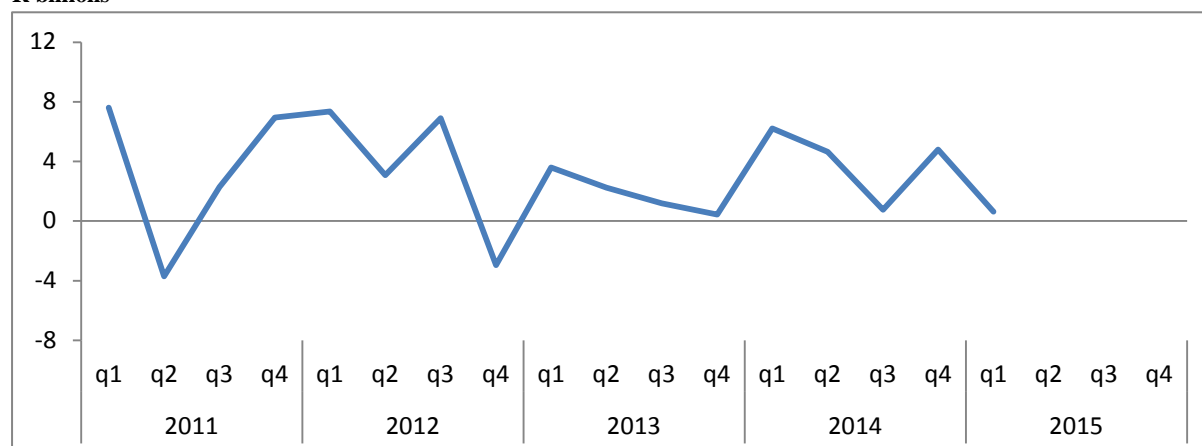
- Opening stocks;
- Transactions;
- Revaluations;
- Other volume changes ; and
- Closing stock

Figure 10 illustrates the net derivative flows from the first quarter of 2011 to the first quarter of 2015. The inclusion of financial derivatives as a functional category in the financial account of the BoP



**Figure 10: Net derivative flows**

R billions



Source: SARB

has partly reduced the magnitude of the country's unrecorded transactions in recent years with the bulk of the flows being net inflows. The only exceptions were quarter two of 2011 and quarter four of 2012. A key future focus area will be the development of an appropriate set of analysis to extract optimal value from the OTC derivative data. This will also support the Banks participation in the BIS Triennial Survey.

### 3.4 Locational Banking Statistics data

In 2009 South Africa became the 43rd country to start compiling Locational Banking Statistics (LBS) data to be submitted to the BIS. The LBS data provides quarterly data on international financial claims and liabilities of bank offices resident in the BIS reporting countries broken down by currency, sector of counterparty, country of residence of counterparty, and nationality of reporting banks. In this dataset, both domestic and foreign-owned banking offices in the reporting countries report their outstanding positions, including those vis-à-vis own affiliates. The LBS data are compiled using principles that are consistent with BoP and offer rich analytical value which could augment current international capital flow data. In a study on international capital flows Milesi-Feretti et al (2010) utilized the LBS datasets for various countries in an effort to improve the understanding of cross-border financial linkages for the financial sector.

As part of the development of the analytical usefulness of the LBS data South Africa is currently in the process of developing an analytical suite for the LBS data which will focus on the following key areas:

#### 3.4.1 Extension of monetary and credit aggregates

The current suite of monetary and credit aggregates will be expanded to include the following:

- In-depth analysis of balance sheet data, with particular focus on:

- Monitoring growth of aggregated and disaggregated (instrument, type of counterparty and residence of reporting institution) balance sheet data;
  - Monitoring financial intermediation - measure the size, growth and structure of different market segments; and
  - Peer group analysis of banks with common characteristics.
- Internal consistency and quality checks on monetary and credit aggregates by performing a reconciliation analysis between LBS data and other source data on monetary and credit aggregates;
  - Contextualizing LBS data within other macroeconomic domains - identifying synergies with external debt and Balance of Payments data – in this regard the LBS data will provide very useful insights into the dynamics of the South African banks' international footprint, asset and liability exposures and currency structure which could be beneficial when analysing its contribution to international capital flows measured in the balance of payments.

### **3.4.2 Indicators of vulnerability**

Data on cross-border exposure can greatly benefit the assessment and understanding of bank systemic risk by providing a benchmark vis-à-vis other countries in terms of both overall market share as well as categorisation provided in the data; such as lending and borrowing sectors and maturity and currency composition. In addition, it serves as a powerful tool for identifying economic trends that other banking statistics cannot capture adequately.

The analytical base will be developed in the following areas:

- Currency breakdowns and mismatches

The rapid expansion of cross-border investment positions means that currency movements can potentially have large balance sheet effects. The impact of this will vary across countries, depending on the scale of its international balance sheet, its net value position as well as the currency composition of its assets and liabilities. The analytical developments in this component will focus on analysing the composition of the foreign currency exposure of South African banks; determining whether currency mismatches exist and determining the natural foreign currency hedge positions.

- Structural vulnerabilities

In order to assess structural vulnerabilities of South African banks within an international context it is necessary to express the data in relative terms. The analysis suite will explore ratio analysis such as the size of the banking sector relative to GDP; foreign lending ratio; and borrower concentration ratio to analyse their usefulness in determining the potential impact of banking sector problems on economic activity, the vulnerability of the national banking sector to cross-country spill-over effects, and the diversification of banks' foreign exposure across other countries as indicator of banks' vulnerability to first-round contagion effects.

- Financial interconnectedness and implications for systemic risk

The network analysis perspective can provide a model to map financial interconnectedness and draw implications for system stability. The LBS data is well-suited for studying temporal patterns in financial linkages across countries. This development will draw on the rapidly expanding line of research on applying network analysis tools in order to capture bilateral relationships and describe the South African LBS data in a network context.

### 3.5. Integrated economic accounts

South Africa is in the process of construction a full set of integrated economic accounts (IEA) based on the guidelines provided in SNA 2008. The Rest of the World (ROW) data is compiled from the International Investment Position (IIP) and BoP data. The IEA is compiled from the BSA that records movements between two stock periods as follows:

$$\text{Opening Stock}_{T-1} + \text{Transactions}_T + \text{Revaluations}_T + \text{Other Volume changes}_T = \text{Closing Stock}_T$$

$$OS_{T-1} + T_T + R_T + OVC_T = CS_T$$

Currently the South African IIP and BoP are largely compiled from different sources and with the integration into the IEA model there will be a movement towards applying the BSA in the IIP and BoP data as well. This should provide improved methodological construct to the international capital flow data provided by these datasets.

In addition it will provide harmonization between ROW flows and stocks and the sectors of the national economy which is based upon the closer alignment between the SNA2008 and BPM6. Given the importance of international capital flows to the South African economy and the cross-checks built into the IEA data it identifies gaps that exist with respect to:

- Missing data; and
- Data methodologies that needs improvement

Thus apart from the refinements and developments done on the specific functional categories of the financial flows, the creation of the set of IEA's for South Africa as well as the development of the LBS data will benefit the overall compilation and analysis of South Africa's capital flow data.

### 3.6. Conclusion

Based on the above analysis and methodological discussion it is evident that these two different but closely linked components are equally important. The analysis of capital flows against the backdrop of a country's broader macroeconomic situation is of critical importance in the modern era where economies are much more exposed to international surges and reversals in capital flows. These can often be sudden and based on sentiment rather than

underlying macroeconomic construct. It is however also true that EME's need to identify and address their unique domestic developments that could impact negatively on their ability to attract and retain the appropriate type of capital flows. One of the unyielding pre-requisites is that a country that wishes to attract international capital should ensure that the methodological base upon which their statistics are built is sound and flexible enough to adjust to continual changes. This base should produce statistics that deliver a clear and accurate picture of the existing macroeconomic landscape and thereby allow investors to gain a true perspective on what the country has to offer and requires in return.

In this regard South Africa has continually made progress over the past years and has specifically sharpened its approach since the financial crisis - identifying and implementing various methodological refinements and developments to continually improve the accuracy, validity and ultimately the reliability of their international capital flows statistics. This is a key strategic focus for South Africa in order to provide the best possible service to its policy makers, broader statistics users in general and international investors that seek to base their investment decisions on sound, reliable and timeous statistics. If followed consistently and across countries, this approach will contribute to the improved understanding and analysis of international capital flows. With the global economy growing increasingly interlinked and interdependent with each passing year and thereby also becoming more susceptible to contagion and the consequences associated with that, it is imperative that macroeconomic statisticians spare no effort to ensure that the underlying methodology and quality of international capital flow statistics is above reproach.

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IFC Satellite meeting at the ISI World Statistics Congress on *"Assessing international capital flows after the crisis"*  
Rio de Janeiro, Brazil, 24 July 2015

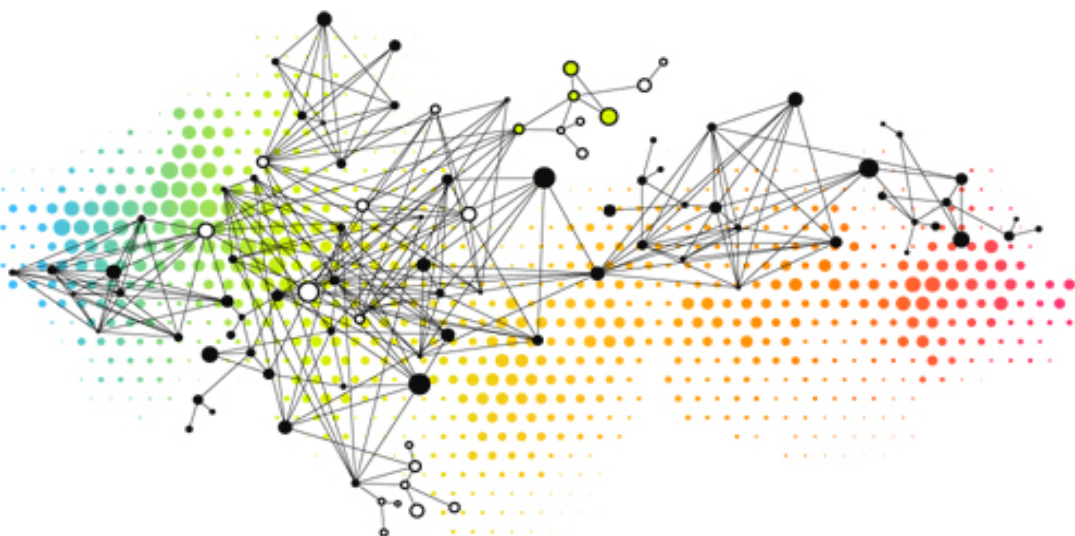
## Measuring and Reporting Capital Flows: The Role of the New Statistical Standards and Data Initiatives<sup>1</sup>

Manik Shrestha, International Monetary Fund

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<sup>1</sup> This presentation was prepared for the meeting. The views expressed are those of the author and do not necessarily reflect the views of the BIS, the IFC or the central banks and other institutions represented at the meeting.

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*Assessing International Capital Flows After the Crisis  
BCB/CEMLA/IFC Satellite Meeting at the ISI 60<sup>th</sup> World Statistical Congress  
Rio de Janeiro, Brazil (July 24, 2015)*

## **Measuring and Reporting Capital Flows: The Role of the New Statistical Standards and Data Initiatives**

Manik Shrestha  
Statistics Department  
International Monetary Fund

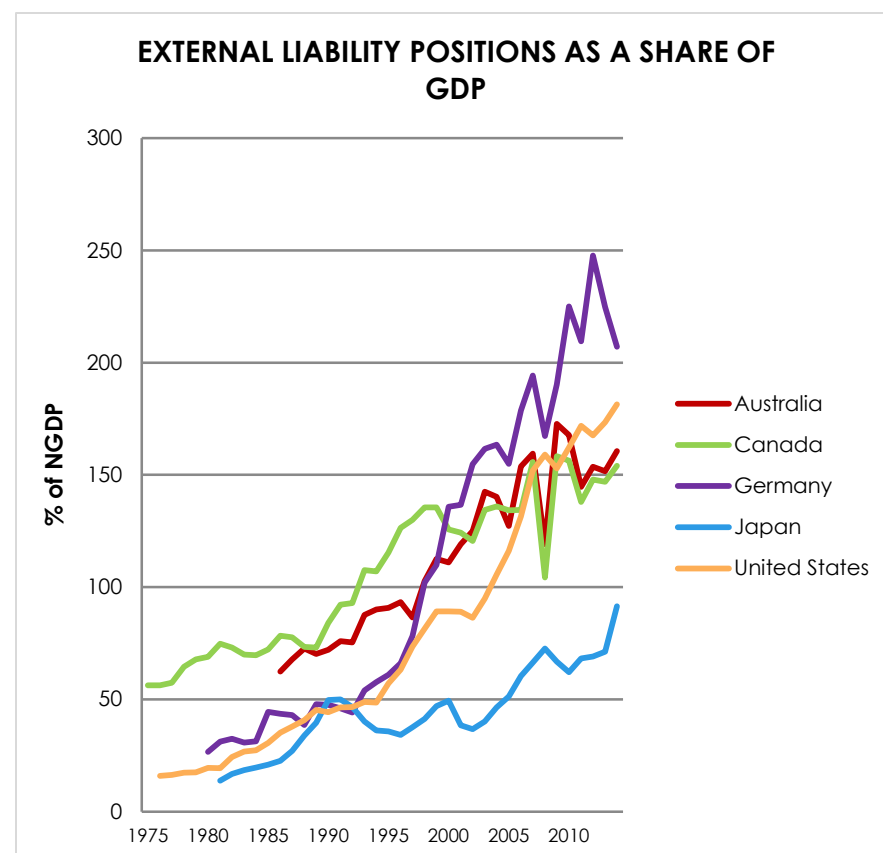
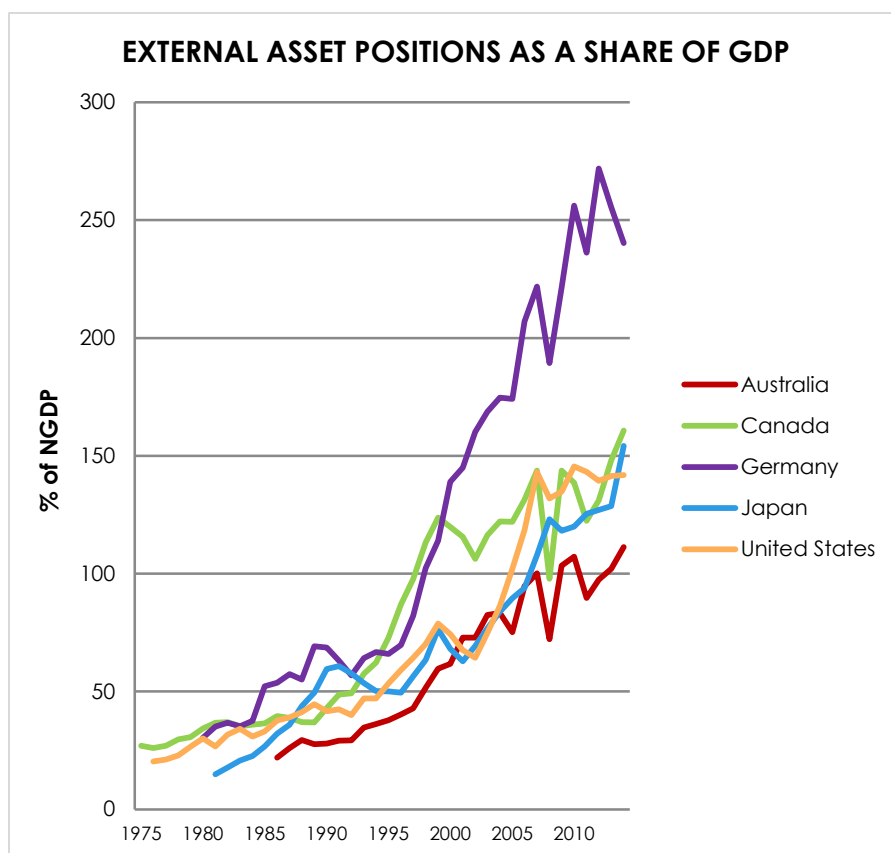


# Outline of Presentation

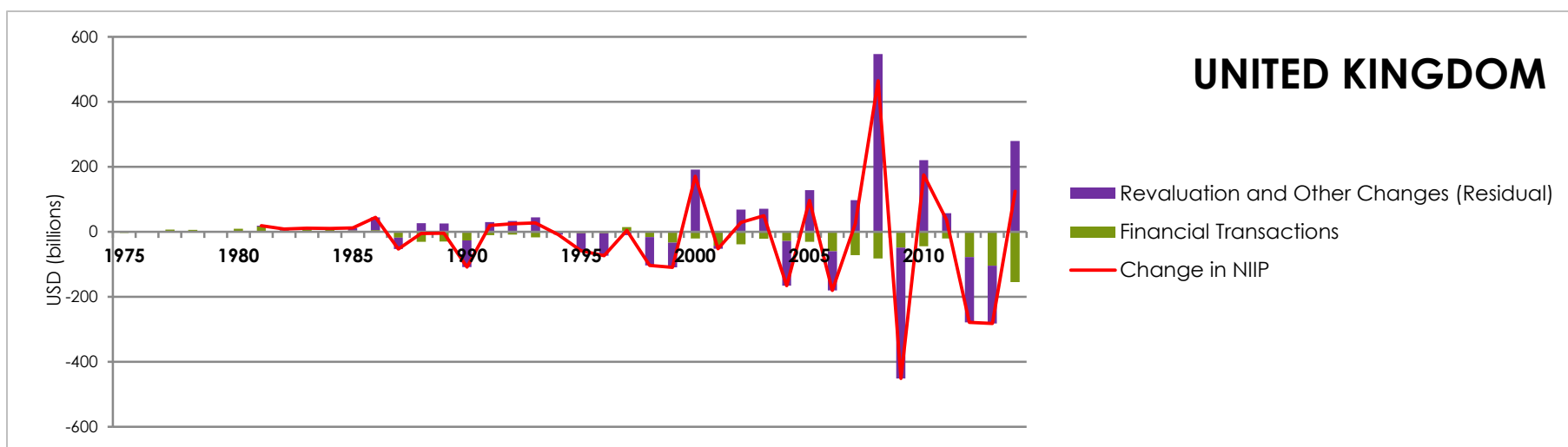
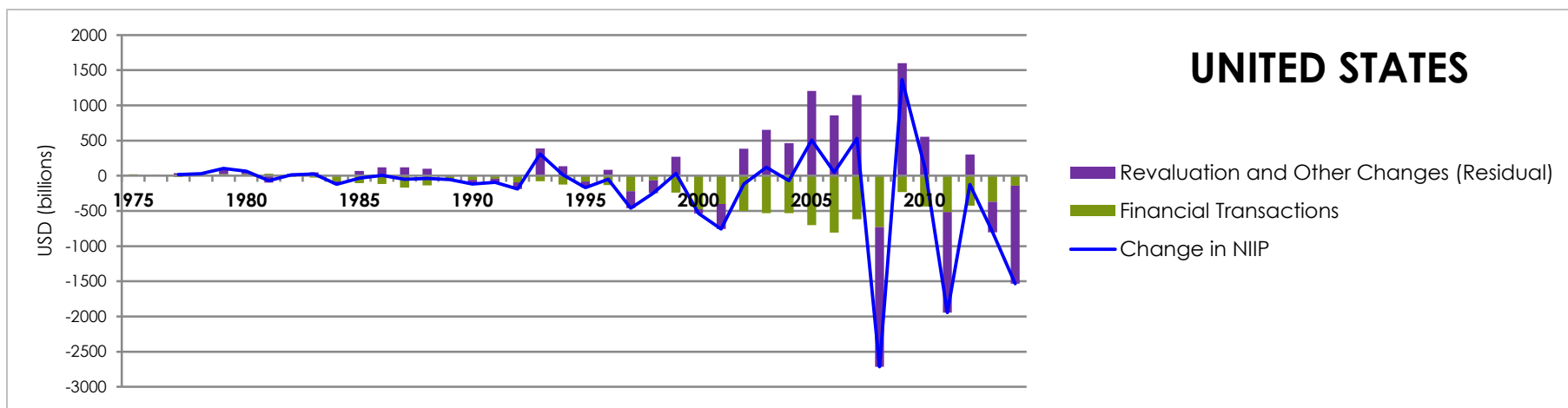
- A Macroeconomic Data Framework for Capital Flows
- *BPM6*: Responding to the Dynamics of Capital Flows
- *BPM6* Implementation: Experiences and Challenges
- Other Data Initiatives
- Concluding remarks



# External Asset and Liability Positions are Growing Faster Relative to the Real Economy



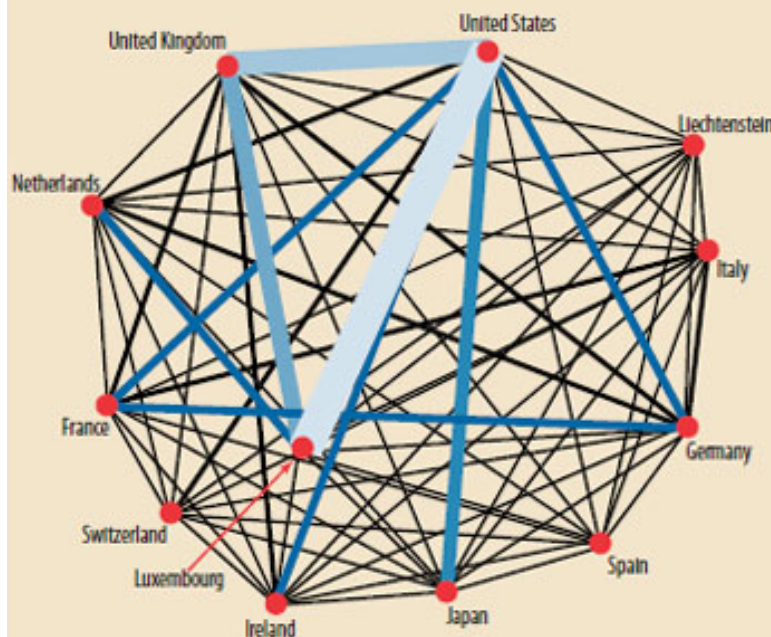
# Revaluation and Other Flows are Important



# Global Financial Networks Have Grown

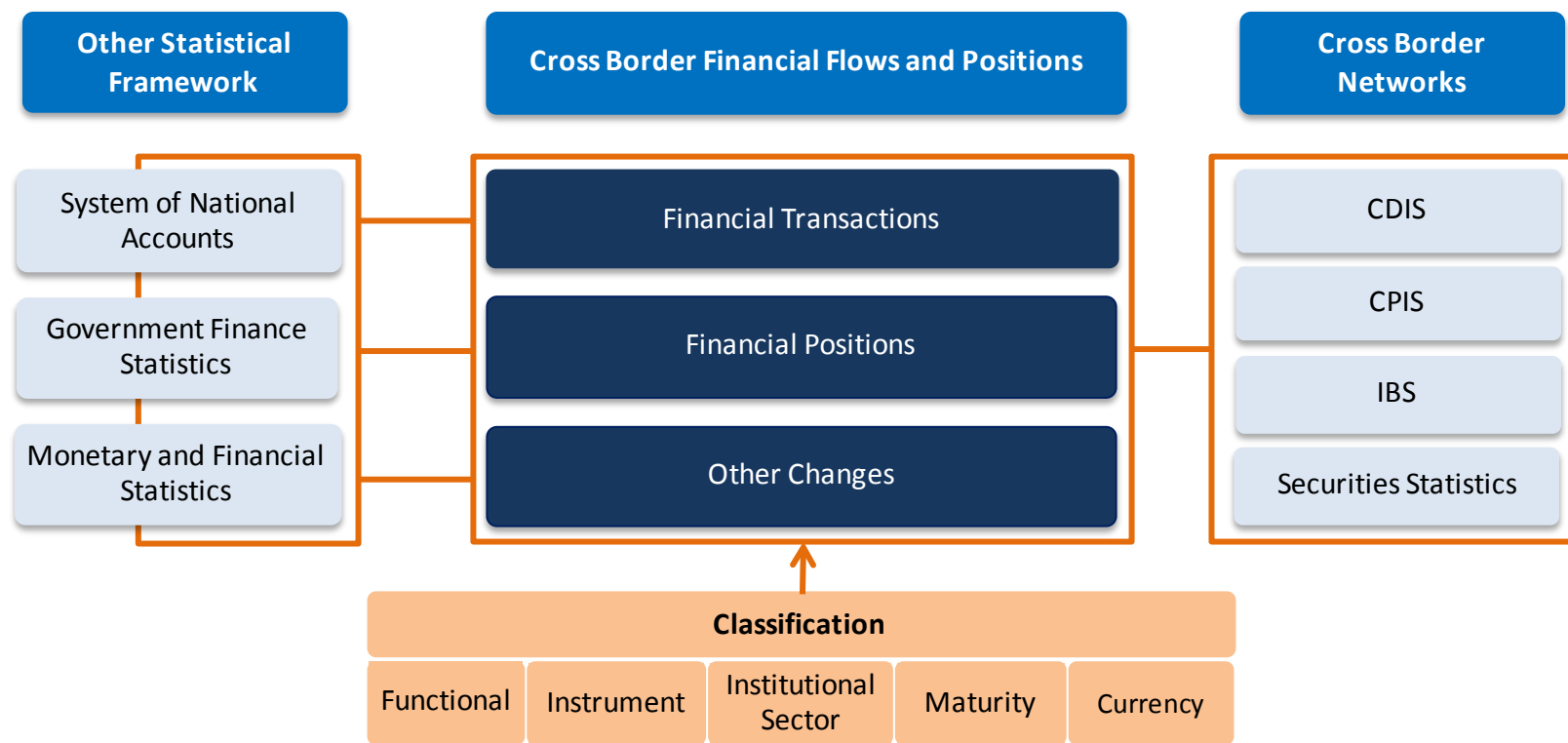
## An interconnected world

The financial links between the United States, the United Kingdom, and Luxembourg are especially strong.  
(countries with largest number of connections with other countries)



Sources: Lipper (Thomson Reuters); and IMF staff calculations (2010).  
Note: Thicker lines signify greater exposure among countries.

# Financial Flows and Positions: An Integrated Macroeconomic Data Framework





## ***BPM6*: Three thematic trends motivated the revisions...**

- **Balance Sheet Analysis (BSA)**: *BPM6* builds on the growing interest in analyzing risks and vulnerabilities using balance sheet data.
  - International investment position (IIP) is at the center of *BPM6*, with extensive elaboration of balance sheet components.
- **Globalization**: new economic arrangements, globalized production processes, and heightened individual and corporate connections across economies posed new challenges for measuring capital flows.
- **Financial innovation**: the emergence of new financial instruments and arrangements among institutional units (e.g. securitization and SPEs)

# How has *BPM6* enhanced the measurement of capital flows?

- Scope of financial assets and liabilities widened/clarified
  - Treatment of SPEs, SDRs, Guarantees, Derivatives, Pensions
- Broader sector classifications, consistent with *2008 SNA*
  - *Other financial corporations and nonfinancial corporations, households and NPISHs distinguished under other sectors. Central bank and deposit-taking corporations except the central bank introduced in BPM6.*
- Functional and instrument classifications expanded and better aligned with *2008 SNA*
  - Employee stock options, investment fund shares, insurance, pension, and standardized guarantee schemes
  - Direct investment identifies investment between fellow enterprises
  - Reserve-related liabilities introduced as a classification
  - Mergers and acquisitions, superdividends, undistributed branch profits, debt defeasance, share buybacks, index-linked debt instruments and one-off guarantees addressed/clarified

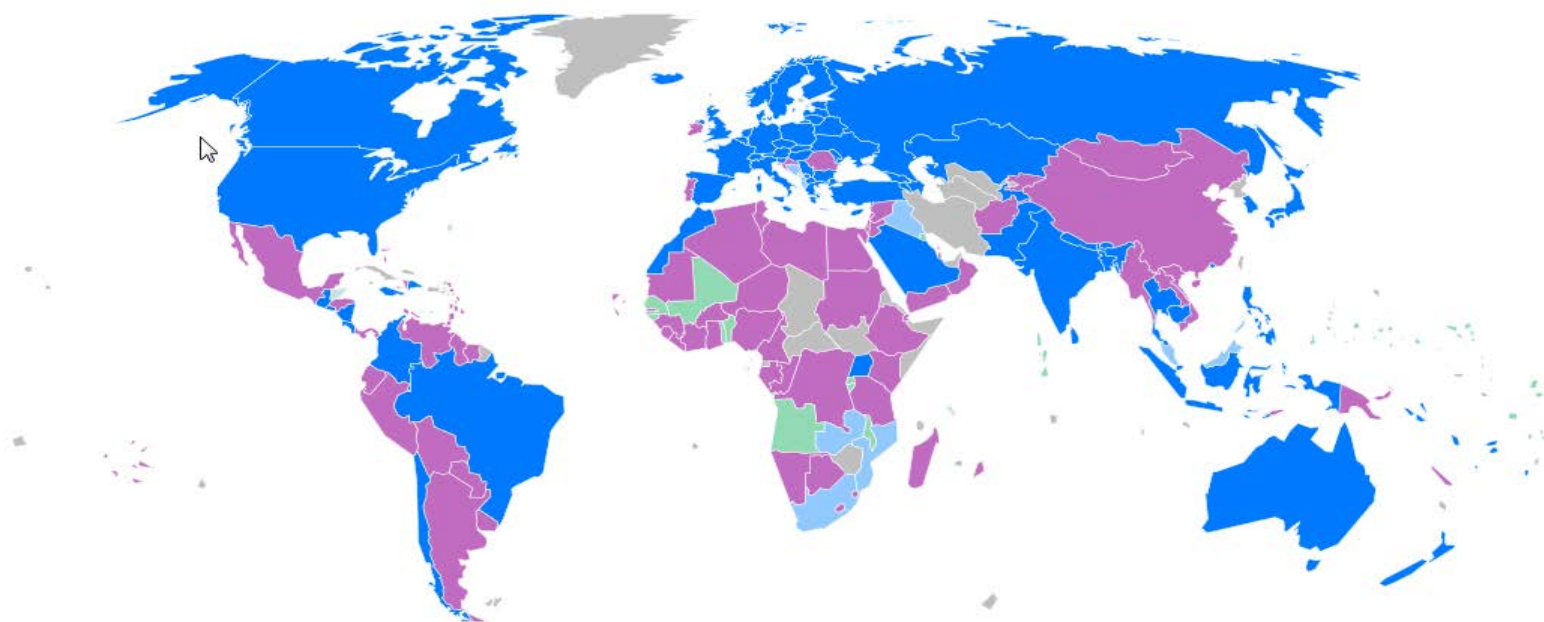


# How has *BPM6* enhanced the measurement of capital flows?

- Greater focus on remaining maturity and currency classifications (memorandum items)
- Principle of ownership consistently applied (e.g., goods for processing and merchanting) with implications for financial flows (under *BPM5*, goods for processing transactions potentially distorted financial flows).
- Recording basis clarified for:
  - Arrears;
  - Transactor principle for traded financial instruments issued by nonresidents; and
  - Migrants transfers.

# Implementation of *BPM6*

(based on data published in the IMF's *International Financial Statistics*, as of July 2015)



<b><i>BPM6</i> Reporters</b>	<b>106</b>
of which:	
BOP Q - IIP Q	75
BOP Q - IIP A	7
BOP A - IIP A	16
BOP Only	8
<b>BPM5 Reporters</b>	<b>86</b>



# Implementation of *BPM6*

- Data for **106 economies** published in *IFS* on a *BPM6*-basis
- Australia was the first country to implement *BPM6*
- ECB/Eurostat adopted a coordinated approach to *BPM6* Implementation for European Union countries.

## Experiences and Challenges:

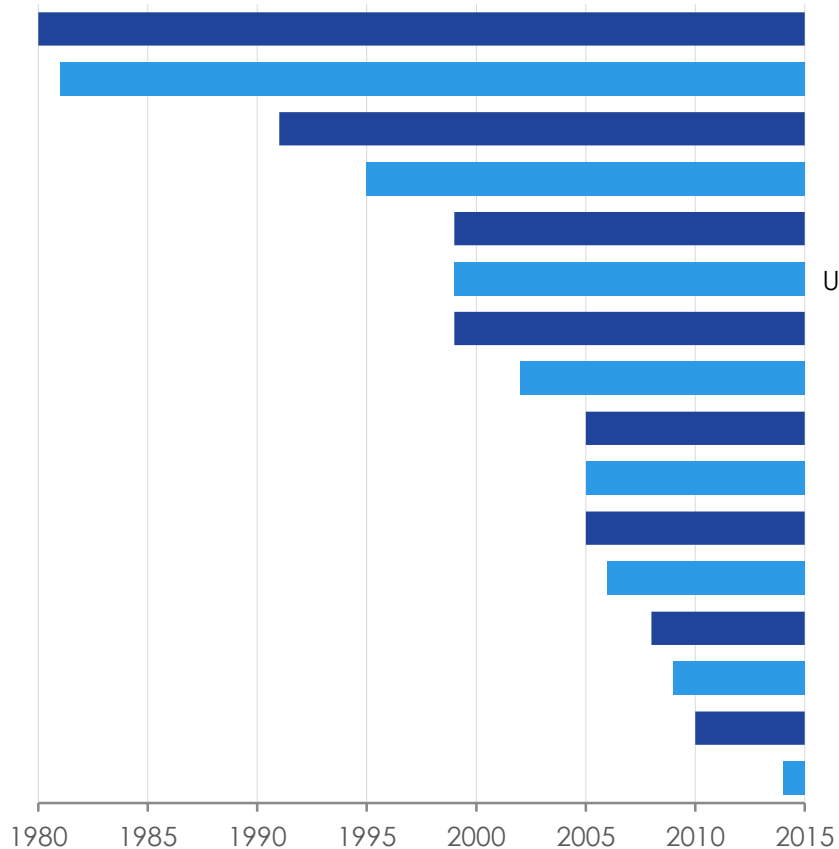
- Communication strategies (bringing data providers and users on board)
- Stepwise approach, starting with the most relevant changes
- Adapting data collection infrastructure (resource demands)



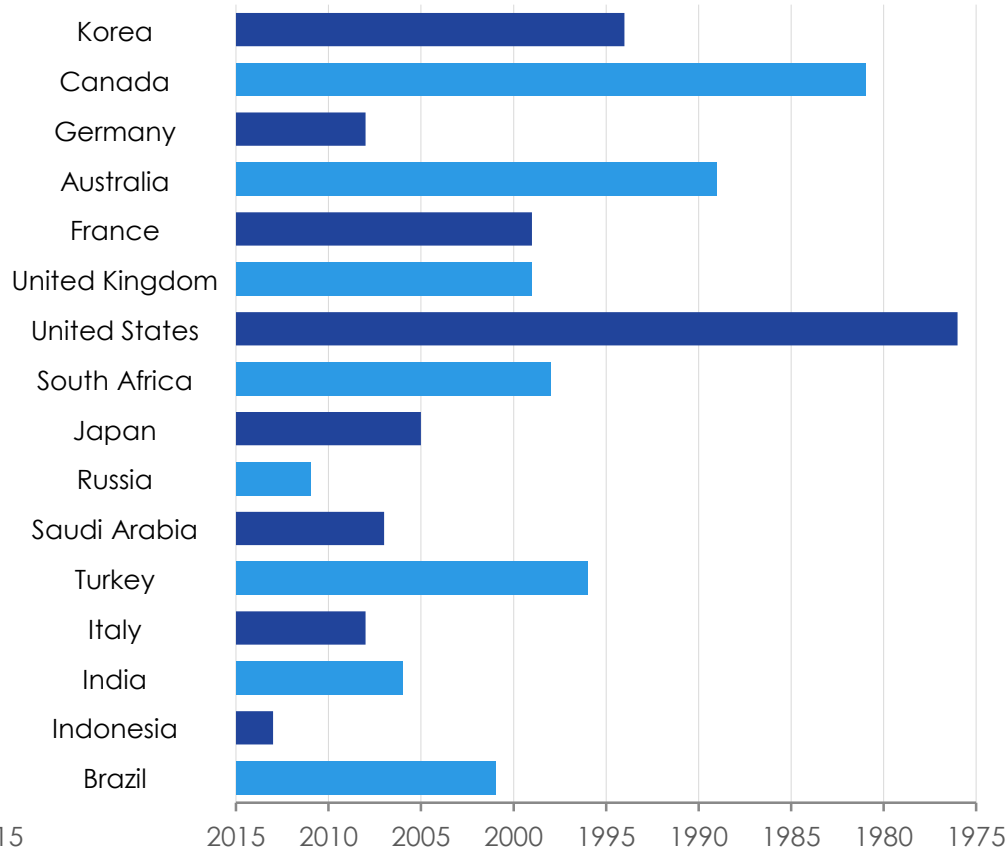
# Length of *BPM6* Historical Series Varies

(Example: G-20 Economies)

### Balance of Payments



### International Investment Position



# IMF's Work on *BPM6* Conversion

- Beginning with the August 2012 releases of the *IFS*, the IMF has been publicly disseminating data and metadata on external sector accounts with data from 2005 forward on a *BPM6* basis. Data were converted from a *BPM5*-based series using a generic conversion tool, unless countries provided their own *BPM6* series.
- In response to increasing demand for longer time series, the IMF will publish, beginning with the September 2015 releases of the *IFS*, the pre-2005 series. The data would be based on the generic conversion tool unless countries provided their own *BPM6* series.
- ***BPM6* data in surveillance:** *balance of payments data on BPM6* basis first launched in the April 2014 IMF's *World Economic Outlook (WEO)*. IIP data on a *BPM6* basis presented in *WEO* for the first time in its April 2015 edition.

# Data Initiatives: Development of Major Balance Sheet Data

Data Categories	GDDS <sup>1</sup>		SDDS		SDDS Plus <sup>2</sup>	DGI <sup>3</sup>
	1997	2015 <sup>4</sup>	1996	2015	2015 <sup>4</sup>	2015
<b>Data Categories</b>						
Sectoral Balance Sheets				Q <sup>5</sup>	Q	Q
Government Financial Balance Sheet						Q
Central Government Debt	Q	Q	Q	Q	Q	Q
General Government Gross Debt				Q <sup>5</sup>	Q	Q
Depository Corporations Survey	M	M	M	M	M	
Central Bank Survey	M	M	M	M	M	
Official Reserves Assets	M	M	M	M	M	
Template on International Reserves and Foreign Currency Liquidity				M	M	
External Debt		Q		Q	Q	
International Investment Position (IIP)		A		Q	Q	Q
Coordinated Portfolio Investment survey (CPIS)					H	H
Coordinated Direct investment Survey (CDIS)					A	
Securities Statistics					Q	Q
G-SIBs						Q
International Banking Statistics (IBS)						Q
Financial Soundness Indicators (FSIs)		Q <sup>5</sup>		Q <sup>5</sup>	Q	Q
<b>Number of countries participating/subscribing economies</b>						
	15 <sup>6</sup>	112	43	64	8	19

Note: 13 GDDS participants have moved to SDDS, and eight subscribers of SDDS have moved to the SDDS Plus.

"A" stands for annual data; "H" - semi-annual data; "Q" - quarterly data; and "M" - monthly data.

<sup>1</sup> Enhanced in 2015, now called e-GDDS.

<sup>2</sup> Launched in 2014.

<sup>3</sup> Launched in 2009.

<sup>4</sup> Some data categories were introduced in between the inception year and 2015.

<sup>5</sup> Encouraged.

<sup>6</sup> By end-2000.



# Data Initiatives: Data Gaps Initiative (DGI)

- **The G-20 DGI has been a successful initiative, almost unique in its scope and implementation.**
- Launched in 2009 by the FSB and the IMF at the request of the G-20 and includes BIS, ECB, Eurostat, OECD, UN and World Bank.
- Twenty recommendations proposed under the DGI to close the information gaps revealed by the global financial crisis.
- Significant progress made in implementing the 20 recommendations; the majority of them expected to be implemented by end-2015/early 2016.
- Proposals for DGI Phase 2 to be presented for endorsement by the G-20 Finance Ministers and Central Bank Governors in September 2015.

# Some Concluding Remarks:

- Cross border financial flows and positions now part of a more integrated data collection framework that supports analysis of **linkages within the domestic economy**, and with **global financial networks**.
- Globally, progress is being made in implementing *BPM6*, and in improving the scope and quality of financial network databases.
- The Road Ahead:
  - Demonstrating the value of data collections
  - Linking data gaps to policy relevance
  - Having a tailored and coordinated approach for improving data compilation across countries

IFC Satellite meeting at the ISI World Statistics Congress on *"Assessing international capital flows after the crisis"*

Rio de Janeiro, Brazil, 24 July 2015

## The compilation of goods for processing and merchanting under BPM6 in Korea<sup>1</sup>

Seung Hwan Park, Bank of Korea

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<sup>1</sup> This presentation was prepared for the meeting. The views expressed are those of the author and do not necessarily reflect the views of the BIS, the IFC or the central banks and other institutions represented at the meeting.

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# The Compilation of Goods for Processing and Merchenting under BPM6 in Korea

July 2015

Seunghwan Park  
Director, Monetary & Financial Statistics Division



THE BANK OF KOREA

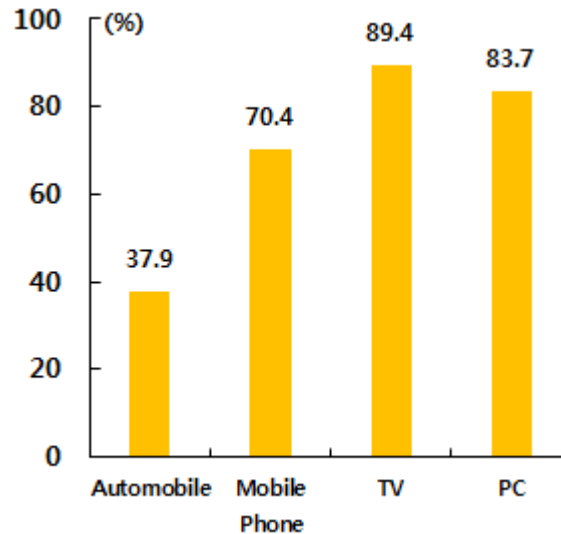
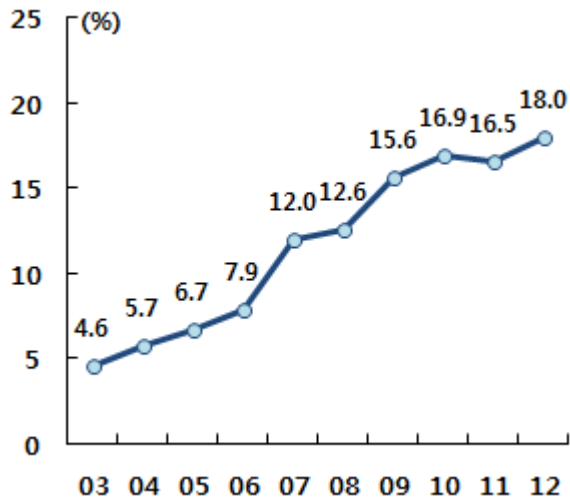


# Outline

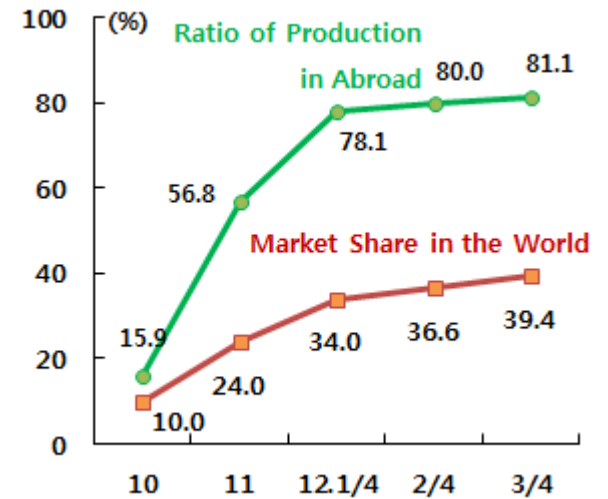
- 1. Korea's Global Production**
- 2. Source Data**
- 3. Compilation Method**
- 4. Compilation Results**
- 5. Future Plans**

# 1. Korea's Global Production

## Share of Offshoring Production



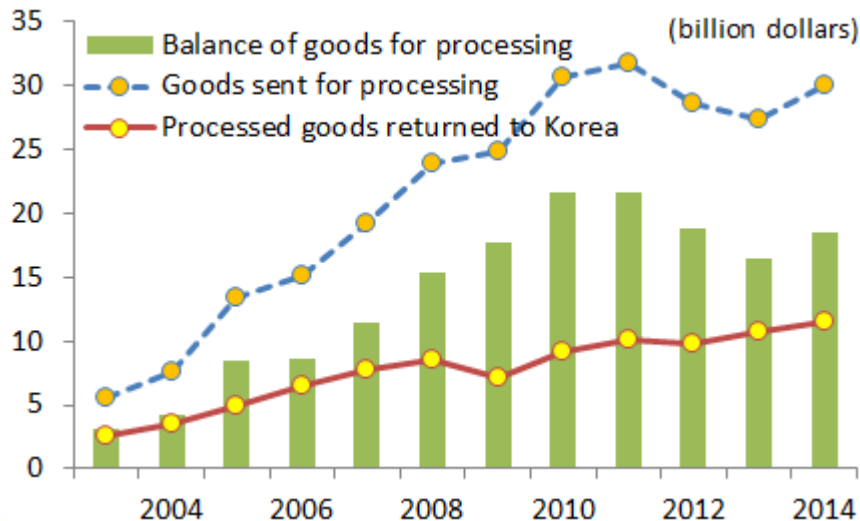
## (Smartphone)



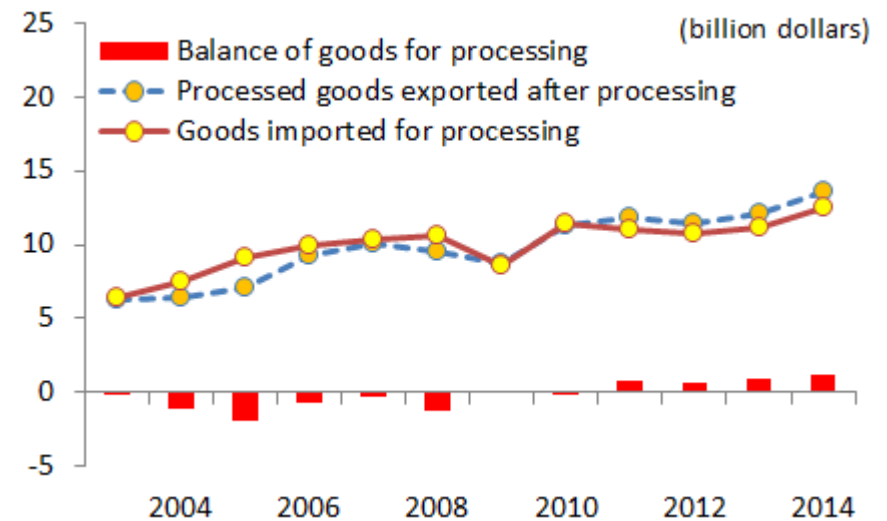
# Goods for Processing in Korea

- Outward processing has been growing.
  - Since the mid-2000s, **goods sent for outward processing** have been much larger than **processed goods returned**.
- By contrast, inward processing is stable.
  - After inward processing, **most of the processed goods are re-exported abroad**.

## Outward Processing



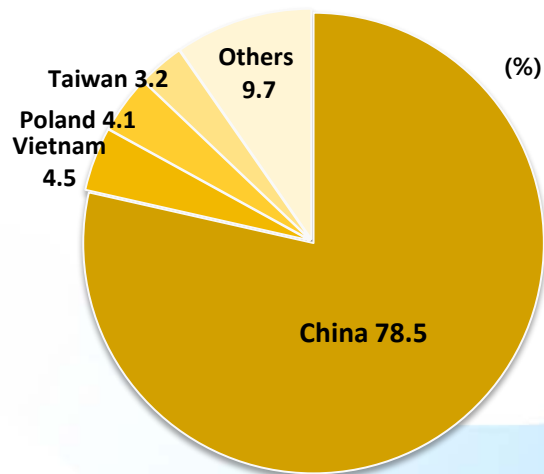
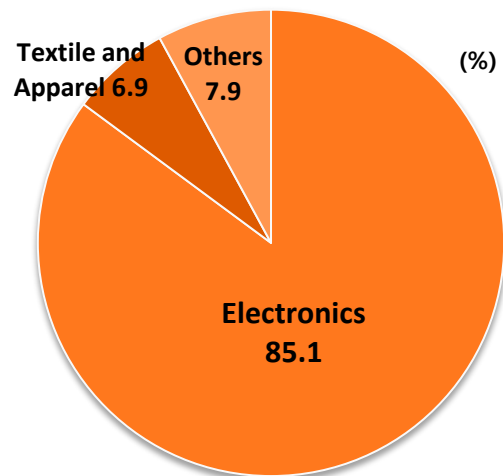
## Inward Processing



# Goods for Processing in Korea

## □ Composition of Goods sent for Outward Processing(2010)

- **85% is for electronics** (Especially semiconductor, display panel, etc.)
- **78% sent to china** (Asia's Factory)



## 2. Source Data

### (1) Customs Data

- The BOK obtains Customs Data **from the Korea Customs Service every month.**
  - They include
    - ① goods sent abroad **for outward processing,**
    - ② processed goods returned to Korea,
    - ③ goods received abroad **for inward processing,** and
    - ④ processed goods returned abroad, etc.
  - They also include information on the **actual delivery terms, actual transaction values, and settlement currencies, etc.**

## 2. Source Data

### (2) Foreign Exchange Information System(FEIS) : ITRS

□ **Financial institutions have the obligation of reporting** all foreign exchange businesses going through them to the FEIS\*.

\* In Korea, **the Foreign Exchange Transaction Act** requires financial institutions to report all foreign exchange transactions to the FEIS.

– FEIS includes the EX/IM **codes and values**, counterpart countries, HS code, delivery terms, remittees(exporters), and remitters(importers).

– **Processing fees** are also reported through the FEIS.

– The FEIS was set up in April 1999 in order to swiftly **collect and analyze foreign exchange transactions** and market information.

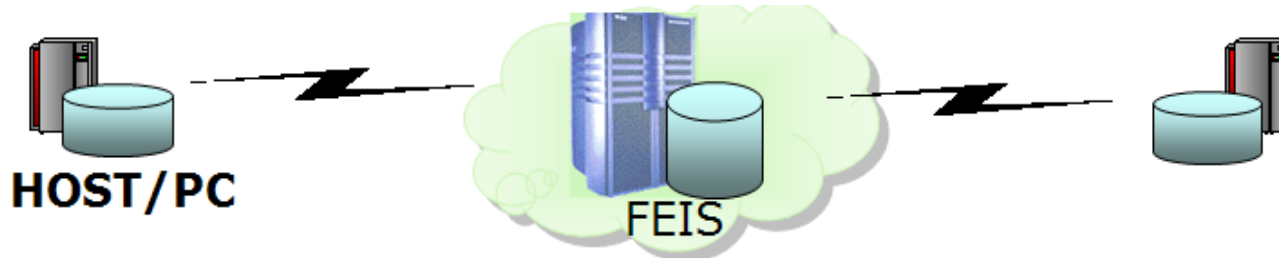


# (Ref) Foreign Exchange Information System(FEIS)

Reporting Institutions

FX Information  
Concentration Agency

Information Users



Institutions to deal with foreign exchange affairs

- Domestic banks
- Foreign bank branches
- Investment traders, Investment brokers  
(futures companies, securities companies)
- Insurance companies
- Collective investment companies  
(asset management companies)
- Mutual credits, etc.

**Bank  
of  
Korea**

- Bank of Korea
- Ministry of Strategy and Finance
- National Tax Service
- Korea Customs Service
- Financial Supervisory Service
- Korea Financial Intelligence Unit
- Korea Deposit Insurance Corporation
- Korea Center for International Finance
- Financial Services Commission

# 3. Compilation Method

## A. Estimation of aggregate amount of goods for processing and merchanting

(1) In order to **calculate aggregate amount of BPM6-based EX/IM** based on FEIS data, we **subtract of non-customs EX/IM** other than customs EX/IM or processing/merchanting trades **among FEIS EX/IM**.

- ① (-) payments made at each stage of shipbuilding
- ② (-) bunkering
- ③ (-) goods procured in ports by carriers, etc.



## 3. Compilation Method

### (2) **Subtraction of no-draft transaction** among customs EX/IM

- ① (-) no-draft EX/IM
- ② (-) transfer EX/IM
- ③ (-) EX/IM of goods for processing
- ④ (-) ship exports, etc.

### (3) **Adjustment of freight charges and insurance fees** of customs EX/IM based on real delivery terms, so as to make the delivery terms of the FEIS coincide with the customs data

## 3. Compilation Method

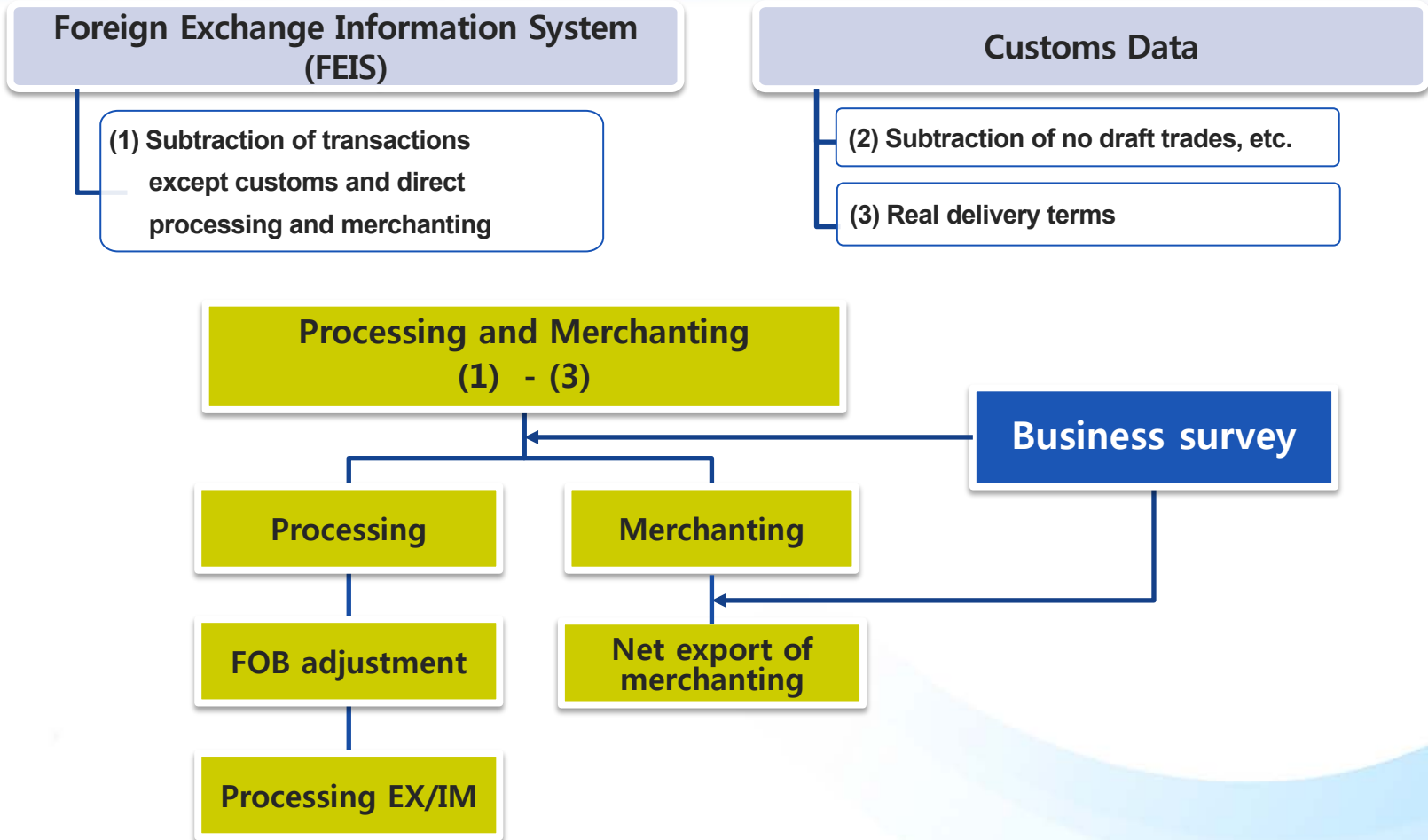
**(4) Deduction of customs data adjusted in (3) from the FEIS data adjusted in (1).**

*= The aggregate amount of processing and merchanting trades*

**B. The aggregate amount of the processing and merchanting is **divided into processing and merchanting.****

**With use of the EX/IM ratios by type, calculated based on business survey results.**

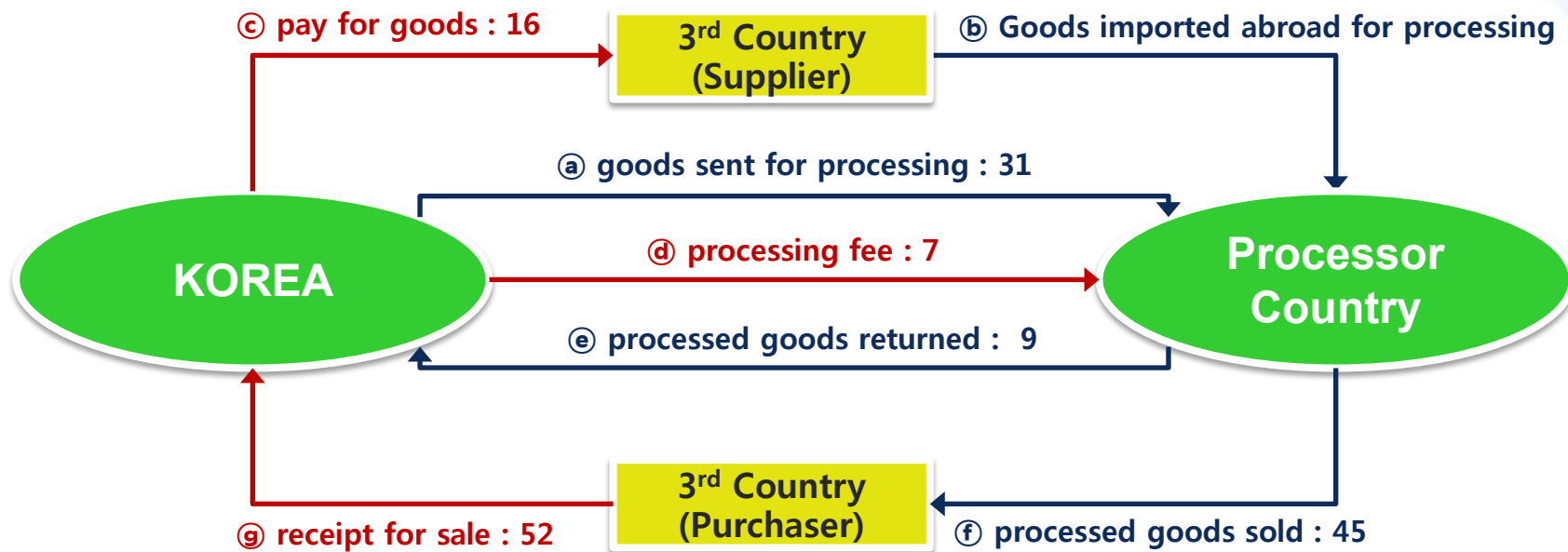
# Estimating Method of Merchancing and Goods for Processing



# 4. Compilation Results(2010)

## Outward Processing

(billion dollars)

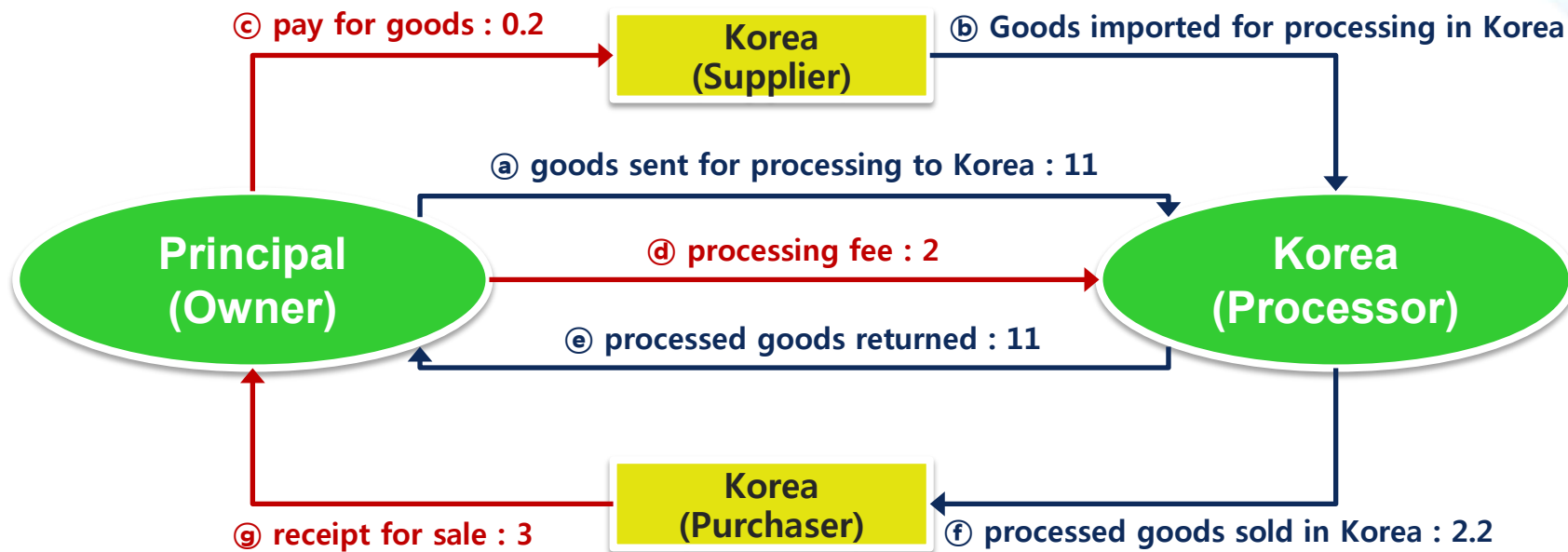


Goods account			Services account			Current
EX	IM	Balance	EX	IM	Balance	Balance
52.0	16.0	36.0	0.0	7.0	-7.0	29.0

# 4. Compilation Results(2010)

## Inward Processing

(billion dollars)



Goods account			Services account			Current
EX	IM	Balance	EX	IM	Balance	Balance
0.2	3.0	-2.8	2.0	0.0	2.0	-0.8

# 4. Compilation Results

(billion dollars)

	2010	2011	2012	2013	2014
<b>Processing Trade</b>					
- Export	51.6	89.4	94.6	85.4	81.5
- Import	20.0	63.9	65.3	52.4	42.2
<b>Net Exports of Goods Under Merchanting</b>	<b>5.2</b>	<b>5.1</b>	<b>10.1</b>	<b>14.6</b>	<b>13.7</b>
- Export(Negative)	30.6	31.3	38.9	59.2	54.4
- Export	35.8	36.5	49.0	73.8	68.0
<b>Manufacturing Services on Physical Inputs Owned by Others</b>					
- Credit	2.3	2.2	2.6	2.9	3.1
- Debit	7.0	9.4	9.2	8.6	8.6



## 5. Future Plan(To Change Compilation Method)

- **BOK will compile** goods for processing and merchanting using **the FEIS data in the future**, rather than estimation based on the FEIS and customs data.
  - The BOK broke down the EX/IM codes, April 1, 2012, to make the coverage of FEIS and that of the BOP agree
    - o The BOK has **twice provided financial institutions with presentations** explaining these changes.
    - o The BOK has **twice sent official document** requesting cooperation to **more than 2,000 EX/IM corporations** which operate the processing and merchanting trades.
    - o The BOK **continues to monitor the processing and merchanting** trades reported by financial institutions through the FEIS.



**Thank you for your attention!**





Irving Fisher Committee on  
Central Bank Statistics

BANK FOR INTERNATIONAL SETTLEMENTS

---

IFC Satellite meeting at the ISI World Statistics Congress on *"Assessing international capital flows after the crisis"*

Rio de Janeiro, Brazil, 24 July 2015

## Brazilian data collection system and BPM6 issues<sup>1</sup>

Thiago Said Vieira, Central Bank of Brazil

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# Brazilian data collection system and BPM6 issues

Thiago Said Vieira

Banco Central do Brasil  
Economics Department  
Balance of Payments Division

## Outline

1. Introduction
2. Data sources – BoP and IIP
3. ITRS – Exchange contract system
4. Compilation mechanics
5. **BPM6 issues and capital flows**

## Introduction

- ❑ The Brazilian BoP and other external statistics are compiled by the Department of Economics' Balance of Payments Division (DEPEC/DIBAP) from the Central Bank of Brazil (CBB) since its inception
- ❑ DIBAP is also responsible not only for compiling external sector statistics (ESS), but also providing the analysis considering monetary policy and exchange rate policy
- ❑ CBB implemented BPM6 standard on April, 2015. The BoP figure are released on **monthly basis** in **3 or 4 weeks after the end of the base period**



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## Press releases schedule 2015

Months	Foreign sector		Monetary policy and system credit operations		Fiscal policy		Open market	
	Day	Day of the week	Day	Day of the week	Day	Day of the week	Day	Day of the week
January	23	friday	27	tuesday	30	friday	28	wednesday
February	24	tuesday	25	wednesday	27	friday	26	thursday
March	25	wednesday	21	friday	31	tuesday	24	tuesday
April	22	wednesday	24	friday	30	thursday	27	monday
May	26	tuesday	27	wednesday	29	friday	25	monday
June	24	wednesday	26	friday	30	tuesday	23	tuesday
July	22	wednesday	30	thursday	31	friday	27	monday
August	25	tuesday	25	wednesday	28	friday	24	monday
September	23	wednesday	25	friday	30	wednesday	28	monday
October	23	friday	27	tuesday	30	friday	26	monday
November	25	thursday	27	friday	30	monday	24	tuesday
December	21	monday	23	wednesday	28	monday	22	tuesday

## Data sources - BoP

- ❑ Main source: ITRS - basically the FX settlement system (**daily**)
- ❑ Other sources:
  - ❑ Administrative
    - ❑ Customs and Ministry of Trade (**weekly**, goods)
    - ❑ Consolidated Balance Sheets of the Financial System - COSIF (**monthly**, mainly deposit assets, assuring the double-entries for most of the transactions)
    - ❑ International Reserves Department (**daily**, interest credits)
    - ❑ Selic, a Brazilian custodian system (**monthly**, debit interests on public debt securities issued in the country)
  - ❑ Surveys
    - ❑ Brazilian capital abroad (**quarterly**, reinvested earnings) and
    - ❑ Census of foreign capital in Brazil (**annual**, reinvested earnings)
    - ❑ Information from Brazilian companies that leave exports revenues abroad
    - ❑ Others (Seagoing transportation companies, Insurance companies, ... )
  - ❑ Estimates (mainly to transportation accounts)

## Data sources - IIP

- ❑ Surveys
  - ❑ Brazilian capital abroad (**quarterly**, threshold USD100 million, all assets other than reserves)
  - ❑ Brazilian capital abroad (**annual**, benchmark survey with a threshold of USD100 thousand, all assets other than reserves)
  - ❑ Census of foreign capital in Brazil (**annual**, enterprises with net worth equal or greater than USD100 million, direct investment-equity liabilities)
  - ❑ Census of foreign capital in Brazil (**five-year**, benchmark survey with no threshold, direct investment-equity liabilities)
- ❑ International Reserves Department (**daily**, reserve assets)
- ❑ Electronic Registry of Foreign Capital - RDE (**daily/monthly**, loans, debt securities and trade credits)
- ❑ Brazilian security and exchange commission (CVM) (**monthly**, stock exchange and private debt securities issued in the country)
- ❑ Selic, a Brazilian custodian system (**monthly**, public debt securities issued in the country)

## ITRS – Exchange contract system

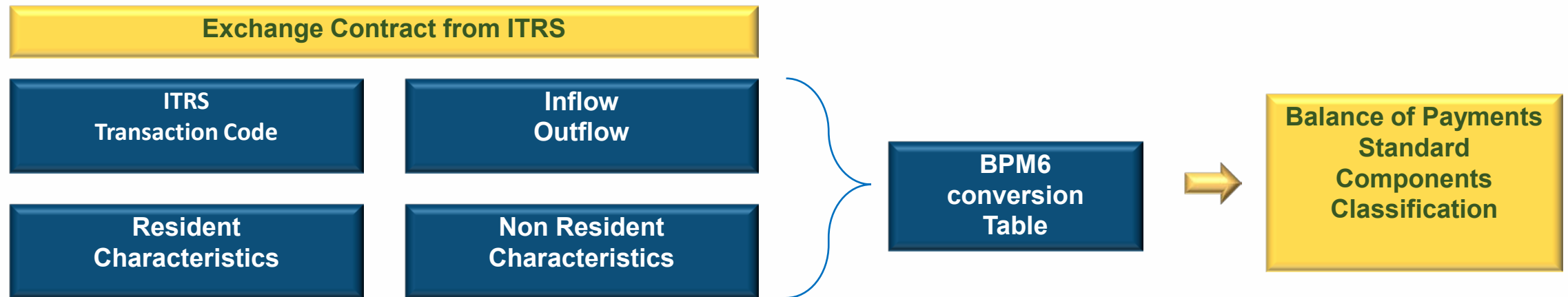
- ❑ It is reminiscent, as in many countries, from a FX control system. Although controls were lifted years ago, the exchange registration structure was kept mainly for statistical purposes
- ❑ In Brazil there is (almost) no bank accounts denominated in foreign currency. Furthermore, with almost no exceptions, transactions among residents may not be settled in foreign currency, by law
- ❑ In this sense, FX transactions (primary market) generally reflects a BoP transaction between a resident and non resident
- ❑ Mandatory FX contracts' registration for each and every **(no reporting threshold)** resident to non-resident transaction results in high frequency data with very good coverage
- ❑ Exchange contracts are generated outside the CBB Information System (SISBACEN), but are daily submitted to it by all banks and all other foreign exchange dealers
- ❑ Data are available online:
  - ❑ More than 600.000 exchange contracts are settled monthly
  - ❑ 30.000 daily, on average



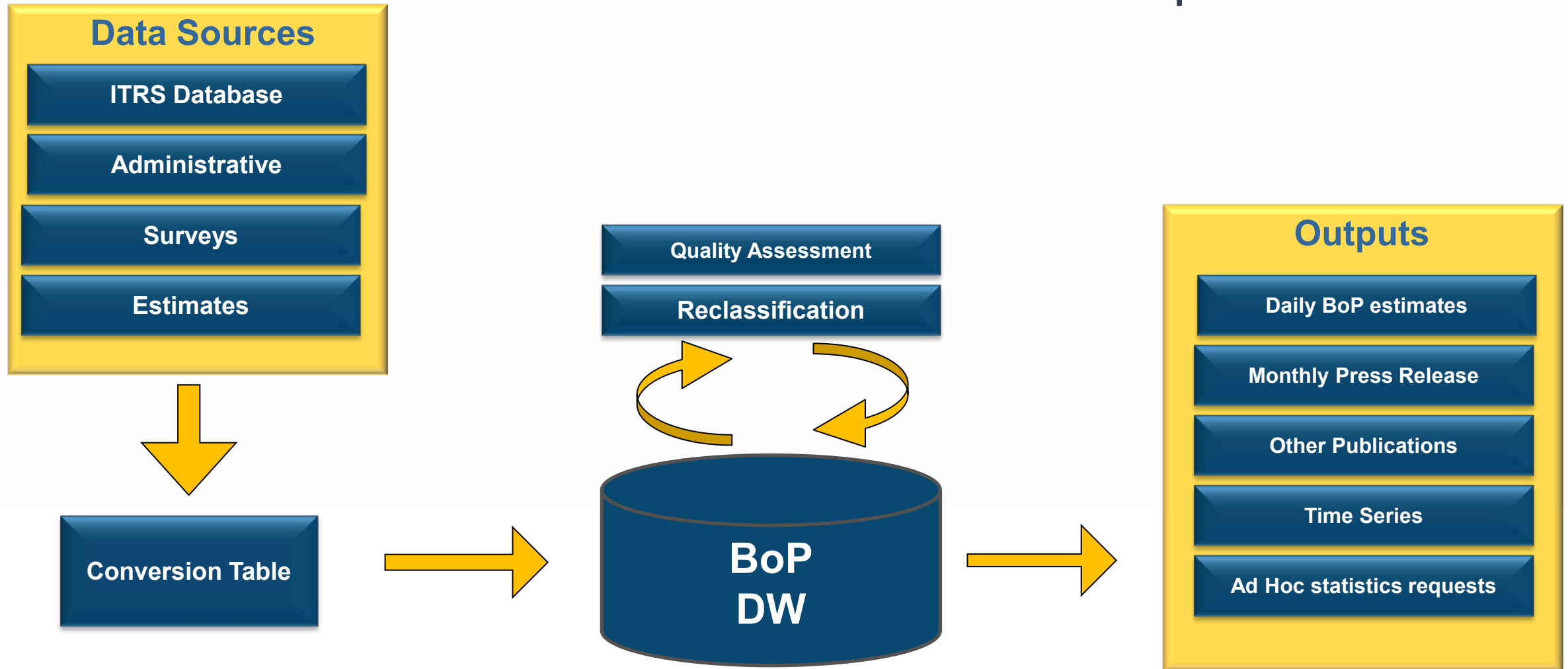
## Compilation mechanics

- ❑ To transform the FX contracts into BoP data, a dedicated IT platform is needed. At the core of the data compilation process is a **Data Warehouse (DW)**, which was designed specifically for BOP
- ❑ The compilation of statistics is done by converting ITRS data into BOP data. This conversion is done by means of “translating” combinations of the ITRS fields into standard IMF BPM6 codes
- ❑ The DW receives inputs from the ITRS and the other data sources, stores and transforms them into BoP statistics, and also serves as a platform for feeding regular publications and other ad-hoc requests’ tables.

## Compilation mechanics



## Compilation mechanics



## Compilation mechanics

- ❑ Data quality assessment procedures are used to verify transactions in any of their dimensions in order to adequately reflect the characteristics of transactions from a BOP point of view. Data can be adjusted in any of its dimensions (economic nature, economic sector of the counterpart, intercompany lending) and transactions of any value can be reclassified
- ❑ In this process, additional sources of information may be used:
  - ❑ Results of previous analyzes
  - ❑ Registries of debt and FDI positions
  - ❑ Central Bank surveys on Brazilian external assets and liabilities
  - ❑ Websites and magazines specialized in business groups info
  - ❑ Contact with the financial institution responsible for the FX contract
  - ❑ Direct contact with the resident party in the FX contract

## Compilation mechanics

- ❑ Dibap (compiling external sector statistics): 19 people, but there are much more human resources, from CBB, helping the compilers:
  - ❑ Desig (bank supervision): monitoring foreign exchange market
  - ❑ Dereg: regulation in the foreign exchange market
  - ❑ Deinf: IT Department
- ❑ The CBB must give an authorization for each institution to operate in the foreign exchange market

The screenshot shows the website of Banco Central do Brasil. The main heading is "Instituições habilitadas a operar no mercado de câmbio". Below this heading, a table lists the authorized institutions. The first row of the table is circled in red, showing "Quantidade de instituições: 207".

Código	Nome da instituição	CNPJ	Atividade
00001	BANCO DO BRASIL S.A.	00000000	BANCOS MULTIPLOS COM CARTEIRA COMERCIAL
04070	BRB - BANCO DE BRASILIA S.A.	00000208	BANCOS MULTIPLOS COM CARTEIRA COMERCIAL
57446	AGK CORRETORA DE CAMBIO S.A.	00250699	CORRETORAS DE CAMBIO
21104	CAIXA ECONOMICA FEDERAL	00360305	CAIXAS ECONOMICAS
38070	COLUNA S/A. DISTRIBUIDORA DE TITULOS E VALORES MOBILIÁRIOS	00460065	DISTRIBUIDORAS DE TITULOS E VALORES MOBILIARIOS
05739	BANCO CETELEM S.A.	00558456	BANCOS MULTIPLOS COM CARTEIRA COMERCIAL
57466	PLANNER CORRETORA DE VALORES S.A.	00806535	CORRETORAS DE TITULOS E VALORES MOBILIARIOS
37972	BANCO BM&FBOVESPA DE SERVIÇOS DE LIQUIDAÇÃO E CUSTÓDIA S.A.	00997185	BANCOS COMERCIAIS
07747	BANCO RABOBANK INTERNATIONAL BRASIL S.A.	01023570	BANCOS MULTIPLOS COM CARTEIRA COMERCIAL
05748	BANCO COOPERATIVO SICREDI S.A.	01181521	BANCOS COOPERATIVOS
07752	BANCO BNP PARIBAS BRASIL S.A.	01522368	BANCOS MULTIPLOS COM CARTEIRA COMERCIAL
05399	HSBC BANK BRASIL S.A. - BANCO MULTIPLO	01701201	BANCOS MULTIPLOS COM CARTEIRA COMERCIAL
07757	BANCO KEB DO BRASIL S.A.	02318507	BANCOS COMERCIAIS
07860	BANCO MORGAN STANLEY S.A.	02801938	BANCOS MULTIPLOS COM CARTEIRA COMERCIAL
08493	TREVISOR CORRETORA DE CAMBIO S.A.	02992317	CORRETORAS DE CAMBIO
32442	HIPERCARD BANCO MÚLTIPLO S.A.	03012230	BANCOS MULTIPLOS COM CARTEIRA COMERCIAL
08578	BANCO J. SAFRA S.A.	03017677	BANCOS MULTIPLOS COM CARTEIRA COMERCIAL
08932	AVIPAM CORRETORA DE CAMBIO LTDA.	03443143	CORRETORAS DE CAMBIO
09239	FITTA DISTRIBUIDORA DE TITULOS E VALORES MOBILIARIOS S.A.	03512293	DISTRIBUIDORAS DE TITULOS E VALORES MOBILIARIOS

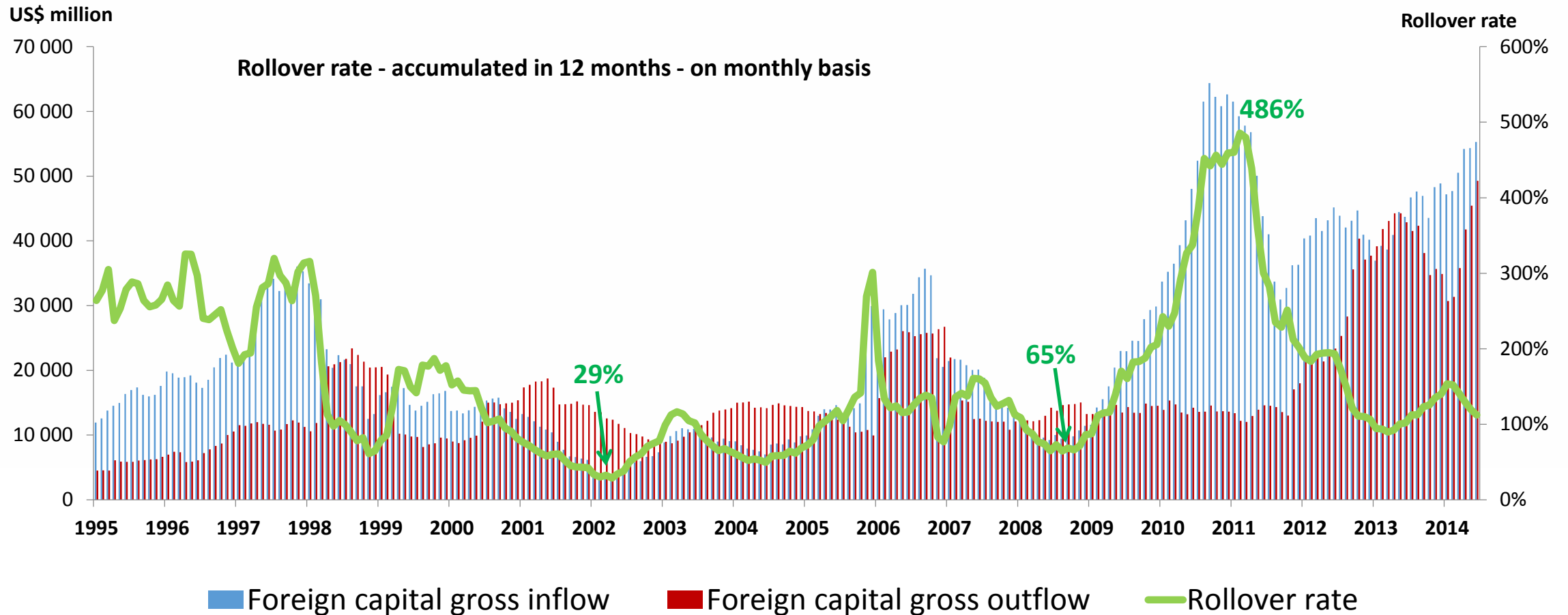
## BPM6 Issues and capital flows

### Some advantages of the Brazilian ITRS

- ❑ Granularity (transaction by transaction)
  - ❑ Allow to check the quality
  - ❑ Cross-check with other systems (register of foreign capital and its income)
  - ❑ Using the details and desegregation of the codes, conversion to BPM6 is easier
- ❑ High-frequency data (daily) and timeliness (daily) are very efficient to design exchange policy and other economic policies. Provision of liquidity in foreign currency in 2009 and implementation of IOF tax over foreign capital were examples
- ❑ Despite of the BPM6 recommendation to compile “net acquisition of financial assets” and “net incurrence of liabilities”, Brazilian BoP does not derive flows from the stocks, and will remain showing the gross flows, as “disbursements” and “amortizations”, in the financial account

## BPM6 Issues and capital flows

- Rollover rate = gross inflows / gross outflows (loans and debt securities in the international market)
- If rollover rate = 100%, net inflows are zero, but the turnover can be US\$1 million (and the market is frozen), or US\$100 billion, as in 2011, for Brazil



## BPM6 Issues and capital flows

### Some disadvantages of the Brazilian ITRS (and how to overcome)

- ❑ A minor part of the non-cash transactions are covered by ITRS. In the process of the BPM6 implementation, some of these issues were addressed:
  - ❑ Reinvested earnings (solution: surveys)
  - ❑ Income on debt securities issued in the domestic market and denominated in domestic currency (solution: custodian information)
- ❑ Cost of reporting
  - ❑ Sunk costs, the system was implemented decades ago. The IT platform was updated in 2012, and the banks and enterprises are used to run their business in this way
  - ❑ From the companies point of view, these are settlements of FX transactions, and not report to the statistics compilation
  - ❑ The information regarding each settlement would exist even without the FX system, for internal purposes



## BPM6 Issues and capital flows

### Reinvested earnings

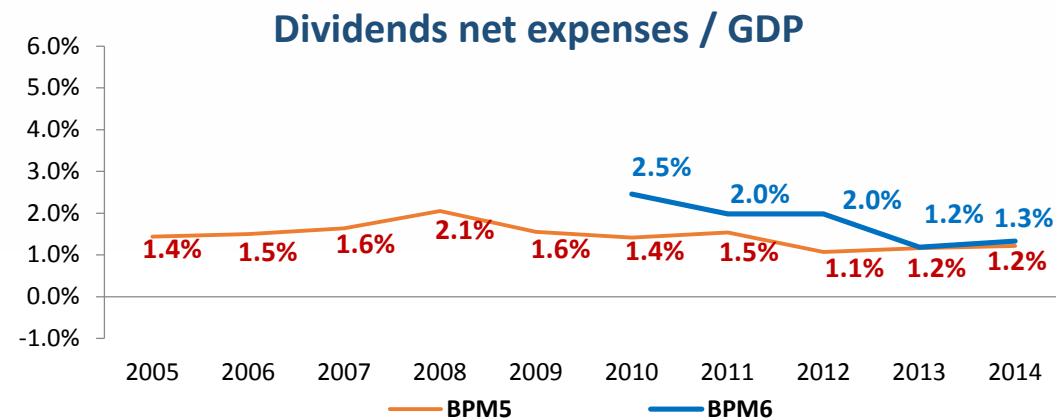
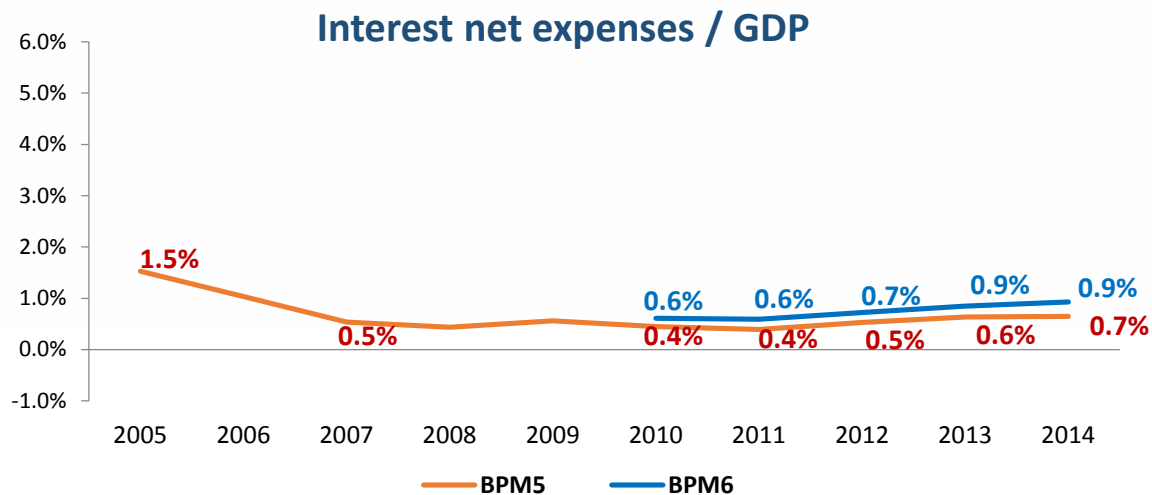
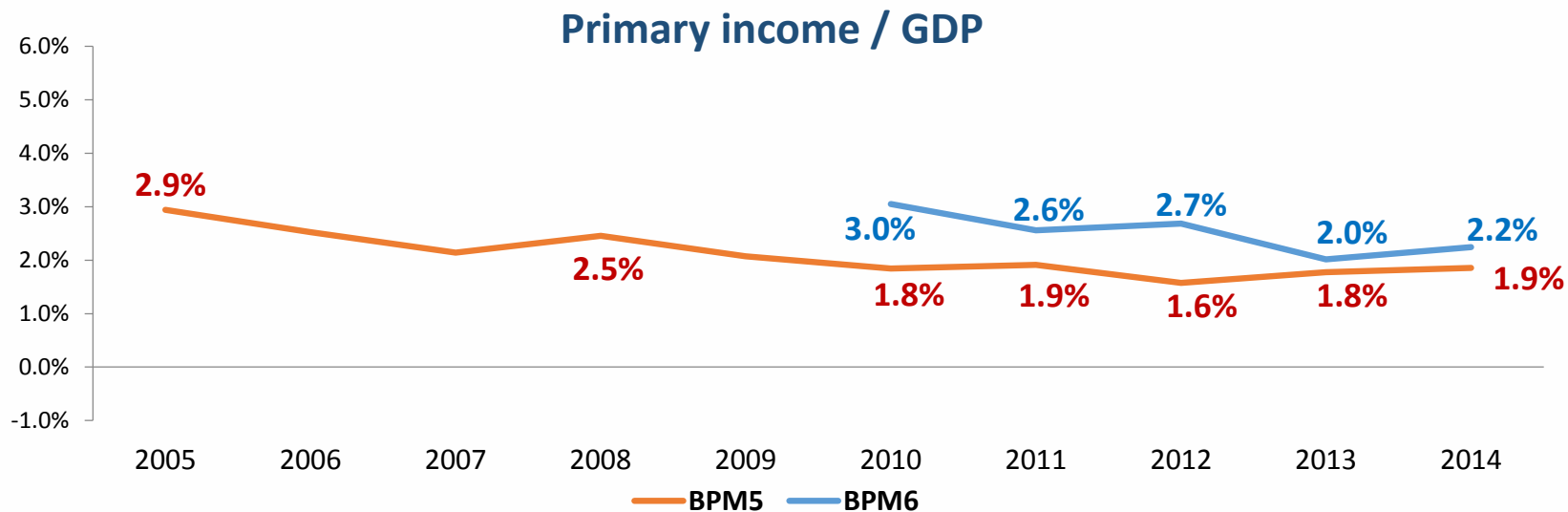
- ❑ The data source was lost in 1998
- ❑ Two surveys, Brazilian Capital Abroad (CBE) and Census of foreign capital, were modified and validated in order to produce the information requested
- ❑ Challenges in the new sources compared to other ones:
  - ❑ Frequency: annual or quarterly, not monthly
  - ❑ Timeliness: +5 months to credits; +9 months to debits
- ❑ Therefore, estimations are needed and the pattern of revision will be much different than other accounts
- ❑ Explain to domestic public: i) these are not transactions in the foreign exchange market; ii) this particular deficit in the current account is fully financed
- ❑ In 2014 reinvested earnings for enterprises in Brazil reached USD10.7 billion (net direct investment – liabilities added up USD96.9 billion)

## BPM6 Issues and capital flows

### Interest expenses – debt securities issued in the country

- ❑ All the settlements in the domestic market are in BRL, by law
- ❑ From 2005 until 2015 the portion of domestic public debt denominated in BRL in the domestic market, and held by non resident investors rose from less than 1% to around 20%, reaching more than USD150 billion
- ❑ Before BPM6 implementation, the BoP registered the payment of interest on these securities just when the resources were converted from BRL to foreign currency in the foreign exchange market.
- ❑ More than 90% of the interest paid in BRL were reinvested in another securities in the domestic market
- ❑ We added the Selic (custodian system) as data source to the payment of interest in BRL
- ❑ This compilation process remains considering cash basis
- ❑ The stock of domestic securities held by nonresidents was already a liability in the Brazilian IIP, but now is also classified as external debt

### BPM6 Issues

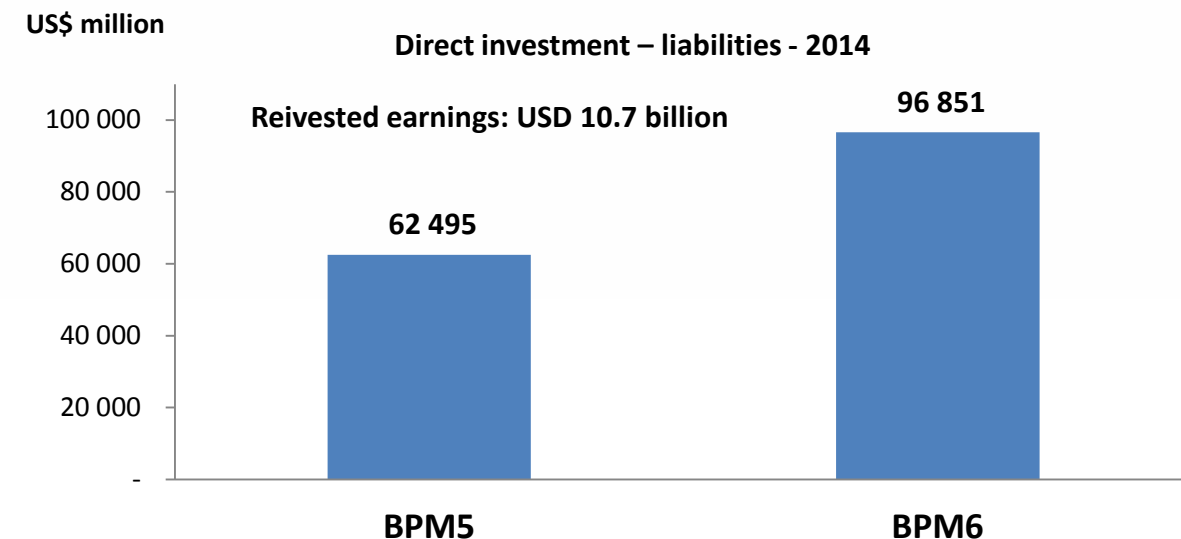
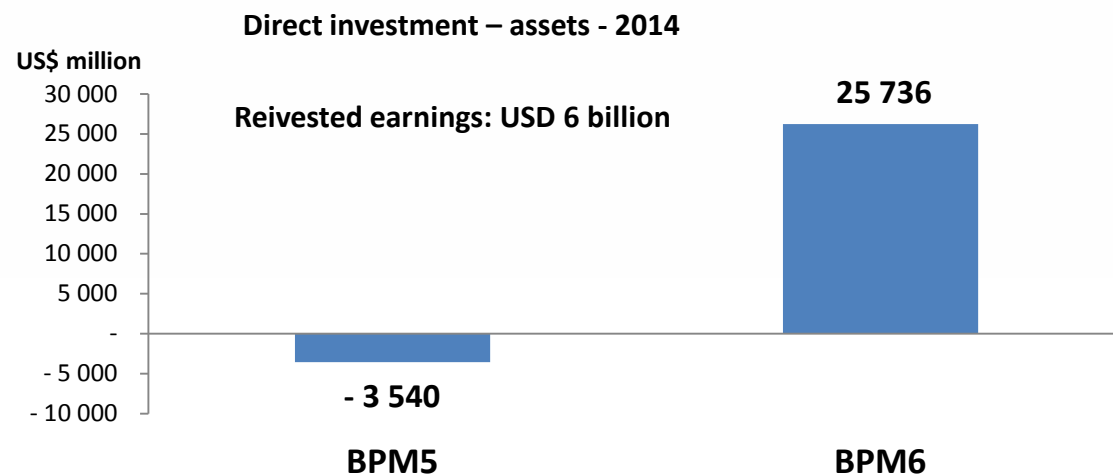


<sup>1/</sup> Preliminary and estimated data for BPM6, from 2010 to 2013

## BPM6 Issues and capital flows

### Direct investment:

- Looking at the liquidity after financial crisis of 2008-09, the headquarters in Brazil used its affiliates abroad to issue debt securities in the international markets. The receipt of the issuing was transferred to Brazil, arising an intercompany loan
- According to BPM5 and the directional principle, the transaction was recorded as a liability reducing the asset
- Following BPM6 and the asset/liability principle, however, the transaction must be recorded as an increase of direct investment - liability



## BPM6 Issues and capital flows

- ❑ BCB released methodological notes to describe the main changes adopted in the context of BPM6
- ❑ The BPM6 changes and the non BPM6 changes were mixed comprising an unique package



The screenshot shows the website of Banco Central do Brasil. At the top, there is a navigation bar with the text "BRASIL" and "Acesso à informação". Below this, there are links for "International Cooperation", "FAQ", "Glossary", "Site Map", "Contact us", "Links", and "Português". The main header features the Banco Central do Brasil logo on the left and a 50th anniversary logo on the right with the text "Cuidando dos valores do Brasil". A search bar is located on the right side of the header. Below the header, there is a navigation menu with links for "About us", "Inflation targeting", "Economy and finance", "Exchange and Foreign Capital", "National Financial System", "Supervision", and "The Brazilian Payments System". The main content area displays the title "Balance of Payments and International Investment Position Manual – Sixth Edition (BPM6)" in red. Below the title, there is a list of links for various documents, including the Statement, Methodological Note nr.1, Methodological Note nr.2, Methodological Note nr.3, and Frequently Asked Questions (FAQ) on Conversion from BPM5 to BPM6. At the bottom of the page, there is a footer with links for "Help", "Privacy", and "All rights reserved Banco Central do Brasil©".

## BPM6 Issues and capital flows

### BPM6 Project - 2011 to 2015:

- ❑ The BPM6 implementation project took formally two years, but some earlier actions were essential. For example, from 2011 to 2013, new exchange contract codes for the nature of the operations were defined (this work involved different departments of the CBB, including statistics, supervision and regulation):
  - ❑ Development of a new DW and new accounts structure on BPM6 basis
  - ❑ Data sources improvement: IBGE (Brazilian national statistical office), and other governmental and private institutions
  - ❑ Experiences from other countries: technical visits (France and Italy) and seminars
  - ❑ New format of the *External Sector Press Release*
  - ❑ Communication to internal and external audiences:
    - ❑ Officers and policy makers
    - ❑ Journalist: lessons on the new standard
    - ❑ Market: seminar with analysts (expected on second half of 2015)
    - ❑ Universities: seminar with researchers (expected on second half of 2015)

## BPM6 Issues and capital flows

- ❑ Backcast the series is the current main challenge faced by compilers
- ❑ “Real” data x statistical models and length of the series
- ❑ Between September 2015 and February 2016 we expect to publish the time series backdated until 1947 (annual basis), 1979 (quarterly basis) and 1995 (monthly basis). So, the review will be more accurate as more recent the year

**Thank you for your attention**

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IFC Satellite meeting at the ISI World Statistics Congress on “Assessing international capital flows after the crisis”

Rio de Janeiro, Brazil, 24 July 2015

## FDI statistics excluding special purpose entities, capital-in-transit and financial restructuring – Hungarian practice<sup>1</sup>

Beata Montvai, Magyar Nemzeti Bank

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<sup>1</sup> This paper was prepared for the meeting. The views expressed are those of the author and do not necessarily reflect the views of the BIS, the IFC or the central banks and other institutions represented at the meeting.



# FDI statistics excluding special purpose entities, capital-in-transit and financial restructuring – Hungarian practice

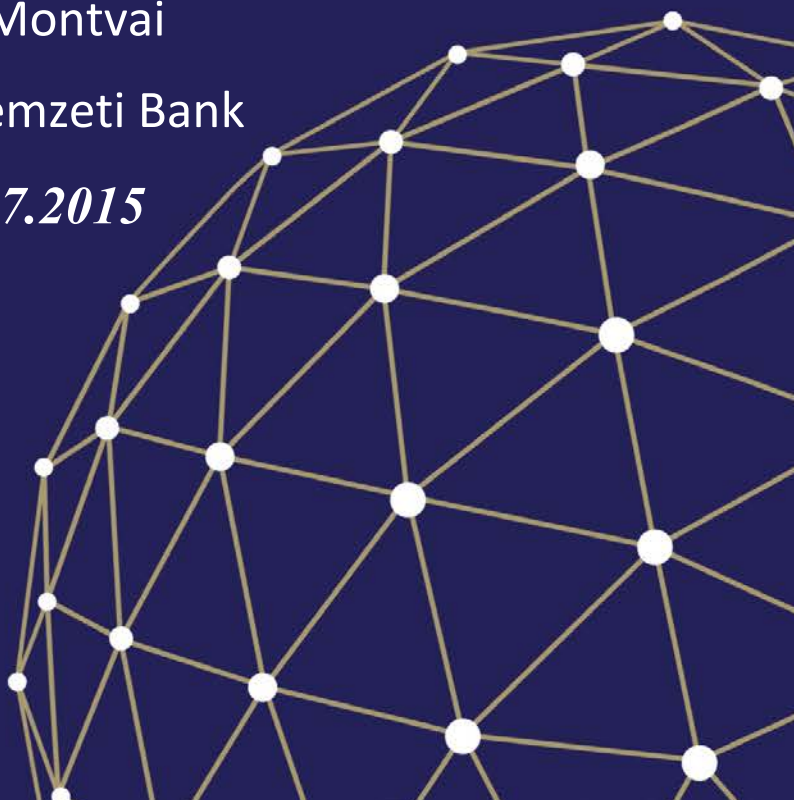
BCB / CEMLA / IFC Satellite meeting at the ISI 60th World Statistical Congress

“Assessing international capital flows after the crisis”

Beáta Montvai

Magyar Nemzeti Bank

*24.07.2015*



## *Summary*

***Globalisation may have significant distortive effects on the national statistical data and in order to avoid distortions, even data collections, processing, publications- and interpretation - of national FDI-statistical publications need to be supplemented. The MNB in its practice has identified and has been published FDI statistics supplemented with the following elements:***

- separate BOP compilation for Special purpose entities (SPE)
- separate publications of capital in transit transactions and
- asset portfolio restructuring transactions

***The new editions of international guidelines, especially the OECD Benchmark Definition on FDI 4<sup>th</sup> edition (BMD4) gives new measures of foreign direct investment. These special effects have appeared in practice preceding the implementation of international guidelines in Hungary, so we had to find some way to handle these distortions before the international consensus and practices became well-known. In order to improve the quality of BoP and FDI statistics and to reduce the distortive elements of FDI statistics hereby the findings and good practices applied in Hungary are presented in this paper.***

### **1. Background**

Hungary is an open economy in Central Europe. Its territory is 93 thousand square kilometre /359 thousand square miles with 10 million inhabitants. The annual GDP is about 100 billion euros fairly stable in the last 7 years. Hungary is a member of the IMF and World Bank as of 1982, OECD since 1996 and the European Union since 2004. By our integration into the international distribution of labour, foreign trade and foreign direct investment plays an increasingly important role in Hungary's economic activity. Foreign direct investment (FDI) is a key driver of international economic integration. The weight of FDI stock compared to GDP varies by countries. The significance of FDI activity in Hungary by OECD countries is shown in Chart 4 and 5 in Annex I.

***The source of FDI data are Hungarian BOP statistics. BOP statistics data with the same methodology (BPM6 which is consistent with BMD4) is available since 1995.***

***Chart1 shows that between 1995 and 2006 inward FDI had dynamically expanded (reaching 50 billion euros by 2005) and significantly exceeded outward FDI (almost non-existent). After 2006 the level of inward and outward stock remained stable, the slight further expansion is due to the later detailed new distortive effects, the stability of net FDI shows that no further expansion can be seen in the last decade. The development of net FDI for SPEs (near zero) shows well, that in net terms they have no investment added to the Hungarian economy.***

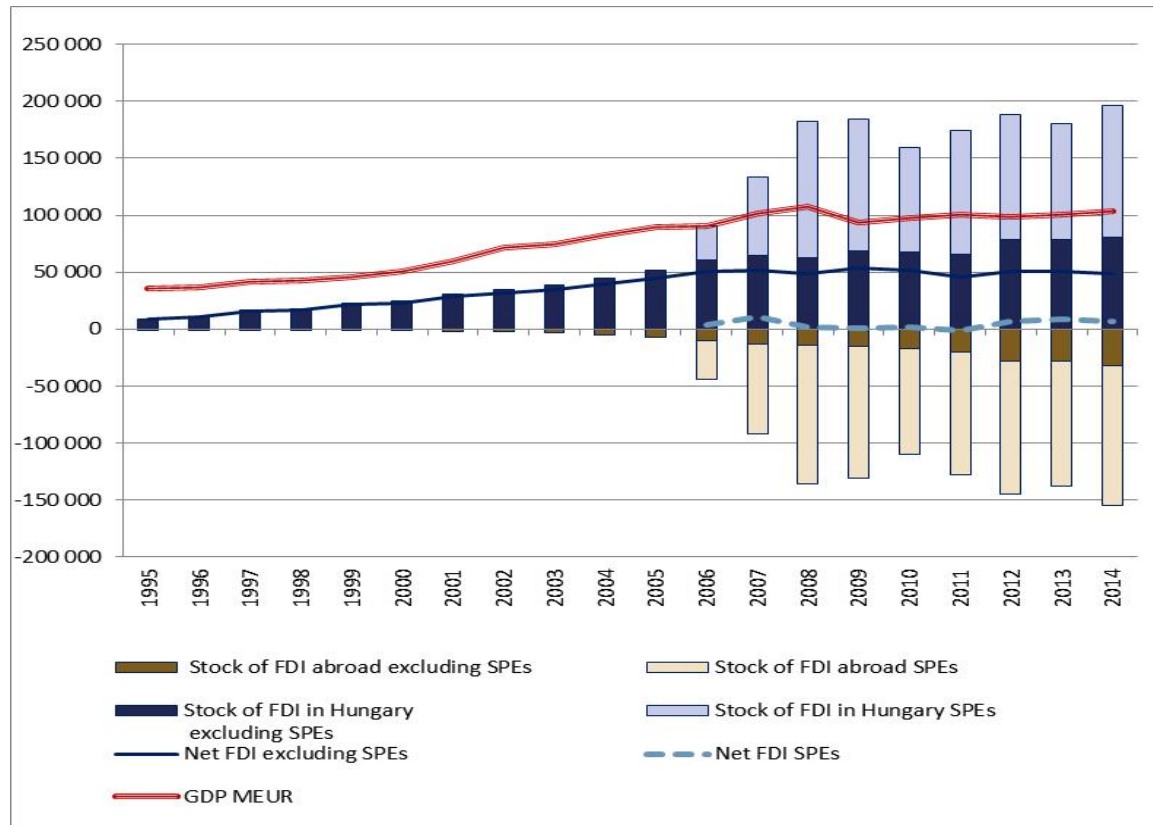
In line with BPM6, Special purpose entities have been separated in BOP statistics already from 2006, well before the implementation of the new OECD and IMF guidelines in the member states of the European Union (2014).

This presentation describes details of our recent and present practice, including recent developments in separating the new distortive effects in publications of FDI flows.

Chart1.

Hungary: GDP, Inward and outward FDI stocks of SPEs and excluding SPEs

Euro million



## 2. Characteristics of FDI statistics

### 2.1. 1999-2005: Off-shore companies

Between 1999 and 2005 activities not directly effecting economic activities in Hungary were experienced with off-shore companies. Pass through flows were recorded on a net basis.

At the end of nineties special huge transactions had appeared in the magnitude of billions of euros - arriving and leaving the country in a short period of time not affecting the Hungarian economy. Off-shore companies were defined by an administrative concept; we had registry information based on administrative data source. At that time treating off-shore companies was a compilation issue; their statistical treatment was based on considerations of their types of activities. One was the pass-through activity: these off-shore enterprises were only passively rechannelling huge funds (although conversion of financial instruments: mainly FDI equity [inflow] vs. debt instruments (loan) [outflow]).

For that type of entities we applied the net recording of their transactions as FDI equity in Hungary. At that time positions were calculated as cumulated net flows.

The other type of off-shore entities were trading with property rights. We applied no difference in recording their transactions compared to „normal” enterprises. There were no separate set of data published on off-shore companies.

As of 1 January 2003 to the Corporate Taxes Law was amended - enterprises with off-shore status no longer could be established in Hungary. The existing off-shore firms had to be transformed into normal businesses by 1 January 2006 at the latest. Some off shore companies had left Hungary. However there were some newly established companies with pass-through activity but not registered as off-shore companies. We had to find definition for identifying pass-through entities.

In the meantime the revision of the international standards (BPM6 and BD4) had started and showed that Hungary is not alone: other countries face similar problems. These pass through enterprises are called in the international guidance special purpose entities.

## *2.2. From 2006: Special Purpose Entities in Hungary*

What are the characteristics of special purpose entities?

Foreign direct investment (FDI) is a key element in the rapidly evolving international economic integration. Due to the widening globalisation, multinational enterprises (MNEs) become the key players of cross border investments. In order to optimise their profitability they establish complex structures of enterprises including special purpose entities. Examples: financing subsidiaries, conduits, holding companies, shell-companies. Different types of SPEs have been created worldwide. Thus there is no internationally agreed definition of SPE, but there are common features elaborated in OECD. (OECD BMD4, p 188):

An enterprise is usually considered as an SPE if it meets the following criteria:

- i) The enterprise is a legal entity,
  - a) Formally registered with a national authority; and
  - b) subject to fiscal and other legal obligations of the economy in which it is resident.
- ii) The enterprise is ultimately controlled by a non-resident parent, directly or indirectly.
- iii) The enterprise has no or few employees, little or no production in the host economy and little or no physical presence.
- iv) Almost all the assets and liabilities of the enterprise represent investments in or from other countries.
- v) The core business of the enterprise consist of group financing or holding activities, that is – viewed from the perspective of the compiler in a given country – the channelling of funds from non-residents to other non-residents. However, in its daily activities, managing and directing local operations plays only a minor role.

The SPEs in Hungary are resident enterprises basically performing their activities abroad, and their connection with the domestic economy is minimal. They are primarily involved in the intra-group intermediation of financial resources, but in fact, their parent companies decide the direction and the amount of the funds flowing through them. They are not targets of direct investment; they participate in the allocation of funds within the enterprise group through different countries. Their net investment registered through various financial instruments is close to zero over longer periods of time. However, large amounts are moved through them, and thus their transactions

inflate particularly the assets and liabilities of the financial account, which distorts the statistics describing the real economic and financial processes of the national economy.

The major issue is, how to reconcile the two competing principles:

1. SPEs are resident entities, they should be covered by BoP and IIP statistics regardless of their specificities, however
2. recording their transactions and positions in the core accounts highly distorts and limits the analytical power of BoP and IIP for economic analysis

For proper decision making and analysis we had been segregating transactions and positions of SPEs (segregating pass-through capital). Since 2006 there is no difference in statistical treatment of SPEs, it is a publication and interpretation issue and not a compilation one. In line with the international requirements, from January 2006 the MNB has also been preparing the balance of payments and the related international investment positions which include SPEs on a gross basis, to enable the analysis of international data by mirror statistics. At the same time, the balance of payments and international investment position of Hungary can also be analysed from an economic aspect based on data excluding SPEs. In its statistical publications and reports, the MNB analyses data excluding SPEs.

*Activities and characteristics of SPEs are changing in time*

We have experienced that the characteristics of SPEs can change not only by countries but in time in the same country, in Hungary.

- The early pattern was „incoming FDI equity flow/ and direct loan extension”.
- after 2005 this pattern changed to establishment of non-resident branch financed loan of a related company
- Indirectly (through a resident affiliate) having equity stake in a non-resident enterprise
- An enterprise previously providing services sets up a non-resident branch and continues its business through the branch

The changing activity and characteristics of enterprises might result in a need for statistical reclassification from/into SPEs.

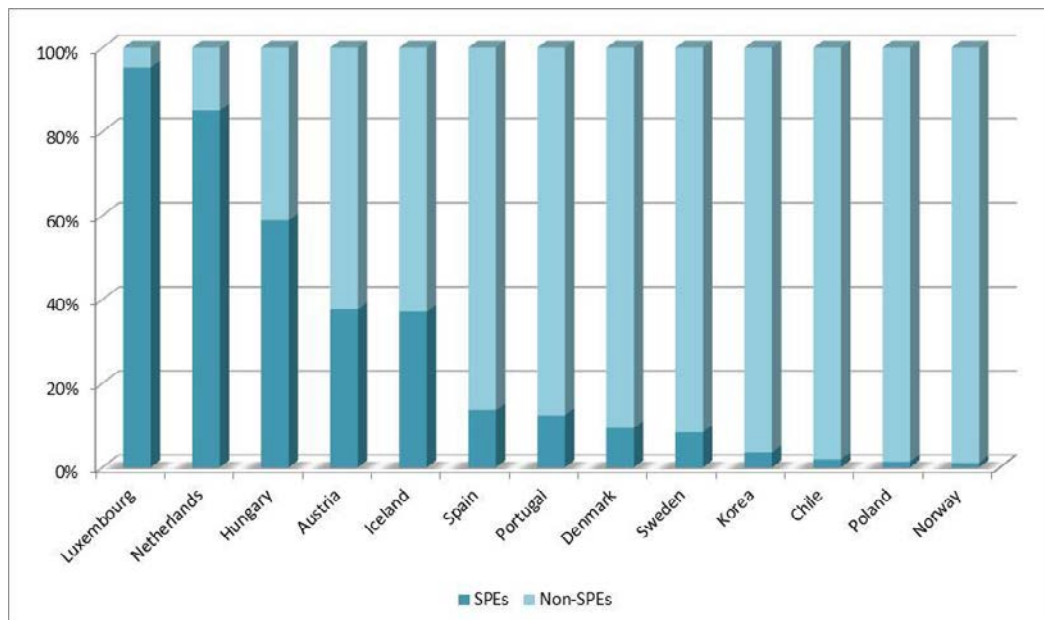
SPEs are defined jointly by the Hungarian Statistical Office (HCSO) and the MNB. (The maintenance of SPE registry is a joint effort, too). The source of information is the BOP data collection survey system, the corporate tax declarations and data collection surveys for goods and services in the HCSO.

Before the implementation of BPM6 Hungary has continuously experienced the *distortive effects of data including SPEs published in the international institutions*. Therefore we have made initiatives in order to achieve, that

- all affected countries report their relevant statistics *excluding and including* SPEs, and
- all international organizations publish both national data
- draw attention to the confusing distortion of data including SPEs, that they are not appropriate for analyzing country data, interpretation of economic trends, debt indicators, etc.
- support the initiatives for a common register of SPEs
- separate SPEs' data within the Financial Account Statistics in a specific sector breakdown.

Despite our efforts after the implementation of BPM6/BMD4/ESA2010 in more international organizations' database BOP data are available only including SPEs. However we are aware that *only a few countries are seriously affected with these issues.* (See Chart 2) The major affected countries are Luxemburg, the Netherlands and Hungary, and partly Austria and Iceland (within the OECD). They are all engaged in the importance of publishing FDI data excluding SPEs.

Chart2. Share of FDI into SPEs and non-SPEs at end-2014



Source: OECD International Direct Investment Statistics database

### 2.3. New distortive effects in 2010's (capital in transit and restructuring of asset portfolio)

Within a multinational corporation, mixed groups can be formed from SPE and non-SPE affiliates in a country. Furthermore, there are companies that perform real economic operations and therefore cannot be classified as SPEs, however at the same time, they also take part in intermediary activities and their foreign parents pass through them large amounts from one foreign subsidiary to the other. Segregating capital transiting through operational affiliates of multinational enterprises are in the Research Agenda of the OECD Working group of International Investment Statistics, there are no internationally available guidelines for their treatment. In Hungary, we call these transactions *capital in transit*, passing through resident subsidiaries also engaged in real economic operation. The difficulty is that beside enterprise approach, *transactions have to be investigated.* We have identified *two types of activities that resulting huge transactions without any effect on the domestic economy:* one is capital in transit, the other is *restructuring of asset portfolios*, when transactions are related to a financial restructuring of some affiliate of MNEs. Besides capital in transit, restructuring of asset portfolios has similar effects on FDI flows (sharp increase and decrease in flows), these impacts on statistical data are very similar to that of SPEs.

(i) *National practice in Hungary for separating capital in transit*

At the end of 2011 huge capital in transit transactions have appeared within the scope of non-SPE companies in which the inflow and outflow took place within the same quarter. As mentioned above, there is no general international methodological guidance on how to treat these special transactions. However the magnitude of these transactions made it necessary to separate them, since these transactions distorted our statistics excluding SPEs very significantly. In the second half of 2011, the MNB launched a project exploring the phenomenon of capital in transit, with the purpose of identifying and separately presenting them. Capital in transit transactions were identified during the monthly compilation of balance of payments. Typically, these large transactions are completed within one month.

This *micro-level approach*, checking every company individually, is possible in Hungary because the relevant scope of companies only includes 10- 20 enterprises and there are less than 10 such transactions quarterly. At the same time, the size of the transactions is sometimes one magnitude larger than the value of regular transactions, which needs to be explained to users. As a result of this work, since September 2012 capitals in transit transactions have been presented in a separate table on the website of the MNB, retrospectively to 2008. Furthermore, in order to make the direct investment data more interpretable, FDI flows excluding capital in transit are published separately.

We refer to capital in transit, when a resident, non-SPE company belonging to a multinational company group is also active in passing through capital within the enterprise group, in addition to its normal activities (production, service). This activity increases the total value of both capital inflows and outflows in the statistics. Similarly to the activities of SPEs, this flow of capital has no effect on the economy of the given country. As the activities of SPEs, capital in transit transactions are usually FDI, but can take the form of portfolio investment or other investment.

Capital in transit is usually related to special function(s) of Hungarian affiliates of multinational enterprises. It is important that the foreign owner decides if the special activity is performed through the affiliate in Hungary or third countries. In defining pass through transactions the activity and the content shall be considered rather than the form of transaction. To recognize a capital in transit or asset portfolio restructuring transaction it helps that the volume of inflow and outflow is typically same or similar within a specific (short) period.

*We consider* the following pairs of transactions as *capital in transit transaction*:

Inflows	Outflows
Equity investment by non-residents (which may be direct investment, portfolio investment)	Equity investment abroad
Equity investment by non-residents	Lending by Hungarians to non-resident members of the company group
Loan received from parent/other non-resident members of the company group	Equity investment abroad
Loan received from parent/other non-resident members of the company group	Lending to a non-resident subsidiary/member of the company group

***We do not consider*** pairs of transactions generated by portfolio reclassification and offsetting arrangements of claims/liabilities as capital in transit, since these are reclassifications of the asset or liability side portfolio of the resident enterprise:

Inflows	Outflows
---------	----------



conversion of a loan debt/claim to capital injection or repayment of a loan debt	claim from capital injection
settlement of accounts receivable	accounts payable
The flow of dividends from a non-resident subsidiary	to the parent

In Hungary capital in transit transactions are identified on the basis of company reporting during the compilation of the monthly or quarterly balance of payments data.

*(ii) Restructuring of the asset portfolio*

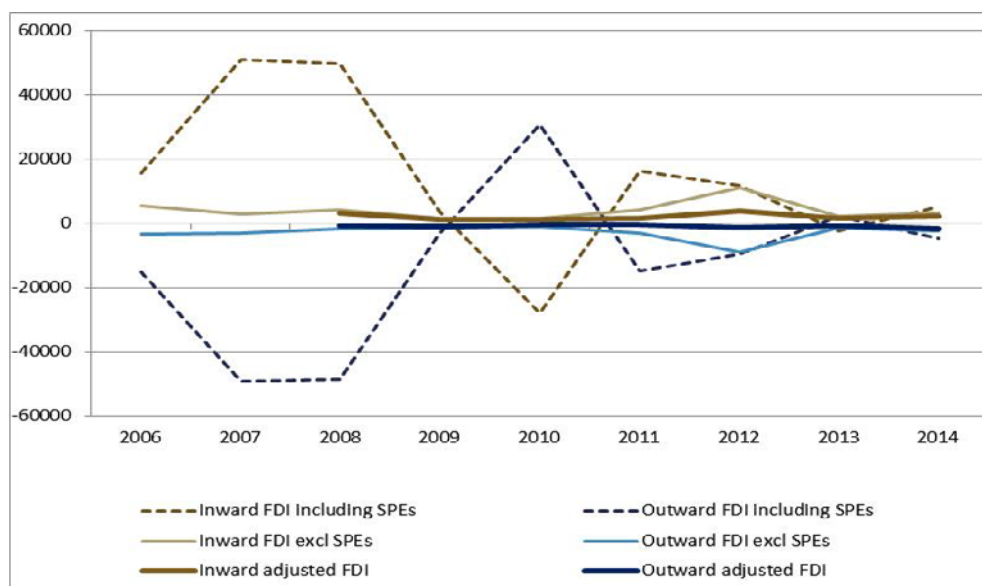
If a multinational corporation realigns its asset portfolio in a cross-border fashion: liquidating one subsidiary, establishing a new subsidiary, contributing the assets of one subsidiary into another, etc., then extremely high capital withdrawal and equity investment transactions must be recorded in the balance of payments without any real capital withdrawal or equity investment taking place into the country. Therefore, together with capital in transit, we also classify these transactions as transactions to be separated. In order to easier interpret the direct investment transactions data, we publish the data on foreign direct investment transactions [excluding capital in transit and asset portfolio restructuring](#). (See the link.)

*(iii) Adjusted direct investment flows*

In Hungary, the effect of capital in transit and asset portfolio restructuring was especially significant in 2012. However, its magnitude varies annually. Especially for the users, interpreting FDI statistics data makes it especially important to adjust the data for capital in transit and asset portfolio restructuring. The magnitudes of these differences are shown on Table 1 and Chart 3. All including SPEs, excluding SPEs, adjusted FDI data are available in the [MNB website](#) (See the link). Country and activity break down are also available for the adjusted data.

Chart3. FDI flows data

Euro million



**Table 1.** Hungary: FDI flows including SPEs, excluding SPEs and excluding capital in transit and asset portfolio restructuring

Euro million	2006	2007	2008	2009	2010	2011	2012	2013	2014
<b>Inward FDI including SPEs</b>	15 709	51 015	49 781	3 539	-27 881	16 245	11 624	-2 329	5 108
<b>Outward FDI including SPEs</b>	15 340	49 204	48 732	3 024	-30 793	14 872	9 532	-2 159	4 557
<b>Inward FDI excl SPEs</b>	5 454	2 852	4 192	1 477	1 668	4 137	11 158	2 300	3 106
<b>Outward FDI excl SPEs</b>	3 502	3 138	1 781	1 324	906	3 165	9 070	1 378	2 488
<b>Inward adjusted FDI</b>			3 087	1 289	1 232	1 557	3 916	1 696	2 277
<b>Outward adjusted FDI</b>			676	1 136	261	511	1 454	774	1 659

The first two lines are the internationally available FDI flow data in the IMF and Eurostat database. Data excluding SPEs are available in the OECD and UNCTAD database. Adjusted FDI data are available only on the MNB website.

*(iv) Filtering out the distortive effects from the stock data - future challenge*

International definition of stocks of capital in transit is not available, yet (income effect, revaluations, etc.). However, Switzerland and Austria apply macro estimation to identify the passing through part of FDI. They split inward and outward FDI, if the ultimate investor resident or non-resident. Inward FDI with resident ultimate investor is considered as round tripping (a type of capital in transit), and the outward FDI with non-resident ultimate investor is considered as the activity of multinationals, and so, as capital in transit. It is an easy practice to make a robust estimation (if the FDI stock according to the ultimate investor is available.)

Our case by case method in identifying the distortive effects from the transactions is hardly could be applied for stocks. Our data processing system is a closed system based on reported data. Adjusted enterprise data at present is supplemental information, not part of the processing system, however the country and activity breakdown of stocks are distorted significantly with the stocks of the enterprises including capital in transit.

### ***3. Conclusive remarks***

- Globalisation may have significant distortive effects on the national statistical data collection, processing, publication - thus interpretation - of national FDI-statistical publications.
- The weight of FDI compared to GDP significantly varies among countries and in time. In those countries where the role and effects of FDI is high, more detailed FDI statistics are needed inward and outward FDI alike.
- In order to improve the quality of these statistics and to reducing the distortive elements of FDI statistics we have developed a special practice in Hungary. Besides separating Special Purpose Enterprises as required in BMD4/ BPM6, we found informative/necessary for our users to publish detailed data on capital in transit and asset portfolio restructuring transactions as well as on adjusted direct investment flows.

**Annex I.**

**The weight of FDI compared to GDP varies by countries. The country breakdown of inward FDI to GDP is shown in Chart 4 and the weight of outward FDI to GDP is shown in Chart 5 for OECD countries. The data of Hungary, European Union and OECD-total are highlighted to show the significance of FDI activity in Hungary.(FDI data are excluding SPEs)**

Chart 4

Inward FDI stocks as % of GDP at the end 2014

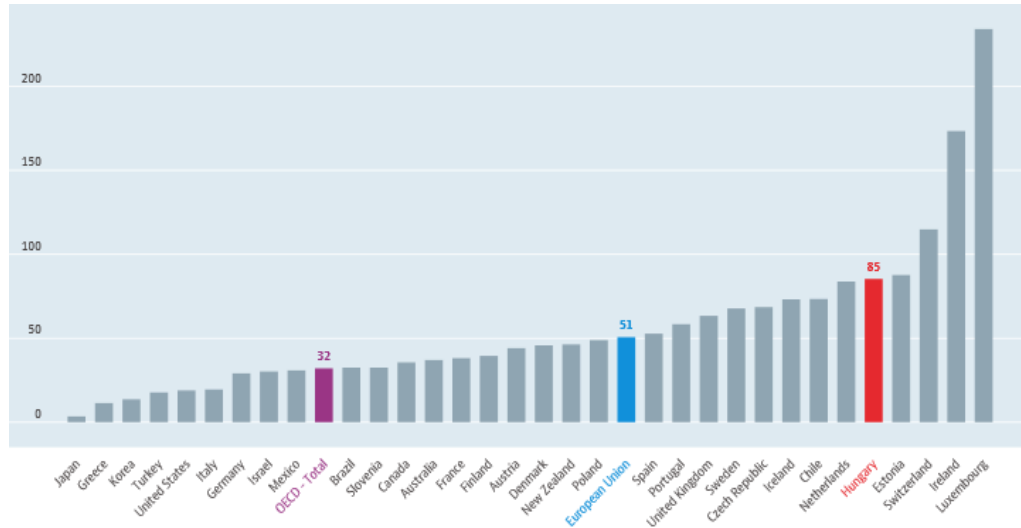
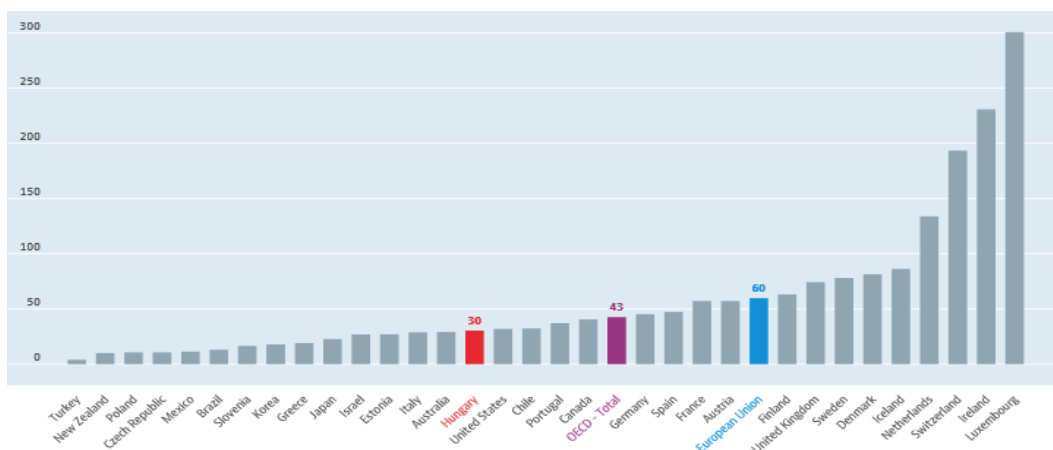


Chart 5

Outward FDI stocks as % of GDP at the end 2014



Source: <https://data.oecd.org/fdi/fdi-stocks.htm>

IFC Satellite meeting at the ISI World Statistics Congress on *"Assessing international capital flows after the crisis"*  
Rio de Janeiro, Brazil, 24 July 2015

## From local to global: assessing financial positions on a consolidated nationality basis<sup>1</sup>

Bruno Tissot,

Bank for International Settlements and Irving Fisher Committee on Central Bank Statistics

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<sup>1</sup> This presentation was prepared for the meeting. The views expressed are those of the author and do not necessarily reflect the views of the BIS, the IFC or the central banks and other institutions represented at the meeting.

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## From local to global: assessing financial positions on a consolidated nationality basis

Bruno Tissot

Head of Statistics and Research Support, BIS  
& Head of Secretariat, Irving Fisher Committee on Central Bank Statistics (IFC)

*Session 3: Should residence-based data be completed by nationality information?*

# Highlights

1. Information needs
2. Accessing group-level information
3. Use of consolidated data: *can it add value?* – the BIS experience



1. Information needs: a global approach for assessing exposures?
  - A. Concept of Exposure
  - B. The Data Gaps Initiative (DGI)
  - C. Can the residency-based approach of the national accounts be complemented?
  - D. A framework for assessing financial positions & exposures





## 1.A – Concept of exposure

- **Selected quotes** (Investopedia)

- *"Financial exposure is the amount that one stands to lose in an investment".*
- *"Market exposure, also known as "exposure," represents the amount an investor can lose from the risks unique to a particular investment."*
- *"Credit Exposure is the total amount of credit extended to a borrower by a lender. "*

- **BIS banking statistics**

- In contrast to the country where the actual counterparty resides, the country of ultimate risk is defined as the country in which the guarantor of a financial claim resides and/or the country in which the head office of a legally dependent branch is located.
- Transfer of risk: from the country of the immediate risk to the country of "ultimate risk".



## 1.B – The Data Gaps Initiative (DGI)

- Crisis highlighted the lack of data on cross-border exposures
  - *"Data deficiencies were mostly in relation to cross-border transactions"*
  - *" Onshore corporates (...) used offshore entities to raise finance and provide implicit guarantees, and this was unknown to policy makers" ...*
  - *"Authorities were unaware of significant corporate exposure to exchange rate derivative products because these were booked outside of their jurisdictions"*
  - *For instance, firms "acquired foreign exchange exposures through derivatives contracts booked on foreign markets"*



## 1.B – The Data Gaps Initiative (DGI) – Past...

- DGI Recommendation #13

- *"A more comprehensive approach is needed (... to) identify such cross-border exposures".*
- *"Need to address the methodological and practical issues of handling the concept of consolidation and the definition of corporate groups"*
- *"The IAG to investigate the issue of **monitoring and measuring cross-border**, including foreign exchange derivative, **exposures** of nonfinancial, and financial, corporations with the intention of **promoting reporting guidance and the dissemination of data.**"*



## 1.B – The Data Gaps Initiative (DGI) – ... and Future

- G-20 renewed interest (September 2014)
  - Update on IMF, FSB and BIS work on addressing data gaps as regards foreign currency exposures
- Further DGI-related initiative?
  - Improve the consistency and dissemination of data
  - Focus on non-bank financial and non-financial corporations
  - Cross-border exposures including through foreign affiliates and intra-group funding



## 1.C – Can the residency-based approach of the national accounts...

- System of National Accounts Framework (SNA 2008)
  - Units that are resident in a specific economic territory
  - Flow of Funds and corporates' financial positions
- Ongoing globalisation of economic activities: challenges
  - Real sector (international corporations, BoP, investment)
  - Financial sector: role of affiliates (foreign branches and/or subsidiaries)

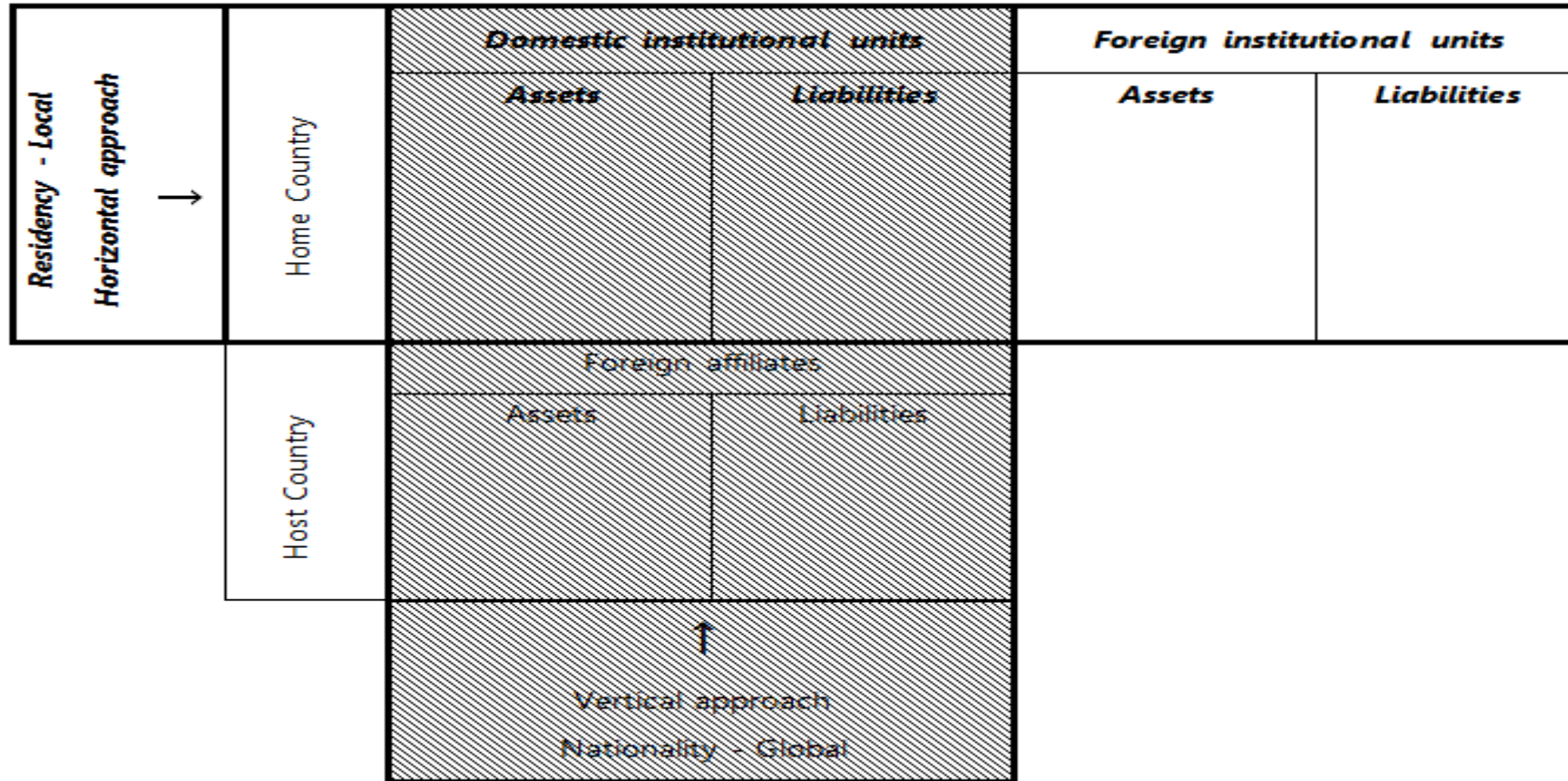


## 1.C – ... be complemented?

- Use of information on a residency basis but also on a group basis
- Nationality-based approach
  - Who makes the underlying decision?
  - Who takes on the risk?
  - Who needs to hold sufficient capital to cover global potential losses?
- Approaches are complementary



# 1.D – Framework for assessing financial positions & exposures



- Residency approach: all resident institutional units
- Nationality approach: delineates financial positions vertically



## 2. Accessing group-level information

- A. Three main approaches to group-level information
- B. Classification of economic units
- C. The concept of control
- D. Defining a corporate group
- E. Challenges





## 2.A – Three main approaches to group-level information

- Business accounting
  - Principle of global consolidation for national corporate entities
  - IFRS standards
  - But national GAAPs
- Supervisory
  - Key supervisory information distinguishes between “home” and “host” country responsibilities
  - But global financial business model increasingly includes banks and non-banks, with a mixed and evolving nationality structure
- Statistical
  - Largely based on residency data (SNA, BOP)



## 2.B – Classification of economic units

- Sectoral classification
  - Main principal economic activity
  - But need for refinement (eg shadow banks)
  - Rest of the World is treated as an aggregate
- Nationality classification
  - Institutional units need to be “associated with” or “assigned to” a particular home country
  - Cooperation amongst various home and host countries
  - Reconciliation exercises



## 2.C – The concept of control

- Business accounting
  - Control = power to govern an entity so as to obtain benefits from its activities
  - Ownership as the criterion: more than half of the voting power
  - Other elements can be considered
- Supervisory
  - Jurisdiction where is located the home country supervisor
  - Entitled to exercise consolidated supervision
- Statistical
  - (economic) ownership is a pre-condition for control
  - Foreign Direct Investment: influence-based relationship
  - Multinational Enterprises: control-based relationship
  - Head office concept (oversees & manages the units)

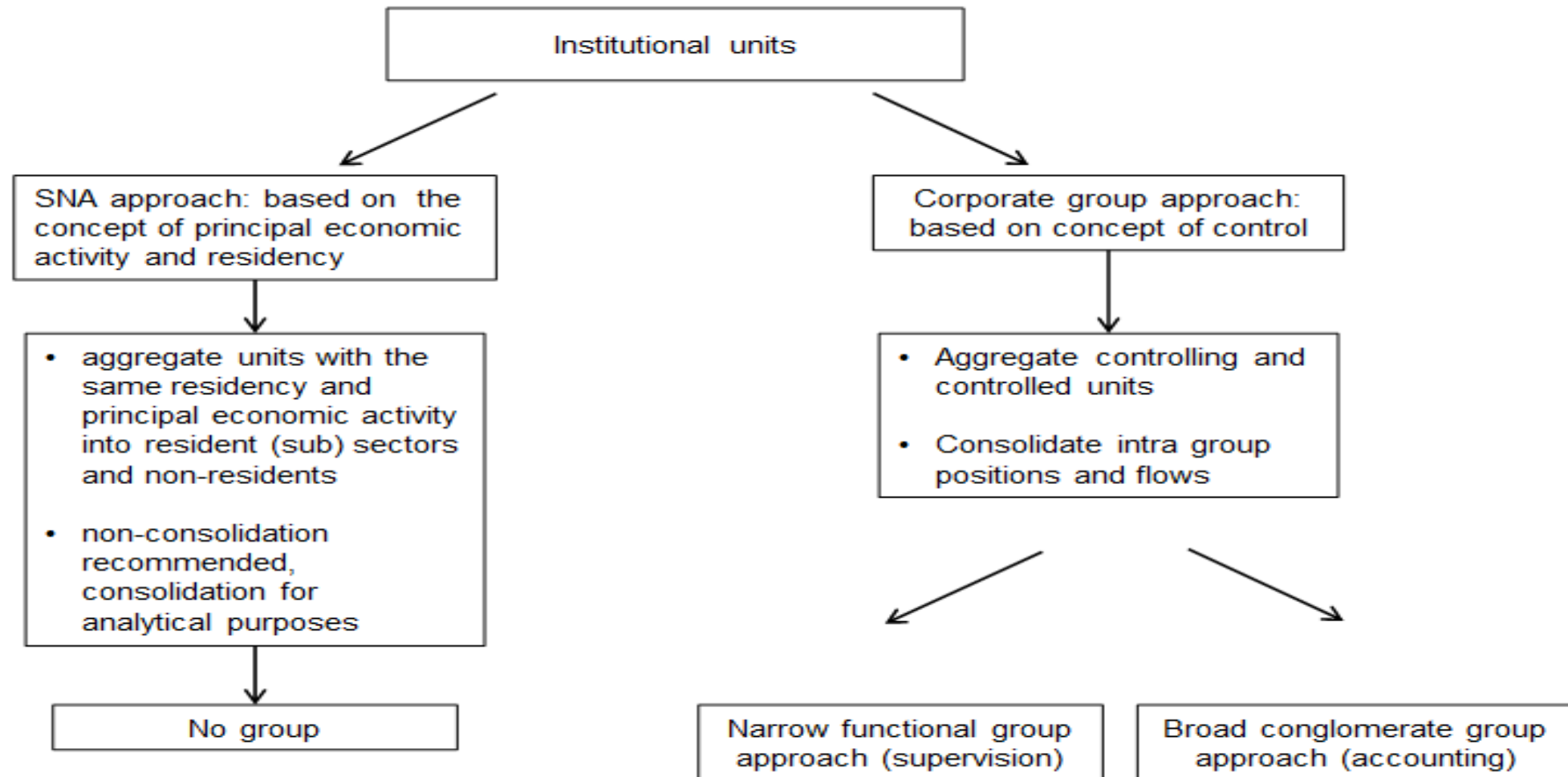


## 2.D – Defining a corporate group

- Business accounting (“conglomerate” view of a group)
  - Group comprises “a parent and all its subsidiaries”
  - Accounting view can be very broad
- Supervisory
  - Functional approach
  - Prudential view of a group can be significantly narrower
  - “Look through” the chain of controls and identify the ultimate risk holder
  - Three types of groups of corporations: Banking groups, Non-bank financial groups, Non-financial groups
- Statistical
  - Broad approach not recommended (institutional unit)
  - Consolidation is discouraged
  - SNA concept of “large groups and multinational corporations”



## 2.D – Assessing the financial position of a group



## 2.E – Challenges

- Differentiating between “influence” and “control”
- Large, complex groups: cf Joint Forum definition of financial conglomerate:  
➔ at least 2 significant activities in banking / insurance / securities
- *What happens if?* Ring-fencing issues, branch vs subsidiary, level of guaranties



## 3. Usage of consolidated data: *can it add value?* – the BIS experience

3.A Shadow Banks (FSB exercise)

3.B Consolidated international banking statistics (CBS)

3.C Derivatives statistics

3.D International debt securities statistics (IDS)



## 3.A – Shadow banks: Consolidation issues

- Shadow banking
  - Credit intermediation involving entities and activities outside of the regular banking system
  - FSB *Global Shadow Banking Monitoring Report 2014*
- “Narrow shadow banks”
  - Sector only includes entities that meet specific criteria:
    - **Not (prudentially) consolidated in a banking group**
    - Part of the credit intermediation chain
    - Specific risks (maturity & liquidity transformation)
  - Caution in consolidating non-bank entities





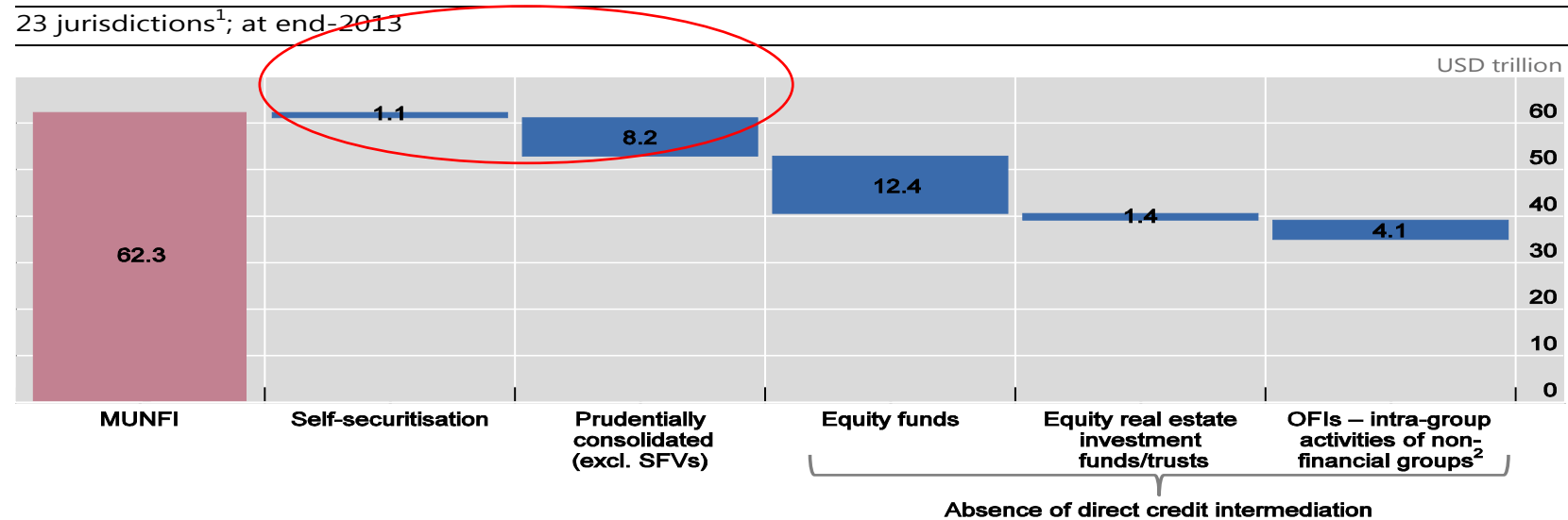
## 3.A – Shadow banks: Methodology

- “Macro-mapping”
  - Conservative estimate based on national Flow of Funds (FoF, balance sheet data) for all non-bank financial intermediation
  - Primary focus on “Other Financial Intermediaries”
- “Narrowing down”:
  - Use of more granular data (when available) to filter out entities
  - Exclude entities already prudentially consolidated into banking groups: mainly finance companies and broker-dealers
  - Structured Finance Vehicles (SFVs): products can remain on the balance sheet of the bank that originally provided the asset to be securitised (they are subject to consolidated banking supervision)



## 3.A – Shadow banks: Narrowing down exercise

- 23 jurisdictions reported granular data for 2013
  - Shadow banking estimate revised from \$62 to 35 trillion (-44%)
  - 12/13 growth revised from +6.6% to +2.4%
  - One third of the correction: prudential consolidation impact
  - Substantial revisions for some economies



<sup>1</sup> 23 jurisdictions reported more granular data for narrowing down. <sup>2</sup> OFIs which are part of a non-financial group and are created for the sole purpose of performing intra-group activities. This year, only Dutch non-financial SFIs are included in this narrowing down component.

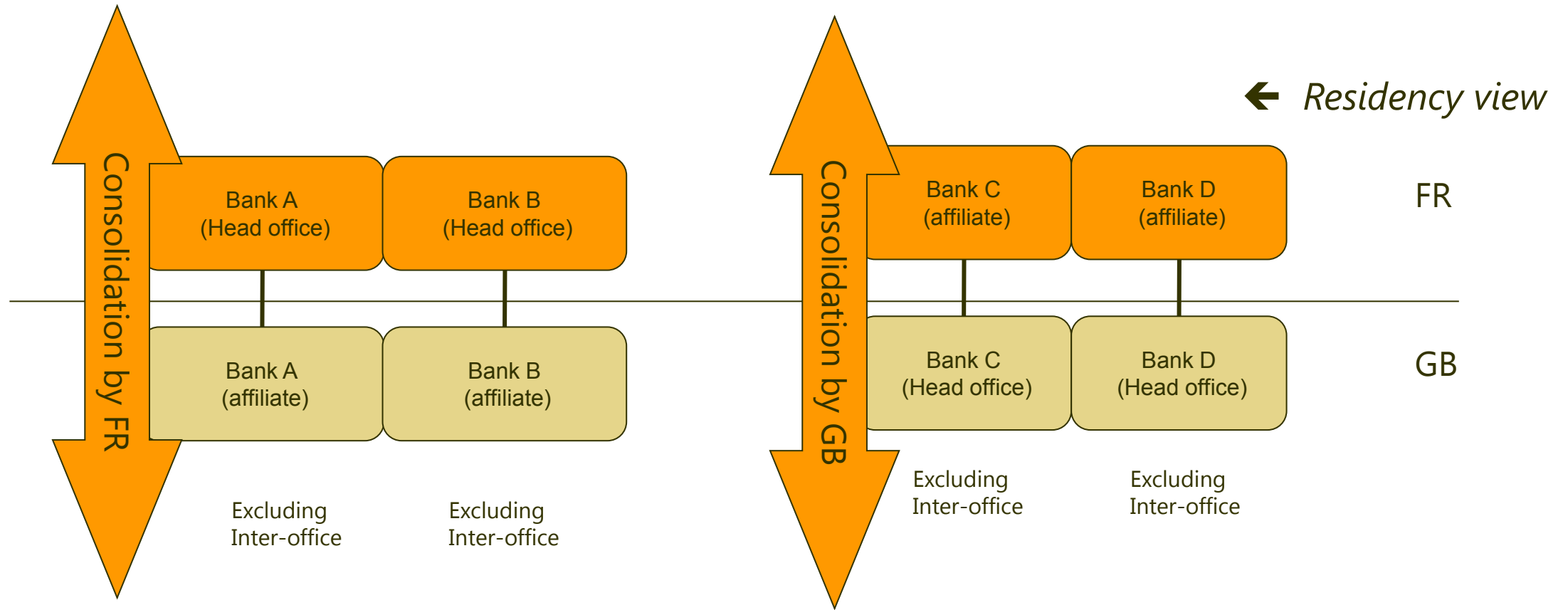
Sources: National financial accounts data; other national sources.

## 3.B – Consolidated international banking statistics

- Exposure of national banking systems (supervisory concepts)
  - All offices (including affiliates)
- 2 sets of consolidated banking statistics
  - Immediate borrower basis: Foreign claims of the banks of one country nationality consolidated worldwide
  - Ultimate risk basis (ie after adjusting for credit risk mitigants such as guarantees and collateral)



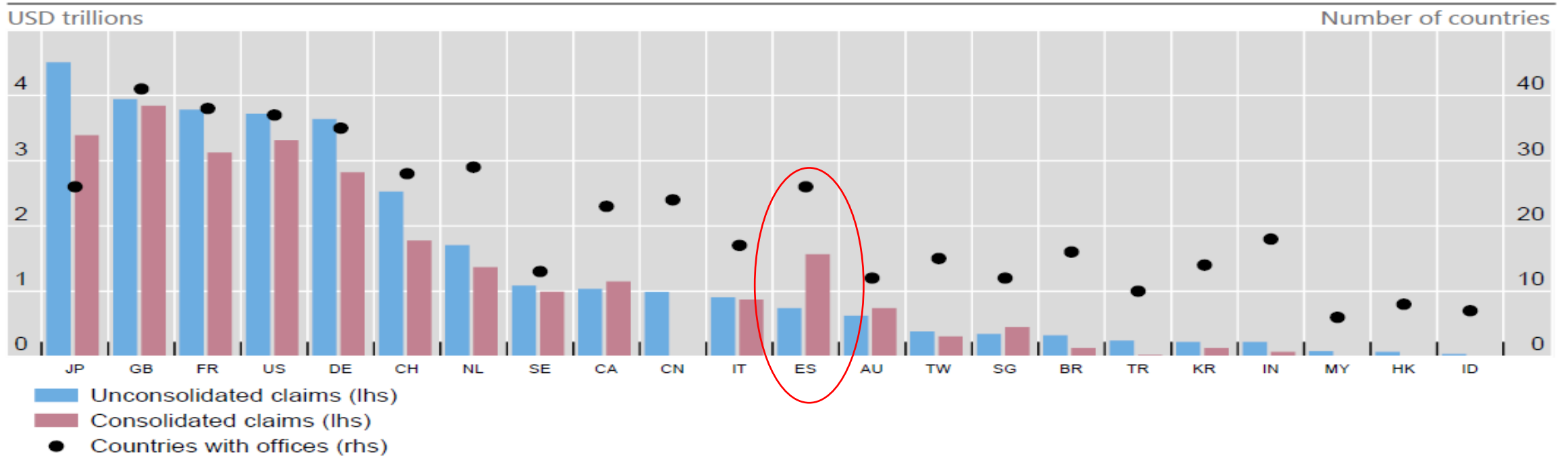
# 3.B – Consolidation of domestically-controlled banks



## 3.B – Consolidated international banking statistics

### International business of banks in reporting countries

by home country of (parent) bank, within the BIS reporting area (44 countries for the LBS)

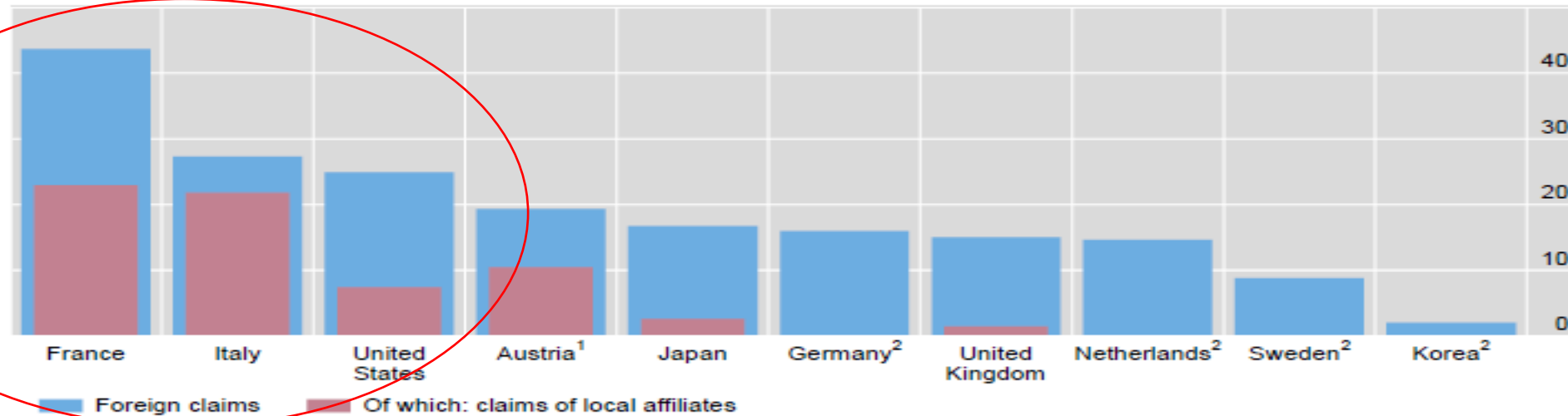


## 3.B – Consolidated international banking statistics

### Foreign claims (ultimate risk basis) on Russia, by nationality of reporting bank

At end-September 2014, in billions of US dollars

Graph 7



<sup>1</sup> For Austrian banks, local claims represent claims in Russian roubles only and exclude claims in currencies other than rouble. <sup>2</sup> Due to confidentiality, the amount of local claims is not shown.

Source: BIS consolidated banking statistics (Tables 9D and 9E).

- Banks' foreign claims on Russia: \$196 billion on an ultimate risk basis
- French banks: even split between cross-border claims and claims booked by their local Russian affiliates
- US banks: mostly cross-border exposures



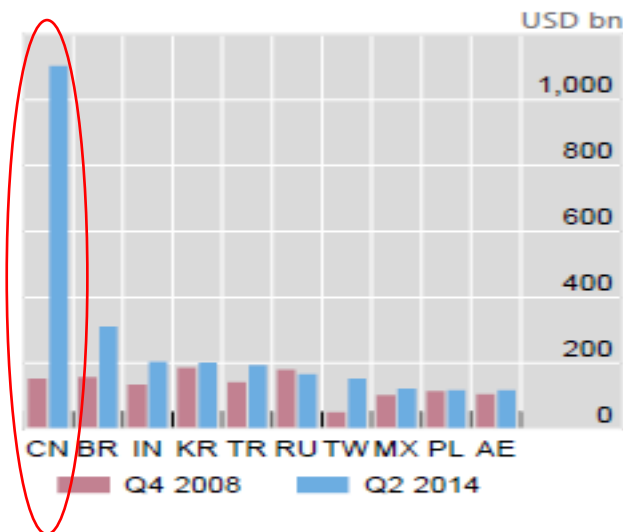
## 3.B – Consolidated international banking statistics

- Foreign claims on China amounted to around \$1.3 trillion in 2014, the fifth largest stock of claims on any individual country worldwide.
- Around two thirds are on Chinese banks.

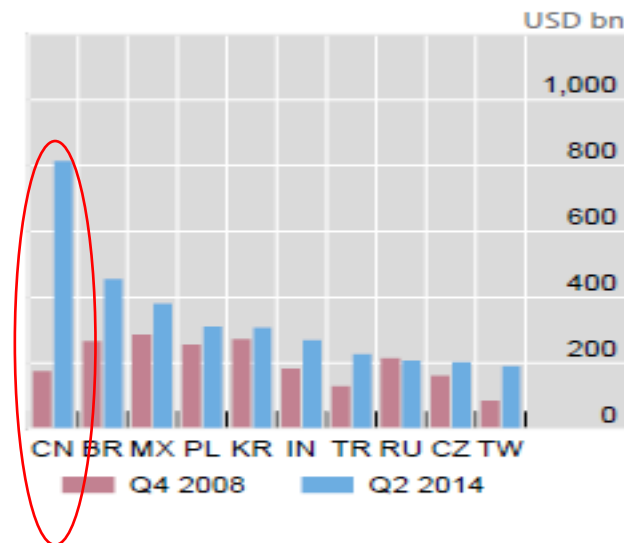
### The rise of China as an international bank lending destination

Claims of BIS reporting banks on emerging market economies, outstanding end-of-period stocks

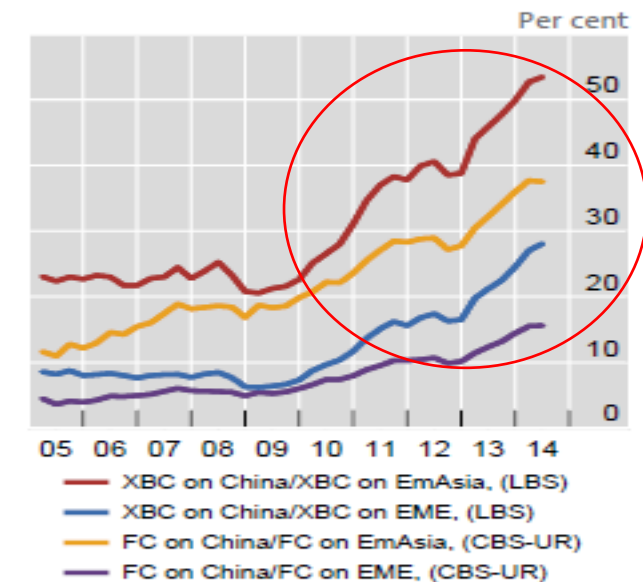
Cross-border claims<sup>1</sup>



Foreign claims<sup>2</sup>



Claims on China, as a share of claims on emerging Asia and on EMEs



AE = United Arab Emirates; BR = Brazil; CN = China; CZ = Czech Republic; IN = India; KR = Korea; MX = Mexico; PL = Poland; RU = Russia; TR = Turkey; TW = Chinese Taipei; EmAsia = emerging Asia-Pacific; EME = emerging market economies; XBC = cross-border claims; FC = foreign claims; LBS = locational banking statistics; CBS-UR = consolidated banking statistics on an ultimate risk basis.

<sup>1</sup> All reporting banks' cross-border claims (including banks' positions vis-à-vis their own offices) on the 10 largest EME borrowers as of end-Q2 2014. <sup>2</sup> All domestic banks' foreign consolidated claims (ultimate risk basis) on the 10 largest EME borrowers as of end-Q2 2014.

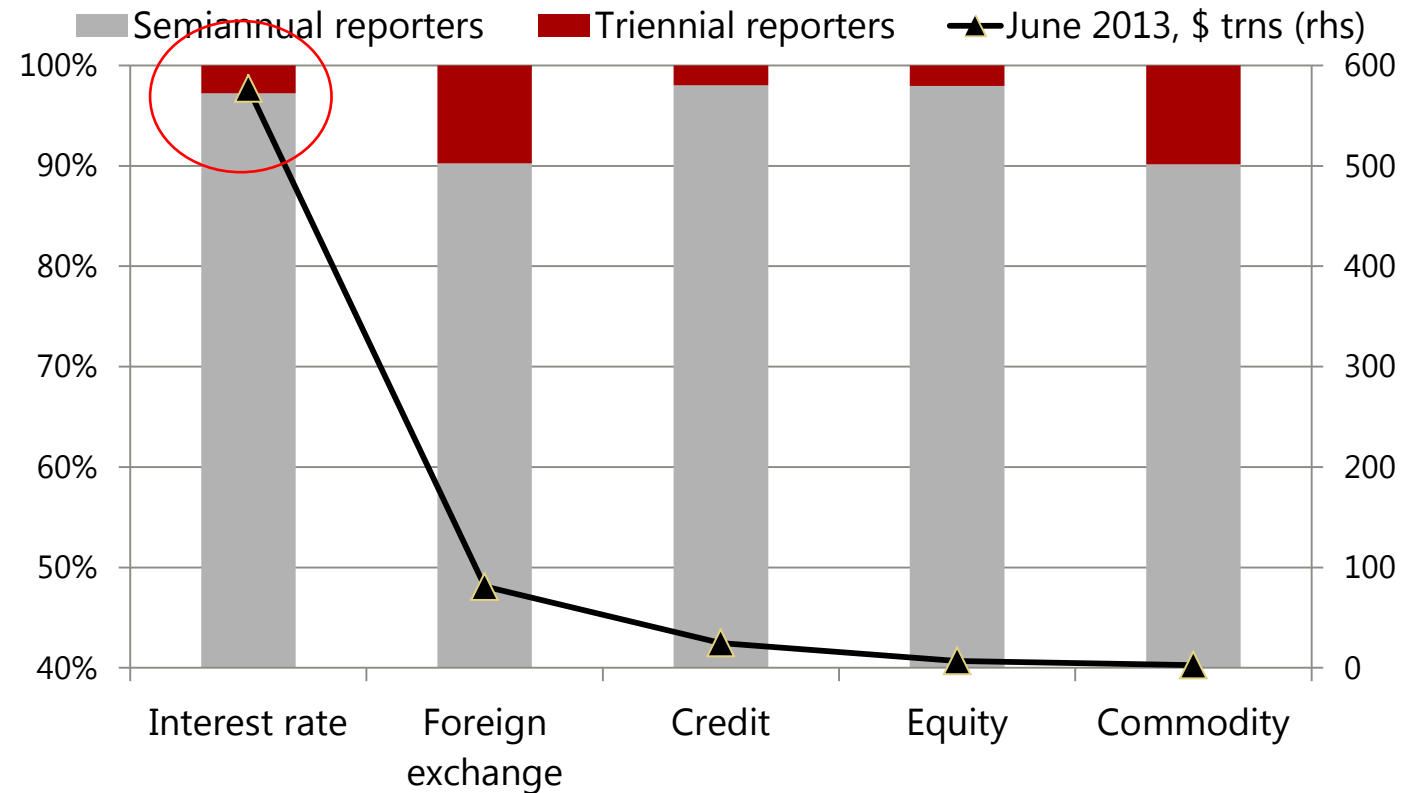
Sources: BIS locational banking statistics by residence (Table 6A); BIS consolidated banking statistics (Table 9D).



## 3.C – Derivatives statistics

- *BIS semi-annual data are consolidated.*
- *High global market coverage: institutions of the 13 surveyed jurisdictions control a large number of affiliates worldwide.*
- *Operations between affiliates of the same institution are excluded (for instance hedging operations conducted by a local branch with its parent entity, which merely reflects intra-group risk management practices).*

### Share of the 13 reporting economies (8 G20)





## 3.D – BIS International debt securities statistics

- International debt securities
    - Security-by-security database, very flexible
    - Multiple breakdowns
  - 2012 definition: debt securities issued in a foreign market (ie in a market other than the local market of the issuer), with several criteria:
    - currency of denomination
    - location of the primary/secondary markets (eg listing places)
    - governing law
- (micro) data quality problems

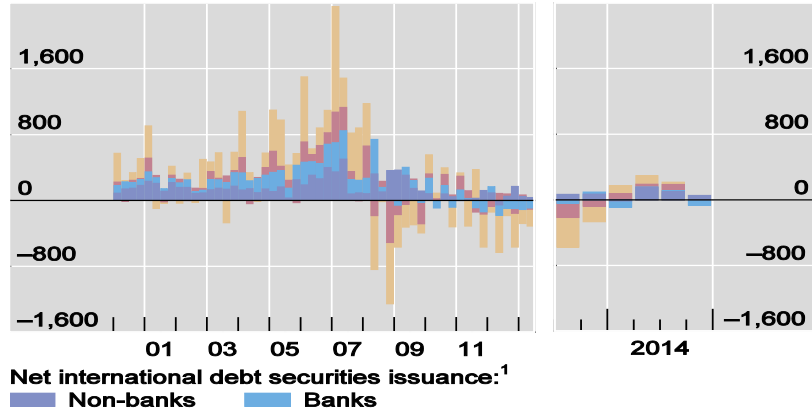


# 3.D – BIS IDS: the "2<sup>nd</sup> phase of global liquidity"

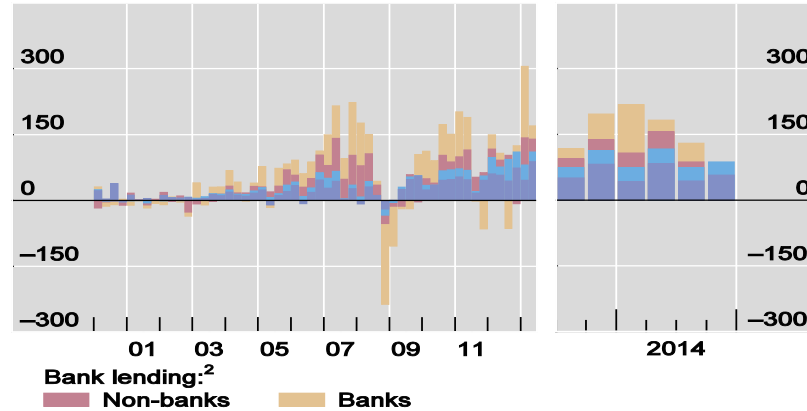
## External financing flows

In billions of US dollars

Debt and bank lending: advanced economies

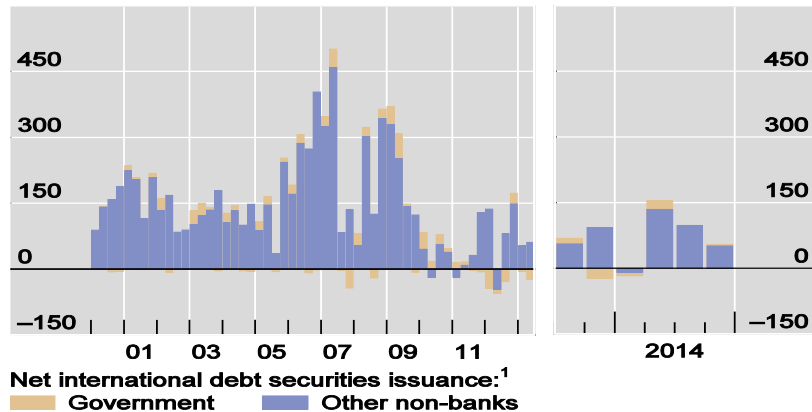


Debt and bank lending: emerging markets

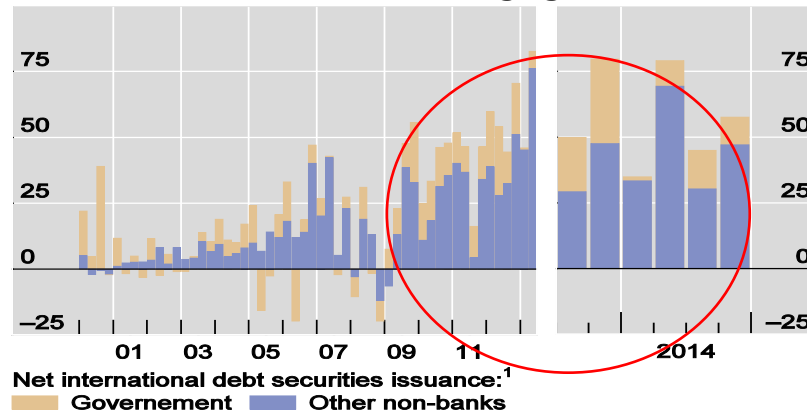


**Strong international issuance by EMEs**

Net non-bank debt issuance: advanced economies<sup>1</sup>



Net non-bank debt issuance: emerging markets<sup>1</sup>



**EME corporates increasingly relying on debt securities for funding**

<sup>1</sup> Net international debt issuance for all issuers, in all maturities, by nationality of issuer. In December 2012, the BIS revised the compilation of its debt securities statistics to enhance their comparability across different markets. International issues were redefined as debt securities issued outside the market where the borrower resides. <sup>2</sup> External loans of BIS reporting banks vis-à-vis individual countries; estimated exchange rate-adjusted changes.

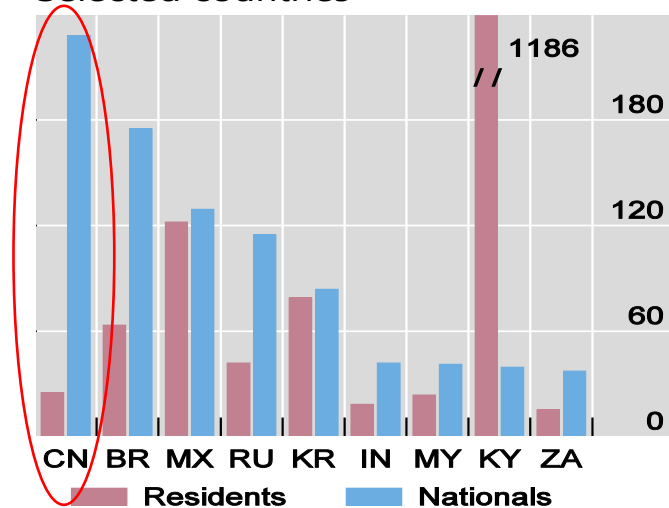
Sources: Dealogic; Euroclear; Thomson Reuters; Xtrakter Ltd; BIS locational banking statistics by residence; BIS calculations.

## 3.D – BIS IDS: The residency/nationality nexus

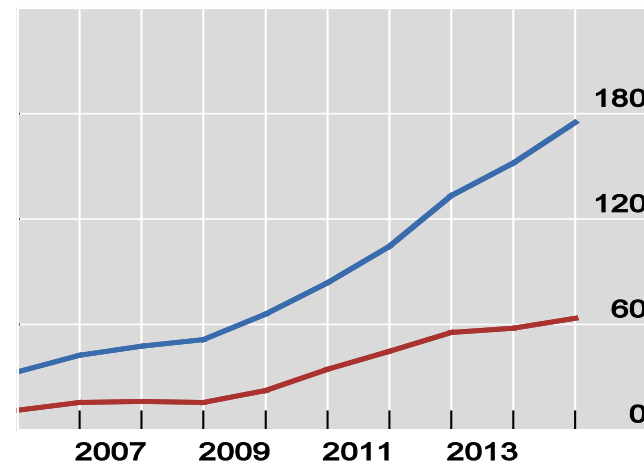
### International debt securities<sup>1</sup>

Amounts outstanding, in billions of US dollars

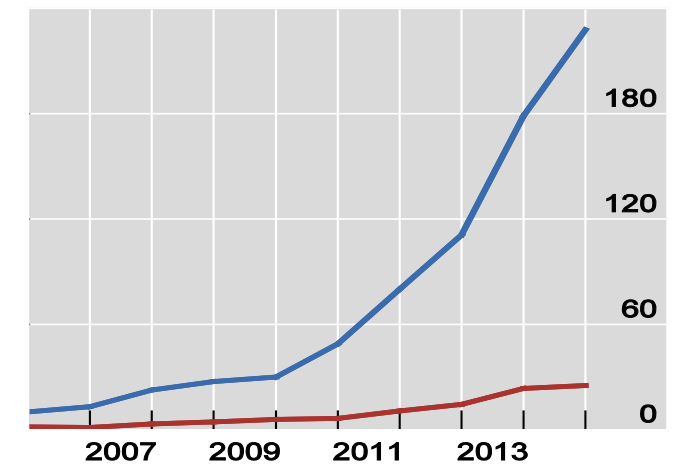
#### Selected countries<sup>2</sup>



#### Brazil<sup>3</sup>



#### China<sup>3</sup>



BR=Brazil; CN=China; IN=India; KR=Korea; KY=Cayman Islands; MX=Mexico; MY=Malaysia; RU=Russia; ZA=South Africa.

<sup>1</sup> Issued by non-bank financial corporations and non-financial corporations. <sup>2</sup> At end-June 2014. <sup>3</sup> At end-year, except 2014 at end-June 2014.

Sources: Dealogic; Euroclear; Thomson Reuters; Xtrakter Ltd; BIS debt securities statistics. See "BIS debt securities statistics: a comparison of nationality data with external debt statistics", Branimir Gruić and Philip Wooldridge, Proceedings of the seventh IFC Conference on "Indicators to support monetary and financial stability analysis: data sources and statistical methodologies", Basel, 4 and 5 September 2014, IFC Bulletin No 39 (2015).



Thank you

Questions?

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Irving Fisher Committee on  
Central Bank Statistics

BANK FOR INTERNATIONAL SETTLEMENTS

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IFC Satellite meeting at the ISI World Statistics Congress on *"Assessing international capital flows after the crisis"*

Rio de Janeiro, Brazil, 24 July 2015

## Residency and Nationality: A view from 10,000 feet<sup>1</sup>

Charles Thomas, Board of Governors of the Federal Reserve System

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<sup>1</sup> This presentation was prepared for the meeting. The views expressed are those of the author and do not necessarily reflect the views of the BIS, the IFC or the central banks and other institutions represented at the meeting.

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## Residency and Nationality: A view from 10,000 feet

Charles Thomas

Associate Director, Division of International Finance  
Federal Reserve Board of Governors

Session 3: Should residency-based data be completed by nationality information?

## Residency: The legal definition

*Residency means you have a presence with a purpose. When you complete that purpose, you will return to your domicile. It is distinct from domicile which needs no purpose. In addition, a person can simultaneously have several residences but only one domicile.*

## Residency: The BOP definition

*The residence of each institutional unit is the economic territory with which it has the strongest connection, expressed as its center of predominant economic interest. Each institutional unit is a resident of one and only one territory. Corporations and nonprofits normally are expected to have a center of economic interest in the economy in which they are legally constituted or registered. This may be different than the economies of their shareholders, subsidiaries or parent corporation.*



## Why residency (or location) matters

- Physical proximity and the associated cultural similarities mean that, for most, the predominance of one's economic interactions are with fellow residents.
- Physical proximity means that residents are subject to common external shocks.
- Owing to self-interest or cultural affiliation private agents may act for the benefit of residents over non-residents.
- Residents elect governments and governments give policy makers their mandates. The end result is that policy makers are instructed to act for the benefit of their fellow residents.
- Through the legal system, policy makers have their most direct influence over residents.

## What residency really gets us:

- Positive correlation of outcomes among fellow residents
- A marker for who controls resources and for whose benefit those resources will be directed—fellow residents
- Very useful and precisely what we need to assess financial stability

## Residency can also be misleading or, at least, uninformative

- Cayman financing vehicle: No interaction with other Caymanians
  - => Little correlation
- Apple Computer's subsidiaries in Ireland
  - Some have significant interaction with Ireland, but low correlation
  - Control of the Apple resources in Ireland
    - US Authorities rival those of host Ireland
    - US Parent-Apple will direct them for the benefit of Parent-Apple, not necessarily Ireland

## Two alternatives/complements to residency:

- Ultimate Risk: Who is on the hook for an obligation if all the more immediate obligors do not perform.
  - Particularly useful for guarantees written by third parties, e.g., CDS
- Nationality: Cross-border parent-subsidiary relationship based on the notion of control.
- But these two can be conflated.

## Guric and Wooldridge (2012) on Nationality

- *The BIS has...published [debt] ...statistics broken down by...the nationality...of the issuer...even though the [Handbook on Security Statistics] provides no guidance for such a classification. Nationality refers to the ultimate obligor, as opposed to the immediate borrower on a residence basis...Information on a nationality basis is useful to analyse potential support that might be available from the parent company and to understand links between borrowers in different countries and sectors...Consistent with the approach taken in the international banking statistics, the BIS bases the nationality of an issuer on the residency of its controlling parent, regardless of any intermediate owners.*

Claim is that from Controlling Parent you can get

- Ultimate Obligor
- Source of potential support
- Ownership

## What does Controlling Parent really get you?

- *Ultimate obligor?* Not unless there are explicit guarantees
  - The reason to organize a sub with a limited liability structure is precisely so the parent does not need to support the child in all situations.
- *Source of potential support? Who supports whom?*
  - Sometimes the parent supports the child
  - Sometimes the child supports the parent
  - Sometimes the child is left on its own
- *What we know for sure:* The parent and its supervisors are not going to give as much weight to the child's well being (or fellow residents) as a fully domestic firm would

## Neither Residency nor Nationality gives a clear picture

- But they work well together when we know what we are looking for
- E.g., Classic financial stability question: “What is my exposure to X?”
  - As a first pass, all I care about is an upper bound.



## Getting an upper bound on exposure

- First go to the residency data and find direct exposures to all residents of X.
  - Along with nationals of X, this includes foreign subs operating in X.
  - Including these subs is saying there will be no support from the parent.
    - Its's okay, we are looking for an upper bound
- Next, add in exposure to non-X subs whose parents are resident in X. (E.g., offshore financing arms of Chinese firms)
  - Assumes the Chinese parents will not support them
- All good for getting an upper bound on exposure.....But,

## Even working together Residency and Nationality will miss indirect exposure

- That is, my exposure to a non-X firm that itself has exposure to X?
  - Neither Residency nor Nationality will pick this up
- For most sectors, probably not worth the collection effort
- For where it is most important, BANKING, we already have it in the *consolidated* statistics
  - That's for another session

Thank you

IFC Satellite meeting at the ISI World Statistics Congress on *"Assessing international capital flows after the crisis"*

Rio de Janeiro, Brazil, 24 July 2015

## Complementing residence-based external debt data with issuances by subsidiaries abroad: a tool for risk analysis in emerging market economies<sup>1</sup>

Fernando Alberto Rocha, Central Bank of Brazil

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<sup>1</sup> This presentation was prepared for the meeting. The views expressed are those of the author and do not necessarily reflect the views of the BIS, the IFC or the central banks and other institutions represented at the meeting.

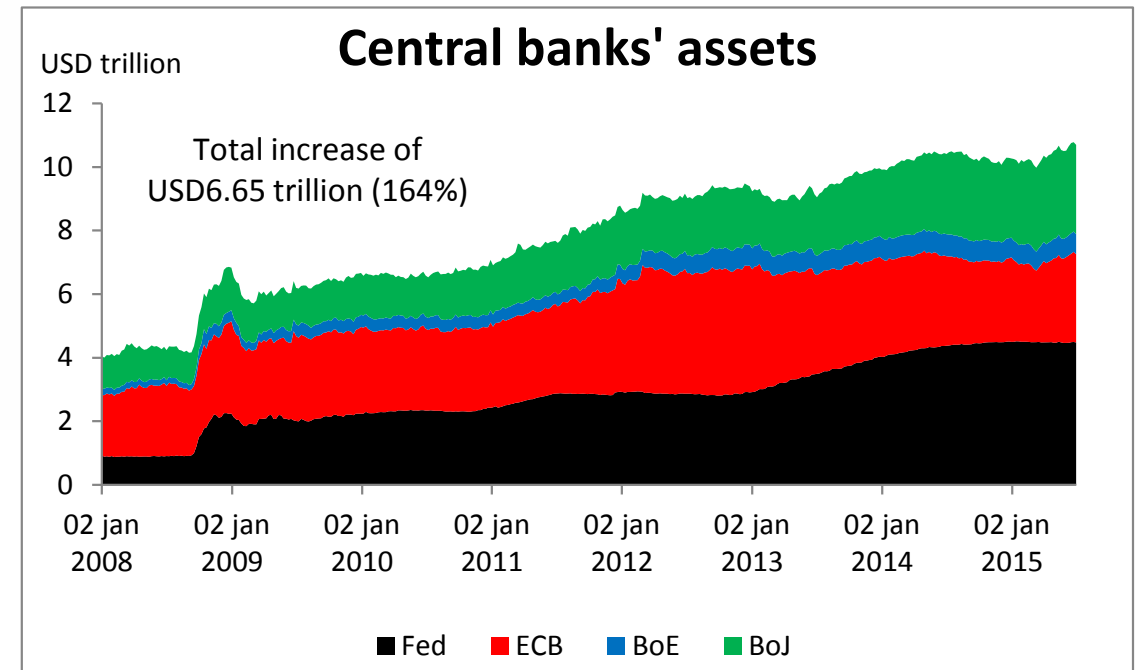
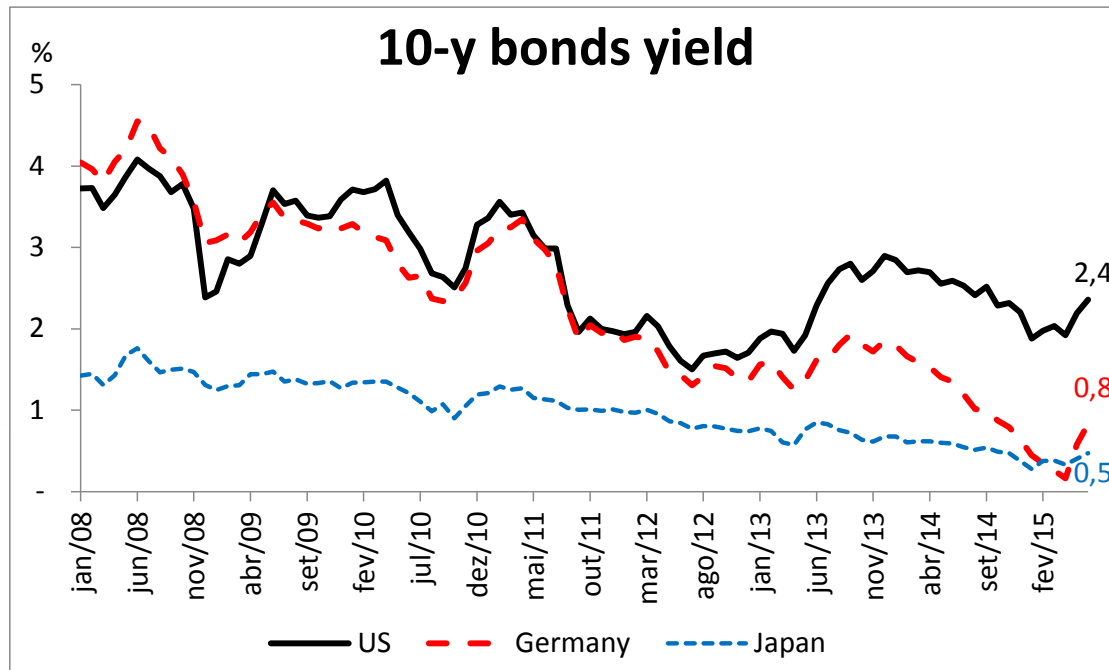
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*Complementing residence-based external debt data  
with issuances by subsidiaries abroad:  
a tool for risk analysis in emerging market economies*

Fernando Alberto Rocha  
Banco Central do Brasil (BCB)  
Department of Economics (Depec)

## 1. Introduction

High and ever increasing liquidity in the international financial markets post-crisis: very low (short- and long-term) interest rates and unconventional monetary policies in advanced economies' central banks.

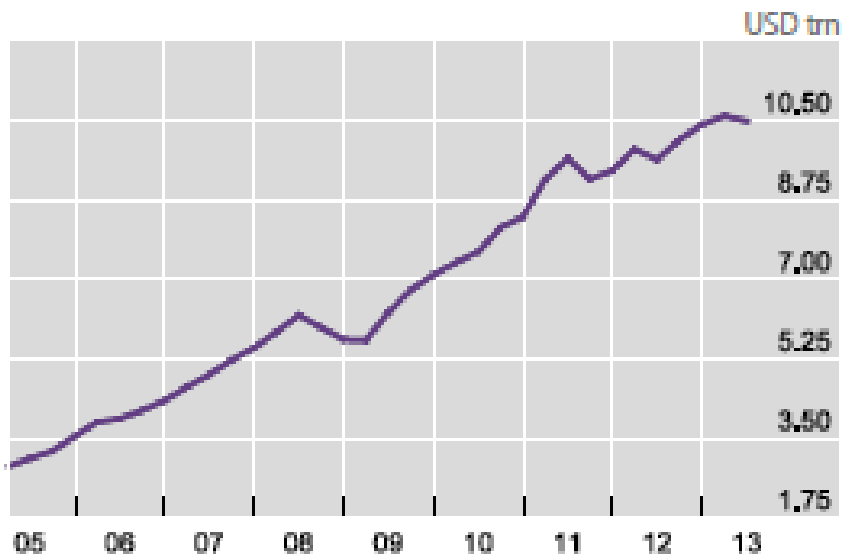


## 1. Introduction (cont.)

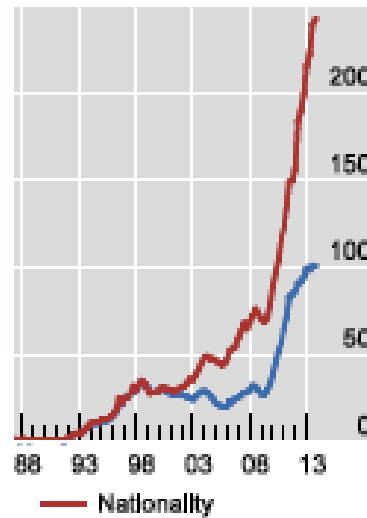
International financial markets with lower volatility, reduction in risk aversion and EME's ratings upgrade, while investors are searching for yield.

**Increased internationalization of EME financial markets, both domestic and abroad.**

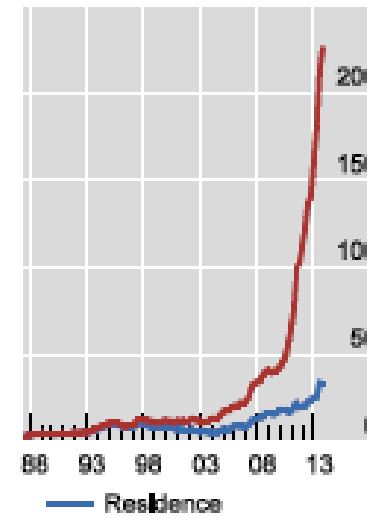
Domestic debt securities<sup>2</sup>



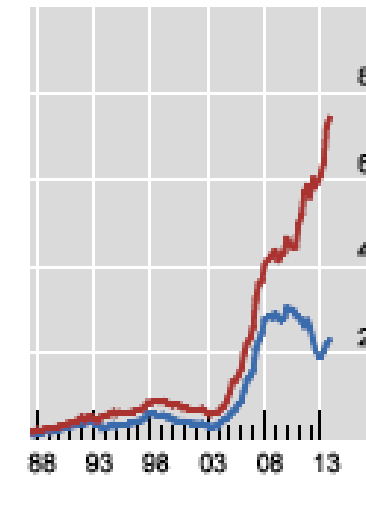
Brazil



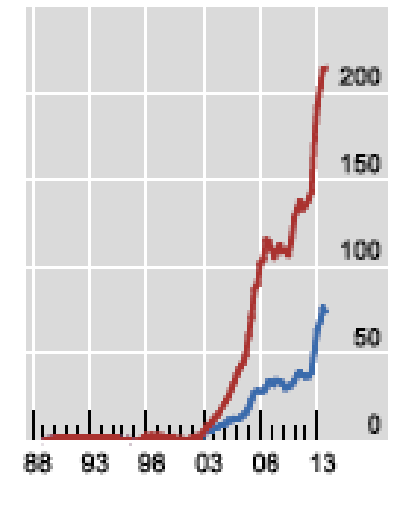
China



India



Russia



## 2. Internationalization of EME financial markets

**EME's issuing debt securities in their local markets and currencies to non-residents.** World Bank estimates that non-residents hold **26.6% or more** of local currency bonds (2013).

**EME's corporations (financial and non-financial) issuing debt securities in foreign markets using affiliates.** About half EME corporate issuance from 2010 was made through overseas affiliates. Main issuers are corporations from BRIC countries, Malaysia and Thailand.

Among the reasons (besides high liquidity) for this practice are:

- reach a broader investor base (that would find it hard to invest locally);
- better market conditions for funding: domestic dollar lending, internationalization of firms, investment projects, foreign trade operations, and rolling-over foreign currency loans;
- try to avoid capital controls measures and/or tax/regulatory arbitrage.



## 3. Data Gaps Initiative (DGI)

In 2009, the DGI already pointed out to the need for “***improved data on international financial network connections***”, “***better capture the build-up of risk in the financial sector***” (and also non-financial) and “***monitor the vulnerability of domestic economies to shocks***”.

In fact, DGI recommendation #13 was aimed at “***investigate the issue of monitoring and measuring cross-border, including foreign exchange derivative, exposures of nonfinancial, and financial, corporations with the intention of promoting reporting guidance and the dissemination of data***”.

The 2010 DGI Progress Report specifically mentioned that “***locally-owned nonfinancial corporations were using offshore entities to borrow funds***” and that this was a data gap (not in traditional BOP/EXD data) and a potential risk for financial stability.

## 3. DGI (cont.)

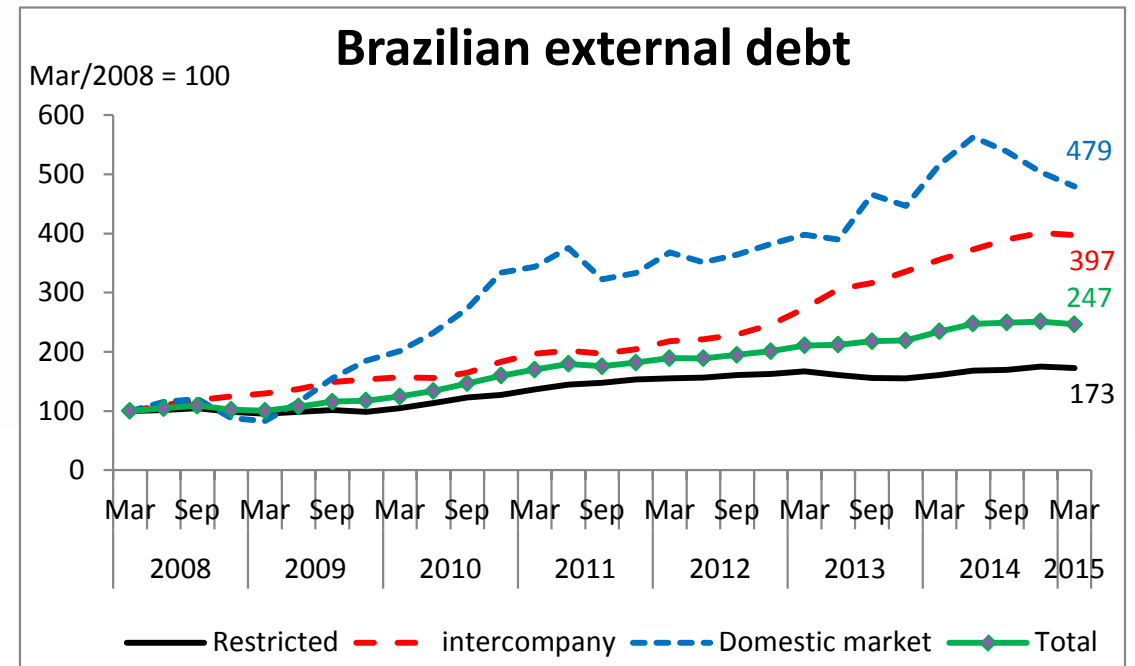
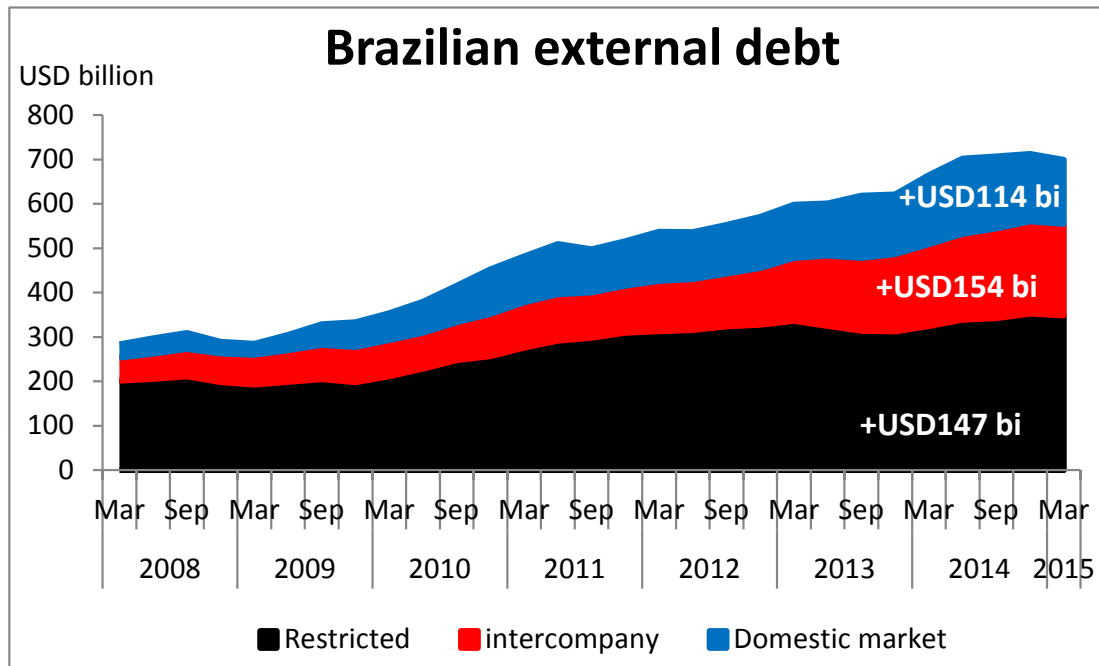
To address recommendation #13, an IAG working group was created, led by the BIS.

The WG sponsored a workshop on January 2011 on “***Residency/Local and Nationality/Global Views of Financial Positions***” (published by the IFC on February 2012), discussing methodological and practical issues, how to consolidate available information and what are the existing data gaps. A reference paper was expected to be published by the end of 2014.

**The completion of recommendation #13 was made mainly on the conceptual ground.** There are not yet specific methodological standards or guidelines nor reporting templates for data on corporations (both financial and nonfinancial) on a consolidated basis (in addition to the usual residency-based perspective).

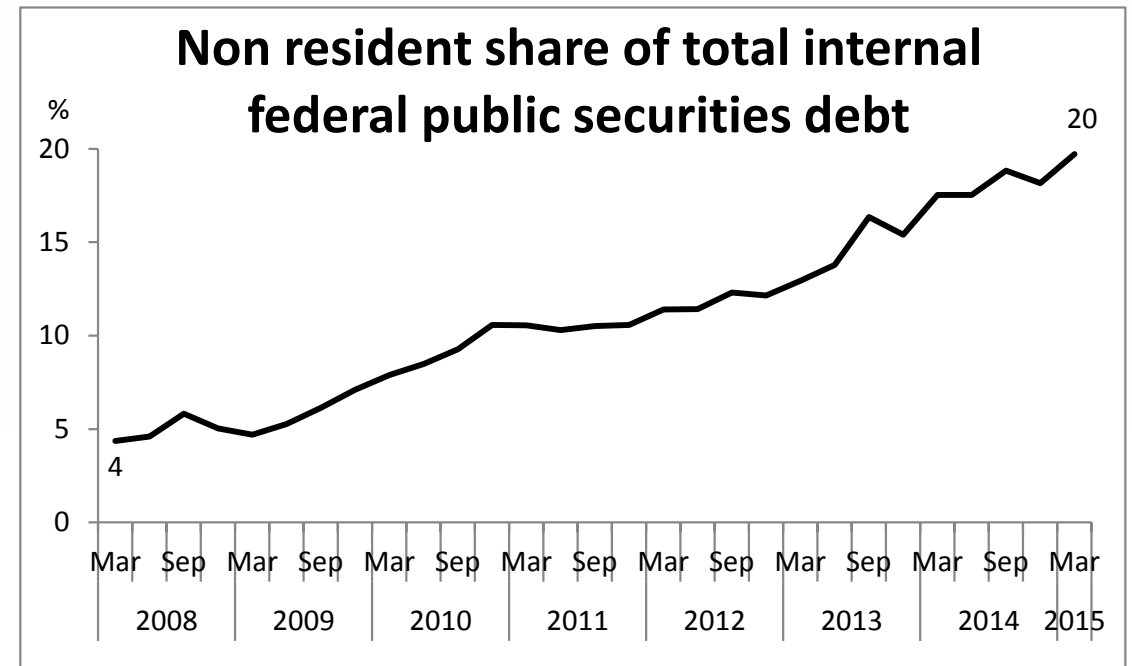
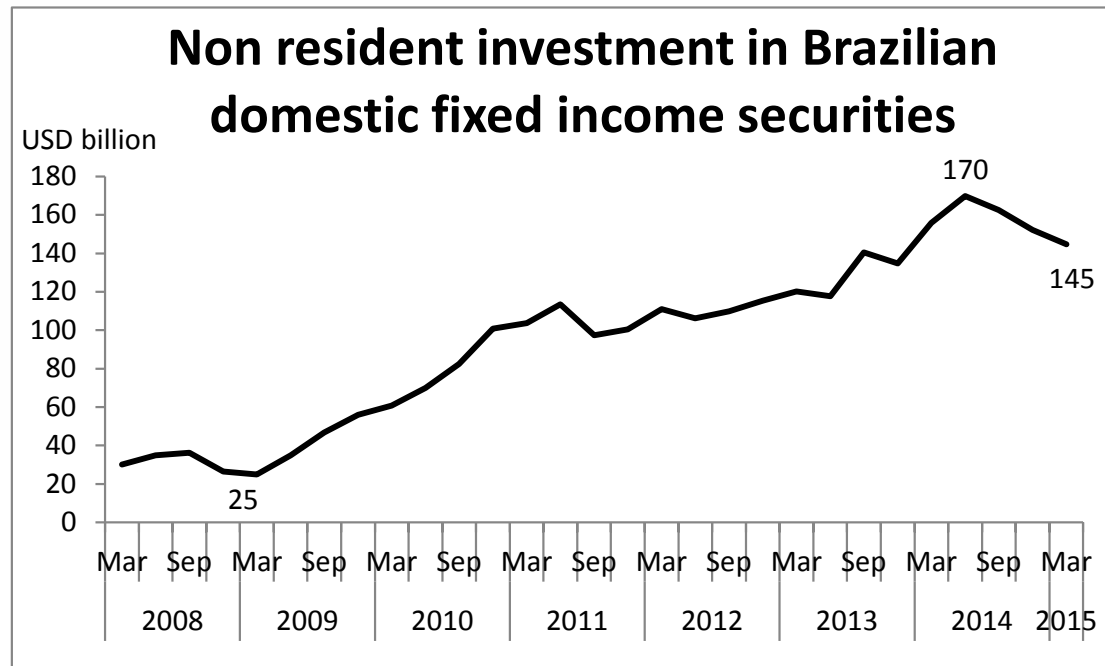
## 4. The Brazilian case

Significant capital inflows, impacting external debt. All external debt “categories” show important increases (in USD). Such increases are more pronounced in domestic debt securities and intercompany loans, not in “traditional” external debt (in %).



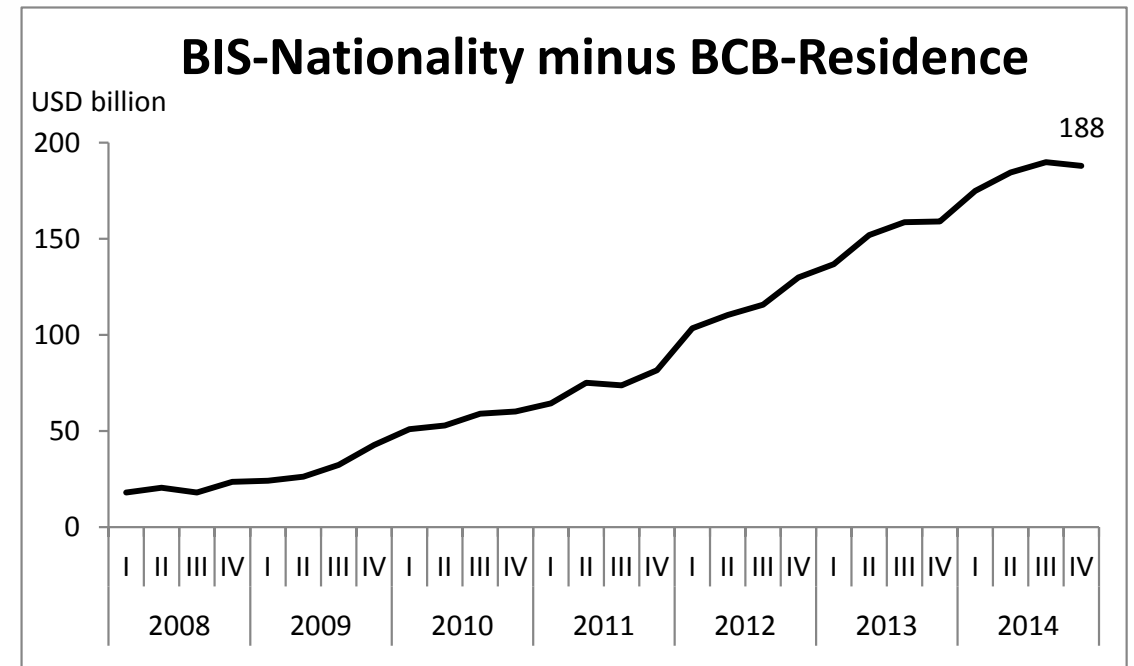
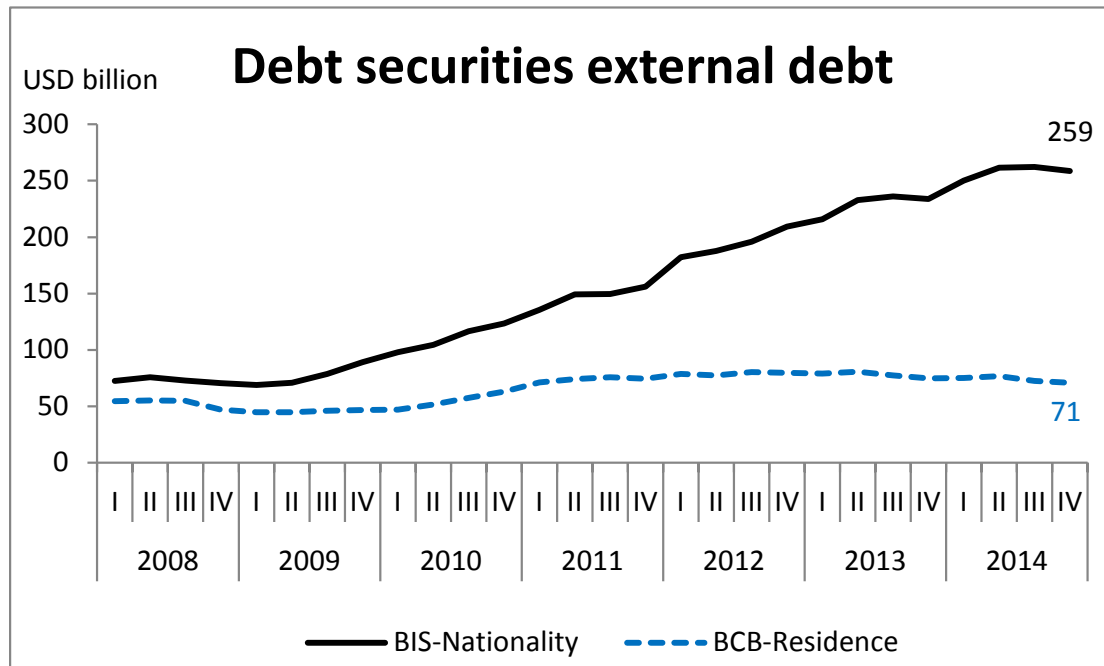
## 4. The Brazilian case (cont.)

Non-resident investments in domestic markets securities increased due to the mentioned external factors, but also by domestic ones, such as income tax exemption and IOF taxation. Such securities are denominated/settled in BRL (FX risk of the investor).



## 4. The Brazilian case (cont.)

For debt securities issued abroad by non-resident affiliates of Brazilian corporations, a way of estimating this amount is to subtract residence (BCB debt securities EXD statistics) from nationality data (BIS IDS database). The gap was **USD188 billion** as of December 2014.



## 5. Using BCB databases: issuances by subsidiaries abroad

In order to fill this data gap and provide information for financial stability analysis it was necessary i) to replicate the BIS database using micro data and then ii) try to “follow the money”.

**First we compared both debt securities databases using residence concept:** the BIS series increased overtime more than BCB’s (improving coverage?) and was USD28 billion higher in December 2014, among other possible reasons, for different valuation methods.

**It means that of the USD188 billion difference among BIS-nationality and BCB-residence, USD28 billion were differences among the two residence-based datasets.**

## 5. Using BCB databases: issuances by subsidiaries abroad (cont.)

Then, we tried to replicate BIS IDS database by nationality (commercial sources) with information providers' data. Of the USD188 billion dollar difference, we got security-by-security information of **USD165 billion** issued abroad by non-resident affiliates.

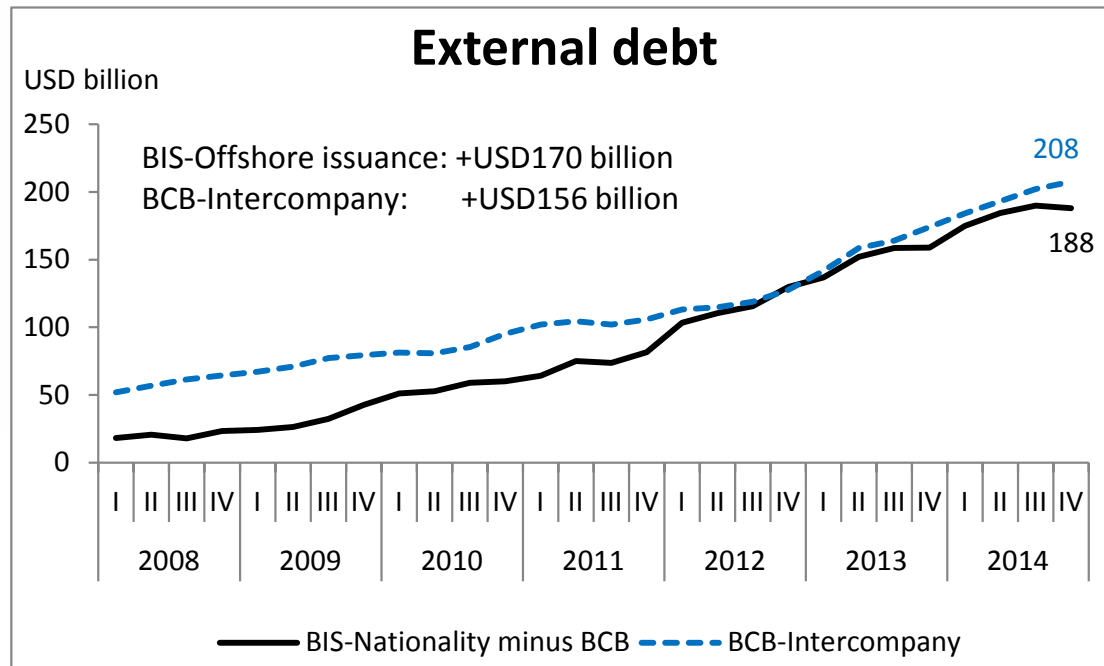
**USD49 billion (30%)** were issuances of financial institutions' affiliates abroad. For financial stability this is not a information gap, as BCB supervision already get consolidated information from its supervised financial institutions.

For the **USD116 billion of non-financial sector** issuances, we built a sample of the top 10 issuers (86%) and compare with BCB databases. The increase of the **outstanding intercompany loans of the sample equals 79% of the sample issuances**. Besides, 49% of all intercompany loans are export-related to be paid in goods (exports advance payments) and around 90% are long term.

## 5. Using BCB databases: issuances by subsidiaries abroad (cont.)

The results (extrapolating the sample) are in the table below.

**They seem to indicate Brazilian companies (mainly commodity exporters) searching for better funding conditions, as the vast majority of the resources were internalized.**



### Outstanding debt securities issued abroad - Residence and nationality concepts

Itemization	US\$ billion 2014
Outstanding (BIS-nationality minus BCB-residence)	187,9
(-) Financial institutions issuances abroad	55,3
(=) Non-financial corporations issuances abroad	132,6
(-) Internalization through intercompany lending net inflows <sup>1/, 2/</sup>	104,2
(-) Constitution of assets abroad <sup>1/, 3/</sup>	5,1
Residual amount	23,3

Source: Banco Central do Brasil and international data providers.

1/ Sample of ten leading non-financial corporations that issue abroad, representing 86.1% of the total issuances of foreign affiliates of non-financial corporations.

2/ Balance of payments and external debt statistics.

3/ Brazilian Capitals Abroad survey (CBE), September 2014.



## 6. Using BCB databases: supervision data for financial stability

For financial stability, it was important to get accurate, consolidated, comprehensive and timely information on the evolution of financial and non-financial institutions debt, both domestic and abroad, in domestic and foreign currencies, post-crisis:

Domestic FX debt: BCB's Credit Bureau and Capital Markets Database;

Foreign debt: external debt data (residence) and the above methodology (nationality), which significantly overlap.

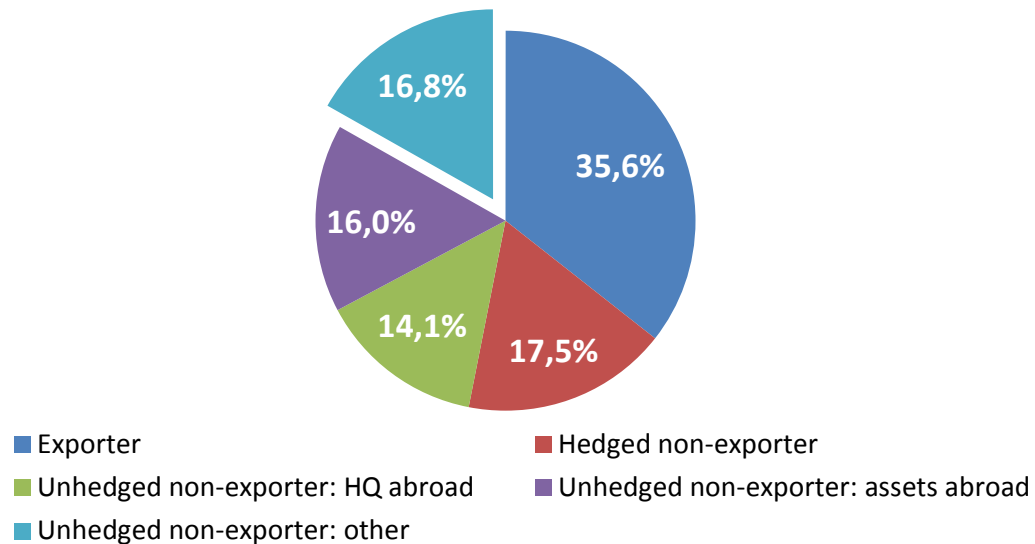
Derivatives: mandatory registration for all domestic contracts as well as abroad (financial institutions), with detailed daily information. Fully revised after 2008-09.

As of June 2014, **external markets represented 29% of Brazilian companies total debt** (domestic bank credit, 61%, and capital markets, 10%), one of the smallests in EMEs (GFSR, 2014). Around **1%** of Brazilian companies had foreign currency debt.

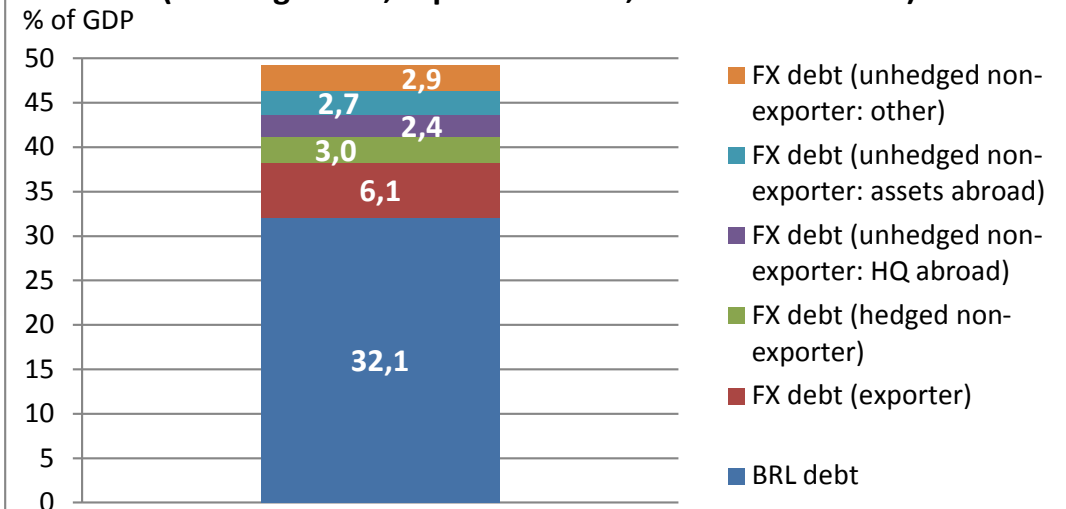
## 6. Using BCB databases: supervision data for FS (cont.)

**17% of total foreign currency debt of the Brazilian non financial sector does not have any identified hedge. This amount is equal to 3% of GDP.**

**FX debt by type of debtor**



**Total corporate debt, by currency**  
(banking credit, capital markets, and external debt)



## 7. Summary and conclusions

*“Data gaps are an inevitable consequence of the ongoing development of markets and institutions”* (DGI, 2009). Thus, statisticians and analysts will, in a sense, always be “behind the curve”. Constant monitoring of market practices and innovation is a necessity.

In the absence of fully developed global conceptual framework and datasets, this exercise, its methodology and results are specific to the Brazilian case.

**Although there is a huge increase in overseas affiliates of Brazilian corporations issuance in the last years, it seems that i) the vast majority of these resources are being internalized as intercompany loans and ii) albeit gross FX exposures are increasing, only a minor part of this amount does not have some kind of hedge.** Due to various data imperfections and estimations, these conclusions should be consider with caution.



Irving Fisher Committee on  
Central Bank Statistics

BANK FOR INTERNATIONAL SETTLEMENTS

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IFC Satellite meeting at the ISI World Statistics Congress on *"Assessing international capital flows after the crisis"*

Rio de Janeiro, Brazil, 24 July 2015

## Relevance of country allocation of FDI flows and positions<sup>1</sup>

Alejandro Barajas del Pino, Bank of Mexico

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## Relevance of country allocation of FDI flows and positions

Alejandro Barajas del Pino  
Chief Capital movements office  
Banco de México

# Relevance of country allocation of FDI Flows and Positions

The Case of Mexico

## Outline

- 1) Why it is important?
- 2) Estimation Methods of inward FDI flows and position.
- 3) Different ways to get involved in the globalization
- 4) Round trip position
- 5) Ultimate investor and immediate counterpart country
- 6) Conclusion

## Inward estimation

- 1) All the firms with foreign owners have to send information to the National Register of Foreign Investment (RNIE in Spanish) of the secretary of Economy.
- 2) A committee of Bank of Mexico and Ministry of Economy staff using the register information estimates the FDI flow each quarter.
- 3) The investment position is estimated by the Bank of México with information from the RNIE.
- 4) Some firms present late reports so the historical information is subject to revisions.



## Outward estimation

- 1) Bank of Mexico estimates outward flows and position using surveys to the main Mexican corporations.
- 2) The quarterly survey collects information for the FDI flows.
- 3) An annual survey is used to correct the quarter flows estimates.
- 4) The investment position es estimated with data from the annual survey.

## Relevance

- 1) Does it matter the source of foreign saving?
- 2) Is FDI different? It moves more than just purchasing power
  1. Technology
  2. Know how
  3. Access to trade chains
  4. Managerial practices
- 3) Spillovers? Depends on:
  1. Investment firm origin, sector
  2. Domestic resources and institutions.

## FDI Strategies

### FDI Motivations

- A. Efficiency seeking FDI
- B. Pure market seeking FDI
- C. Market seeking FDI to overcome policy barriers

## Relevance 2

- 4) Yes, to know what country influence come and go is central for understanding globalization.
  1. “Look through” when it is important?
    - i. Legal framework and taxes
  2. Ultimate investor. Who takes de final decision on what ? Who takes the risk?
    - i. Financial Risk.
    - ii. Loosing non tangible assets risk.
  3. Round trip.
  4. National security and national pride.

## Relevance 3

- 5) Globalization.
  1. One global economy
    - i. Geography, culture heritage, legal framework.
  2. Network
    - i. Complex interlinked relationship. challenge
  3. Nationality. First step
    - i. What nationality matters?

## Majority foreign owned firms listed in Mexican Stock Exchange

**These firms use local and foreign saving for additional funding**

- 1) IENOVA. Sempra Energy USA
- 2) Grupo Financiero Santander. Banco Santander Spain
- 3) Wal Mart de México y Centro America. Wal Mart Stores USA
- 4) OHL México. OHL Spain.

## Majority foreign owned firms issuing debt in Mexican Stock Market

These firms use local and foreign saving for additional funding

- 1) IENOVA. Sempra Energy USA
- 2) Volkswagen
- 3) General Motors
- 4) Daimler
- 5) Caterpillar
- 6) ABENGOA
- 7) Telefónica

## Majority foreign owned firms that use Mexico as investment platform

- 1) Wal Mart (Centro America)
- 2) CITICORP. (USA)
- 3) BBVA (USA)



## Mexican firms that use third countries as investment platform

- 1) CEMEX (Spain)
- 2) Minera Mexico (USA)
- 3) Bimbo (USA and Spain)
- 4) Kuo (Spain)
- 5) America móvil (Austria)

## Mexican firms partners of global firms out of Mexico

- 1) Femsa (Heineken, global)
- 2) Coca Cola Femsa (Coca Cola, Latin America, Philippines)
- 3) Arca (Coca Cola , Latin America)
- 4) Alsea (Starbucks, Latin America)
- 5) Grupo Kuo (Repsol, Asia)
- 6) Gigante (Office Depot, Latin America)

## FDI Position in Mexico 2013

	Immediate Counterpart		Adjusting for Roundtrip			Immediate Counterpart		Adjusting for Roundtrip	
	Million USD	%	Million USD	%		Million USD	%	Million USD	%
Total	391,879.1	100.0	391,879.1	100.0	11 Luxembourg	5,842.4	1.5	5,842.4	1.5
1 United States	177,504.9	45.3	172,722.6	44.1	12 France	4,584.9	1.2	4,584.9	1.2
2 Spain	45,020.8	11.5	44,900.6	11.5	13 India	3,212.4	0.8	3,212.4	0.8
3 Netherlands	41,162.9	10.5	41,162.9	10.5	14 Sweden	2,094.4	0.5	2,094.4	0.5
4 Belgium	31,311.7	8.0	31,311.7	8.0	15 US Virgin Islands	1,847.7	0.5	1,847.7	0.5
5 Canada	16,823.8	4.3	16,823.8	4.3	16 Denmark	1,816.5	0.5	1,816.5	0.5
6 United Kingdom	15,497.8	4.0	13,551.2	3.5	17 Brazil	1,751.4	0.4	1,751.4	0.4
7 Switzerland	10,138.8	2.6	10,138.8	2.6	18 Italy	1,313.6	0.3	1,313.6	0.3
8 México		0.0	6,849.2	1.7	19 Bermuda	1,209.8	0.3	1,209.8	0.3
9 Germany	9,975.5	2.5	9,975.5	2.5	20 Korea, Republic of	1,160.8	0.3	1,160.8	0.3
10 Japan	8,621.7	2.2	8,621.7	2.2	21 Singapore	1,160.0	0.3	1,160.0	0.3

## Outward FDI Position of Mexico 2013

Rank	Country or territory	Million USD	%	Rank	Country or territory	Million USD	%
	Total	136,523.0	100.0				
1	United States	36,981.0	27.1	11	Costa Rica	1,401.0	1.0
2	Netherlands	25,392.7	18.6	12	Hungary	1,182.0	0.9
3	Spain	25,388.8	18.6	13	Honduras	1,102.2	0.8
4	Brazil	19,146.2	14.0	14	Guatemala	827.2	0.6
5	Chile	3,882.1	2.8	15	Venezuela, República Bolivariana de	815.7	0.6
6	United Kingdom	3,616.3	2.6	16	Austria	781.1	0.6
7	Colombia	2,252.3	1.6	17	Philippines	753.0	0.6
8	El Salvador	1,873.2	1.4	18	Panama	717.6	0.5
9	Ecuador	1,633.1	1.2	19	Nicaragua	440.2	0.3
10	Switzerland	1,455.1	1.1	20	Germany	353.3	0.3

## FDI flows ultimate investor and Immediate counterpart Country

Foreign Direct Investment in Mexico									
Millions USD. Sample of transactions of 2013 to 2015									
Country or Territories	Ultimate investor			Immediate counterpart country			Differences		
	Rank	Million USD	%	Rank	Million USD	%	Rank change	Million USD	%
United States of America	1	11,339.5	27.7	1	12,212.4	29.8	0	-872.9	-2.1
Spain	2	6,301.5	15.4	3	5,979.8	14.6	-1	321.7	0.8
Netherlands	3	5,643.5	13.8	2	9,139.3	22.3	1	-3,495.8	-8.5
Canada	4	4,563.2	11.2	4	4,523.6	11.1	0	39.6	0.1
Mexico	5	2,295.6	5.6			0.0	5	2,295.6	5.6
Luxemburg	6	1,734.9	4.2	5	2,548.5	6.2	1	-813.6	-2.0
Japan	7	1,715.9	4.2	7	1,073.7	2.6	0	642.1	1.6
Germany	8	1,672.0	4.1	6	1,661.9	4.1	2	10.1	0.0
Belgium	9	1,233.7	3.0	109	-123.1	-0.3	-100	1,356.8	3.3
Korea, Republic of	10	1,126.8	2.8	22	58.4	0.1	-12	1,068.4	2.6
France	11	623.1	1.5	11	510.9	1.2	0	112.2	0.3
United Kingdom	12	543.7	1.3	9	567.6	1.4	3	-23.9	-0.1
Brazil	13	420.7	1.0	10	391.8	1.0	3	28.9	0.1
Switzerland	14	379.7	0.9	8	704.2	1.7	6	-324.6	-0.8
Italy	15	340.0	0.8	13	355.2	0.9	2	-15.2	0.0
Total 15 Countries or Territories		39,933.7	97.6		39,604.4	96.8		329.3	0.8
Total 111 Countries or Territories		40,921.4	100.0		40,921.4	100.0		0.0	0.0

## Conclusion

- 1) It is very important to know all the property chain of the multinational companies.
  - 1) The origin and destination of the FDI help to understand the globalization process and to study the benefits and costs of cross border investment.
  - 2) All the countries need to work in producing better statistics. The statistics compiler need to find ways to cooperate despite confidentiality restrictions.
- 2) Where the resources used for investment were saved is less important than the nationality and sector of those who use this savings



# Assessing international capital flows after the crisis

THANK YOU



IFC Satellite meeting at the ISI World Statistics Congress on “Assessing international capital flows after the crisis”

Rio de Janeiro, Brazil, 24 July 2015

## Views from the ground: remarks on the BPM6 adoption<sup>1</sup>

Livio Ribeiro,

Brazilian Institute of Economics and Fundação Getulio Vargas

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<sup>1</sup> This paper was prepared for the meeting. The views expressed are those of the author and do not necessarily reflect the views of the BIS, the IFC or the central banks and other institutions represented at the meeting.



# Views from the ground: Remarks on BPM6 adoption

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Ever since the publication of the fifth edition of the *Balance of Payments and International Investment Position Manual* (BPM5) in 1993, several important developments associated with globalization, financial, and technological innovation have occurred in the world's economy. Accordingly, these have led to the necessity of improvements on the methodological framework used for the compilation of Balance of Payments (BOP) data.

In order to tackle these demands, the IMF released the sixth edition of the *Balance of Payments and International Investment Position Manual* (BPM6) in 2009, setting up a strategy for its worldwide implementation in the following years. Moreover, the BPM6 has been revised and updated in parallel with the *2008 United Nations System of National Accounts* (SNA08), enhancing the consistency between International and National Accounts.

When accessing the external vulnerability of a given country, BPM6 is a better analytic tool than previous methodologies. Not only it incorporates all recent economic developments to propose new concepts for external accounts, but it also enhances the *International Investment Position* (IIP) by emphasizing the integrated analysis of stocks and flows for the external sustainability's evaluation<sup>1</sup>.

Parallel to the methodological issues, a key aspect of BPM6 implementation is the communication of its improvements to the general public. The IMF is aware of that, and has proposed a strategy for communicating the BPM6 migration on its 2013 paper "*Best Practices for Communicating the BPM6 Migration*" (BOPCOM-13/07) – a guideline to be undertaken by national compilers to enable their users to anticipate and understand the modifications made on the external sector data (BOP and IIP).

It's important to realize, however, that this general strategy must be adapted for each country, given its own challenges and necessities. For instance, the new IMF statistical framework is not readily met by country-level data surveys, potentially leading to data gaps or significant revisions of previously compiled data. Needless to say, these pose significant challenges both for compilers and users, increase noise and make the understanding of BPM6 much more difficult.

Above all, data users should be alerted to any major methodological changes as early as possible, giving them time to prepare themselves for the new accountability methods. Moreover, national compilers should try to think as data users, asking about the main challenges when dealing with the new data and setting a strategy to overcome them.

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<sup>1</sup> In the words of the Central Bank of Brazil, "*By promoting an integrated view of international transactions on the composition and magnitude of assets and liabilities according to functional investment categories (direct investment, portfolio investment, and other investment), type of instrument and maturity, external sector statistics produced under the updated methodology will provide users with enhanced analytical content*"

In general, a desirable communication strategy would be threefold. Some measures should be taken before the release of BPM6-basis data. Above all, a comprehensive communications plan is needed, listing not only goals, actions, and a timetable for migration, but also setting up the coordination among country's data compilers (if applicable<sup>2</sup>). Specifically, users should be aware of the historical time period that will be revised, with any breaks in the time series due to the introduction of the new methodology being highlighted.

Knowledge dissemination should be done by articles and papers, summarizing the key methodological and presentational changes, highlighting those with substantial impact on data. Selected user's feedback could also improve knowledge dissemination, allowing the preparation of a set of Frequently Asked Question (FAQ) that would assist all users in their understanding of the new methodology. At last, a communication channel with the data compiler should be readily available for every data user.

Furthermore, there are measures that need to be taken simultaneously to BPM6 migration. A new press release, consolidating previous information, should be issued, also providing any further insights. In the case that full historical series are not revised, compilers should explain the reasons for not doing so, identifying the main data breaks.

Meanwhile, a new set of BOP and IIP metadata should be issued, providing information on new concepts, data sources and estimation methods. Also, user's understanding of the methodological changes from BPM5 to BPM6 would be enhanced by additional explanations through comment boxes and footnotes on regular official communication instruments (such as Quarterly Inflation Reports), keeping them aware of the ongoing modifications.

At last, some measures have to be implemented after the first release of BPM6 data. Most likely, the majority of data users will understand the methodological changes long after the first batch of available data. Therefore, continuous support to data users is needed, updating the set of FAQ's after public consultations, setting up methodology seminars, and disseminating articles and papers which explain BPM6's impacts on key aggregates.

On that front, it is important to realize that most data users do not learn from scratch, but by comparison of methodologies. On that sense, introducing a longer back-run of historical data is a central piece of communication. Ideally, that should be available with the first release of the new data; if not possible, an official translator (from BPM6 to BPM5) would enhance communication, reducing the noise intrinsic to any methodology revamp<sup>3</sup>.

It is also important to consider country-specific characteristics when designing the communication strategy, as the impact of BPM6 migration tends to vary among economies. On that matter, the international experience, usually from the compiler's perspective, could be an important input. The potential challenges are numerous; the adoption of BPM6 can lead to

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<sup>2</sup> BPM6 and SNA08 adoption should be seen as complementary steps on enhancing national statistics standards, by allying them with best international practices. It's important to realize that every country has a specific compiler's structure, and not always the same agency deals with national and international accounts. If that happens, coordination efforts are essential to minimize noise and improve the effectiveness of the methodological revamp.

<sup>3</sup> "It would likely cause data users some problems if, for example, data referring to earlier years are available only on a BPM5 basis and data referring to later years are available only on a BPM6 basis, suggesting that production of an historical time series for BPM6 basis data should be carefully considered". Strategy for Implementing the Sixth Edition of the Balance of Payments and International Investment Position Manual, IMF BOPCOM-09/08.

significant revisions on previous data and requires changes on entrenched analytical practices, increasing user's resistance to the new methodology.

In the one hand, modifications may occur within the balance of payments, keeping the general aggregates. That has happened especially in economies with a significant share of trade in services, which have undergone major changes under BPM6 to reflect the growing importance and contribution of cross-border services transactions to global trade<sup>4</sup>, and in economies which saw major reclassifications within the financial account – with Singapore being a good example of both<sup>5</sup>. On that case, communication challenges tend to be smaller, with changes due to reshuffle of existing accounts.

In the other hand, there are economies, such as Chile<sup>6</sup> and Brazil<sup>7</sup>, on which the adoption of BPM6 increased the number of categories to be measured, leading to considerable revisions in both the current account and its financing sources. If that happens, communication challenges tend to be considerably bigger. Not only the history has to be re-written, what increases noise by itself, but there are usually data gaps, due to statistical survey restrictions, which demand significant efforts by the compilers and jeopardize the new methodology dissemination. Finally, communication challenges can also derive from more prosaic reasons; in Russia, for example, the new sign convention of the BPM6 led to unexpected problems with data users<sup>8</sup>.

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<sup>4</sup> In particular, the main changes include the introduction of maintenance and repairs as a major services category, the inclusion of FISIM in financial services and the reclassification of *merchandising* from the services account to the goods account.

<sup>5</sup> In Singapore, the adoption of BPM6-basis data (2012) led to upward revision on its goods account (mainly due to the inclusion of goods under *merchandising*) and downward revision on its service accounts (with the removal of *merchandising* partially offset by the movements of maintenance, repairs and processing fees), summing up to minor current account adjustments. Meanwhile, its financial account incorporated financial derivatives, leading to a significant reshuffle within its functional categories; besides 2009, when a 40% downward revision was due to higher net outflows on portfolio and financial derivatives, all other adjustments were minor. For further information, refer to "Implementation of IMF Balance of Payments and International Investment Position Manual. Sixth Edition in Singapore's Balance of Payments", Singapore Department of Statistics (February 2012).

<sup>6</sup> The current account changed mainly due to adjustments in exports and services, mostly associated with abrupt copper price corrections in the 2008-2009 biennium. The biggest revision was in 2008, when the current account deficit changed from 1,9% of GDP (BPM5) to 3,2% of GDP (BPM6). On the financial account, revisions were due to incorporation of commodity-linked financial derivatives and adjustments in trade credits, aligned with the aforementioned revisions to exports; the biggest effects also happened in 2008. For further information, refer to "Implementing the IMF Balance of Payments and International Investment Position Manual, sixth edition, in Chile's external statistics", Banco Central de Chile, Estudios Económicos Estadísticos n.89 (March 2012).

<sup>7</sup> In Brazil, The adoption of the new standards was not just a matter of sign conventions or new definitions; under BPM6, the Brazilian balance of payments incorporates more transactions, changing both the current account and its financing sources. On the negative side, the current account deficit has increased. Full BPM6-standard data led to minor revisions of last year's current account deficit from 4,2% of GDP (BPM5) to 4,4% of GDP (BPM6); however, preliminary data from previous years show a more sanguine scenario – for instance, 2010's current account deficit widened from 2,2% of GDP (BPM5) to 3,5% of GDP (BPM6). On the positive side, financing sources have been revised upwards, especially direct investments and debt securities traded in the domestic market. On that stance, the external financing pattern improved under BPM6 - in 2014, foreign direct investments now cover 93% of the current account deficit, compared to 68% under BPM5. For further information, refer to "External Sector Statistics, Methodological notes nr.2 – Current Account", Central Bank of Brazil (April 2015) and "External Sector Statistics, Methodological notes nr.2 – Direct investment and primary income (earnings)", Central Bank of Brazil (April 2015).

<sup>8</sup> "Quite unexpectedly, a BPM6-recommended change of the sign convention turned out to be problematic. Over the years Russian macroeconomic policy-makers, government economists and analysts got used to the BPM5 signs, and so the transition to BPM6 sign convention was met with confusion, particularly within the financial account. As a temporary solution to this rather psychological than technical problem, in addition to the new BPM6 presentation, it has been decided to also maintain the previous BPM5 presentation with "+" for credits and "-" for debits. For that

Communication jitters could also arise only due to unfortunate timing. Apparently that was the case of Australia, which implemented both SNA08 and BPM6 data in September 2009. Even with a multi-year communication plan, well designed coordination efforts among official agencies and virtually no impact on external sector aggregates, user's reactions to the new data were intense. According to the Australian Bureau of Statistics<sup>9</sup>, it was mainly a question of timing; users were more concerned with interpreting new data in the context of the Global Financial Crisis than with issues related to the new standards. On that sense, exogenous factors should be considered when communicating the BPM6 migration.

As a final note, it is important to stress that the biggest noise, in the user's perspective, usually does not come from the adoption of a new methodology itself, but rather from data gaps and uncertainty when merging the old and the new metrics. On that sense, longer overlap periods and an agenda of training seminars would boost analysis and help disseminate knowledge by comparisons between BPM5 and BPM6 data. Furthermore, providing updated micro data (with metadata) would disseminate information, allowing each user to manipulate data as it pleases. Finally, data compilers should increase the interaction with data users; with a better understanding of the relevant questions, communication practices would be highly improved.

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*reason, a special footnote has been added to each published BOP data table with an explanation of the mathematical signs' use". Strategy for Communicating to Users the Introduction of BPM6, IMF BOPCOM-12/08.*

<sup>9</sup> *"The difficulties users were experiencing were reduced to some extent by the communication program the ABS had put in place, to inform users in well advance about the nature of the changes, the likely impacts and the detailed changes to published tables, spreadsheets and other products. Even so this communication program did not reach all users and some were surprised. Others were aware that changes would occur, but the impacts on their work were not apparent until data were released". Implementation of 2008 SNA and BPM6 in Australian Statistics, IMF BOPCOM-12/09.*



Irving Fisher Committee on  
Central Bank Statistics

BANK FOR INTERNATIONAL SETTLEMENTS

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IFC Satellite meeting at the ISI World Statistics Congress on *"Assessing international capital flows after the crisis"*

Rio de Janeiro, Brazil, 24 July 2015

## BPM6 communication and analysis challenges in the euro area<sup>1</sup>

Aurel Schubert, European Central Bank

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<sup>1</sup> This presentation was prepared for the meeting. The views expressed are those of the author and do not necessarily reflect the views of the BIS, the IFC or the central banks and other institutions represented at the meeting.

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EUROPEAN CENTRAL BANK

EUROSYSTEM

**Aurel Schubert**  
Director General Statistics  
European Central Bank

# **BPM6 communication and analysis challenges in the euro area**

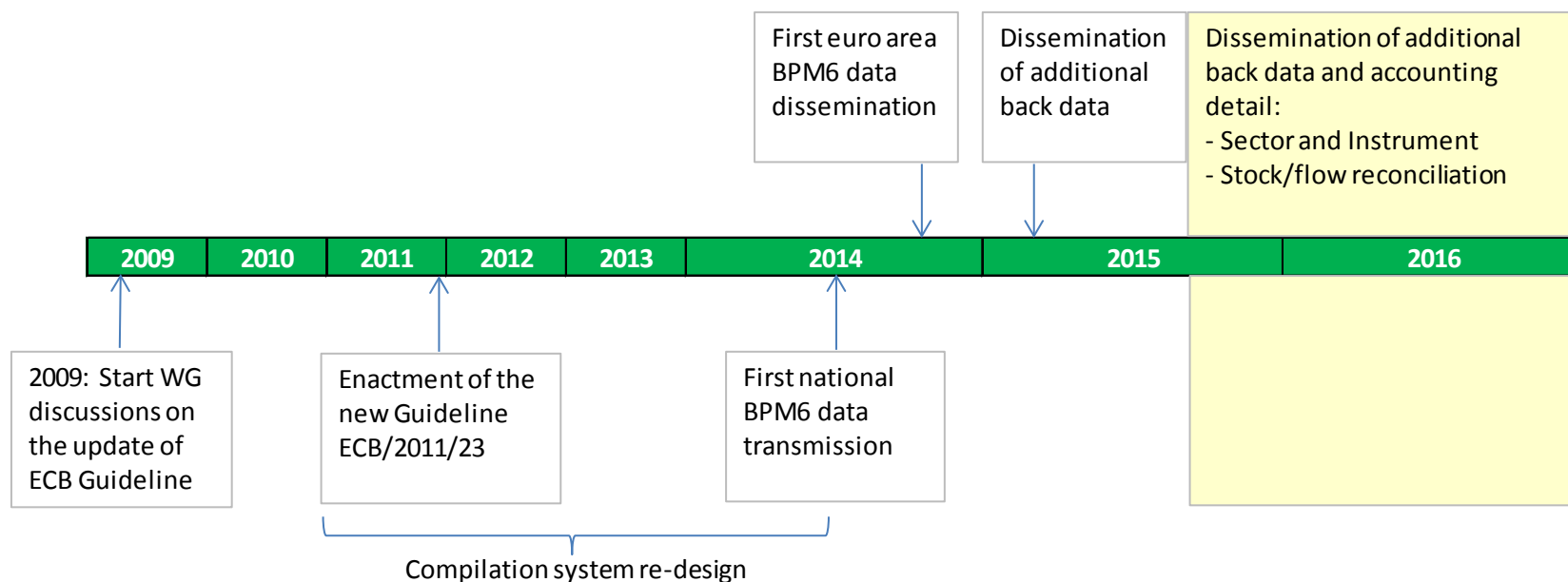
**Panel Session 4**

IFC Satellite meeting at the ISI 60<sup>th</sup>  
World Statistics Conference: “Assessing  
internal capital flows after the crisis”  
Rio de Janeiro, 24 July 2015

## Overview

- 1** The introduction of BPM6 in the euro area - timeline
- 2** Major changes and challenges
- 3** Special features and illustrations
  - 3.1** From a net flow analysis to assets and liabilities
  - 3.2** From transactions to a comprehensive stock/flow analysis
  - 3.3** Dealing with geographical heterogeneity
  - 3.4** Communicating on errors & omissions

## BPM6 introduction - timeline





### Major challenges (national and euro area)

- **New methodology and (in general) compilation systems**
  - **Selected methodological changes (e.g. FDI, FISIM, etc...)**
  - **Revamp of national compilation systems (abandon International Transactions Reporting Systems - ITRS)**
  - **New (national) data sources and compilation practices**
- **Introduction of new technical infrastructure for data transmission**
  - **New codification scheme BOP-DSD**
  - **New transmission standard (SDMX-ML)**
- **Scarce resources**
  - **Deliver (new system) in parallel with regular BPM5 production...**

# Communication

- **To internal users**
  - **Several seminars on methodological and technical changes**
  - **Technical support to adjust analytical tools**
- **To all users**
  - **Webpage with comprehensive information on the changeover process**
    - **Timetable**
    - **Methodological and technical changes**
    - **Impact assessment, etc...**
  - **Articles in the Monthly Bulletin: “pre” and “post” introduction**
  - **“Alias” linking BPM5 and BPM6 concepts**
  - **Detailed methodological information: “Bop book”**

# The new data requirements – Guideline ECB/2011/23

- **Monthly balance of payments (t+44)**
  - **Main categories (including basic sector detail)**
- **Quarterly bop/iip (t+85/82)**
  - **Comparable with the IMF standard components**
  - **Detailed instrument and sector breakdowns**
  - **Detailed geographical counterpart: main partners**
  - **Revaluations and other changes in volume**
- **International Reserves assets template (t+10)**
  - **Identical to the IMF template**

# The new data requirements – Guideline ECB/2011/23

- **First release of BPM6 b.o.p./i.i.p. data for the euro area:**
  - **First release of quarterly data: 30 October 2014**
  - **First release of monthly data: 19 November 2014**
  
- **Publication of back data:**
  - **From 2013 Q1 – 2014 Q2: October 2014**
  - **From January (Q1) 2009 onwards : April 2015**
  - **Back to 1999: towards the end of 2015**

# Impact of the BPM6 change-over on the data (MIP indicators)

Current Account balance (3 year moving average as % of GDP)	
5% to 0.5%	MT, ES, FR,
0.5% to 0%	BE, PT, CY, SK
0% to -0.5%	GR, IT, SI, LT, FI, LU, NL
-0.5% to -3.5%	DE, EE, AT, LV, IE

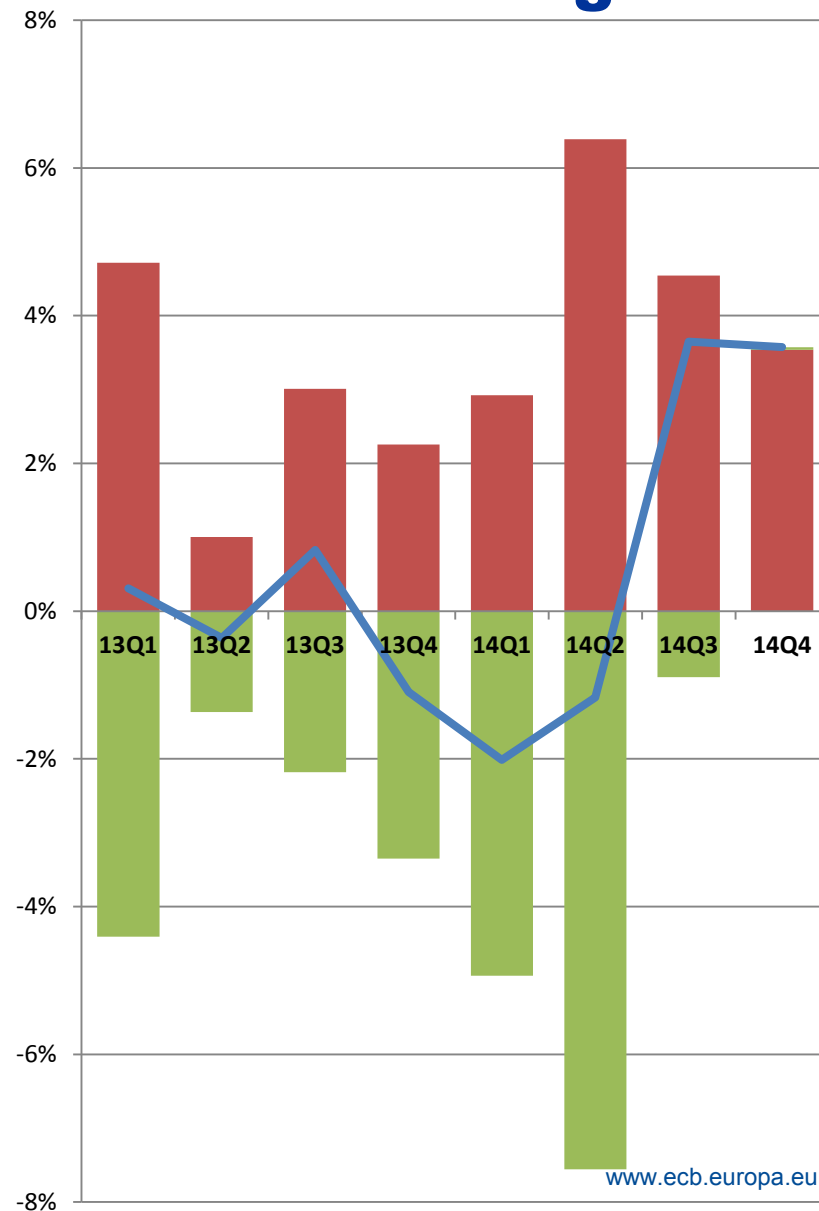
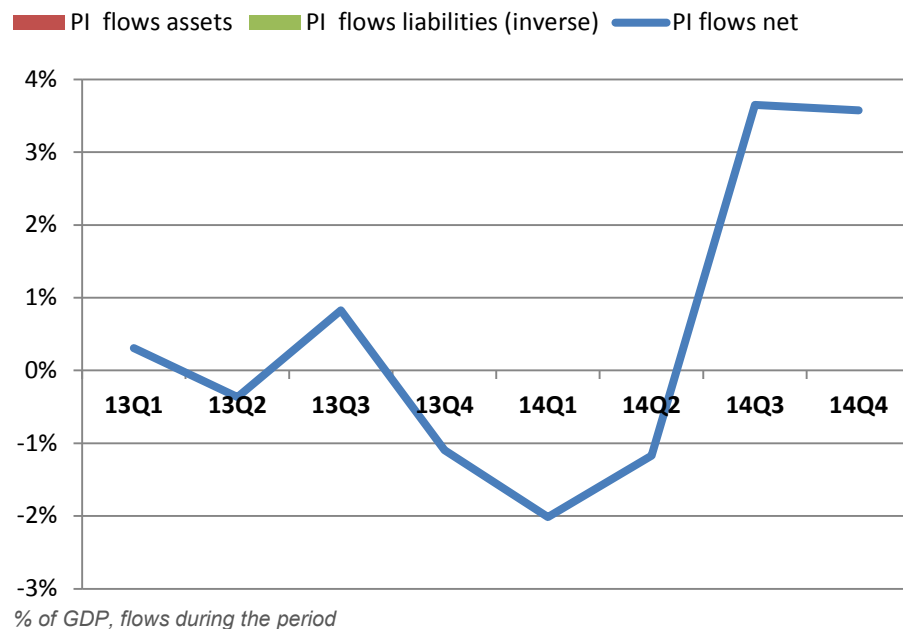
Source: Eurostat

Net International Investment Position (as % of GDP)	
35% to 8%	LU, MT, FR
8% to 0%	ES, PT, SI, EE, BE, SK, IR
0% to -8%	LV, LT, AT, IT, GR, DE, FI
-8% to -75%	NL, CY

Source: Eurostat

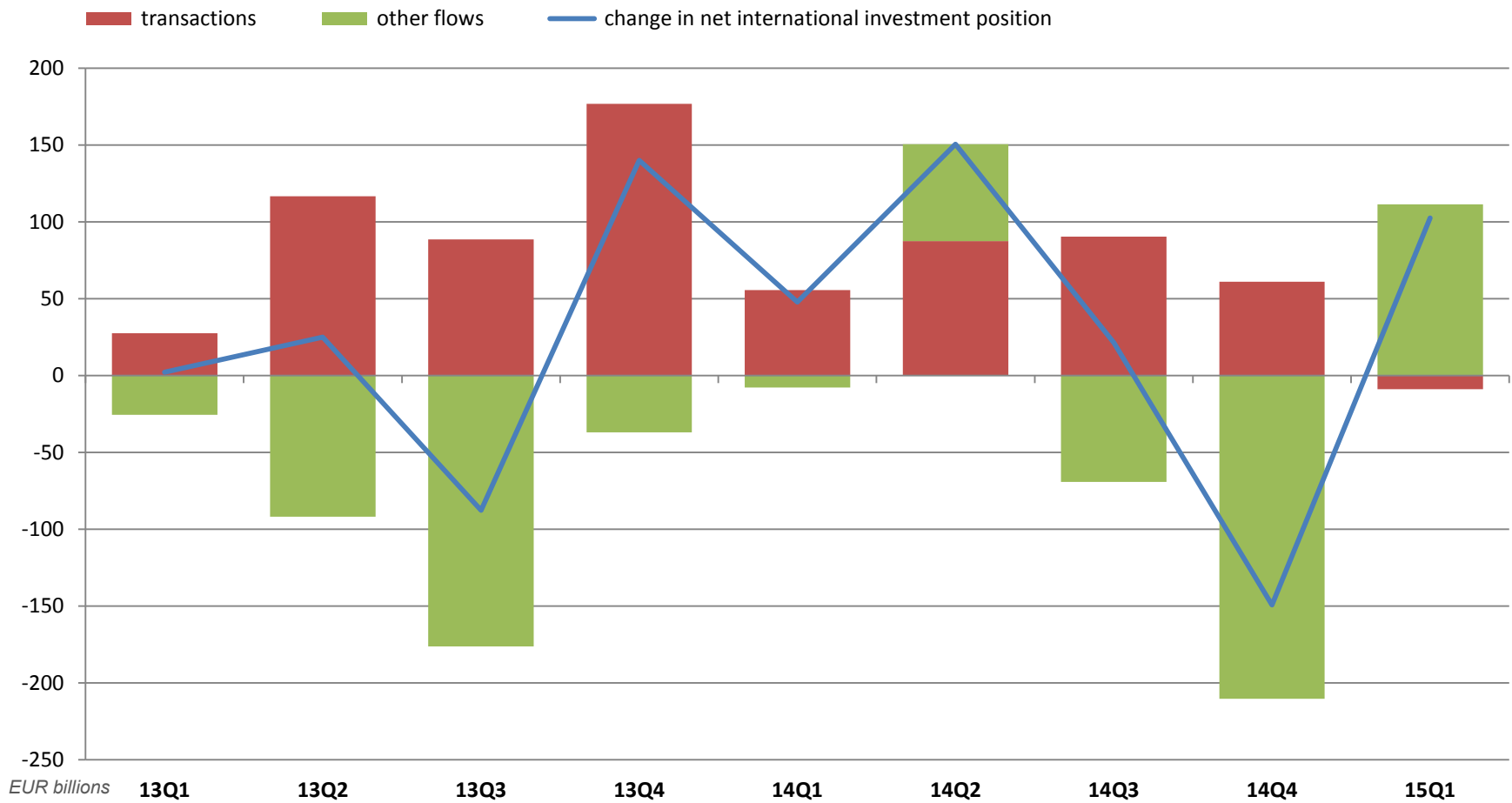
## Judging just on net flows can be misleading!

**Euro area Portfolio Investment flows: net and gross**

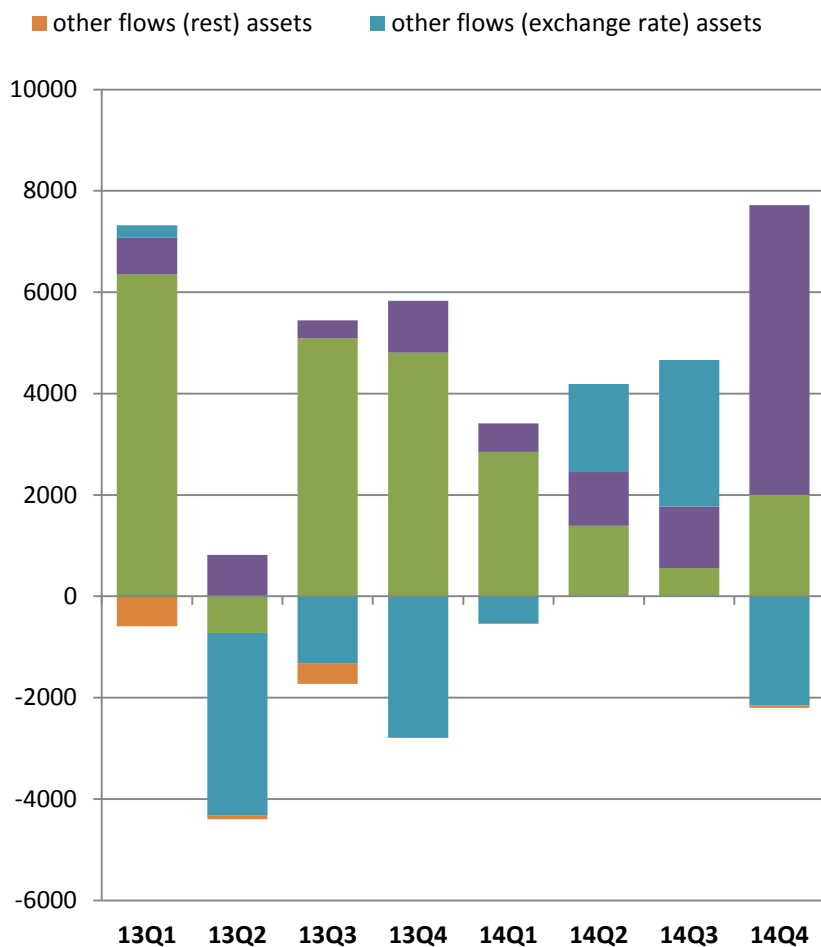


# The role of 'other flows' in changes in the IIP

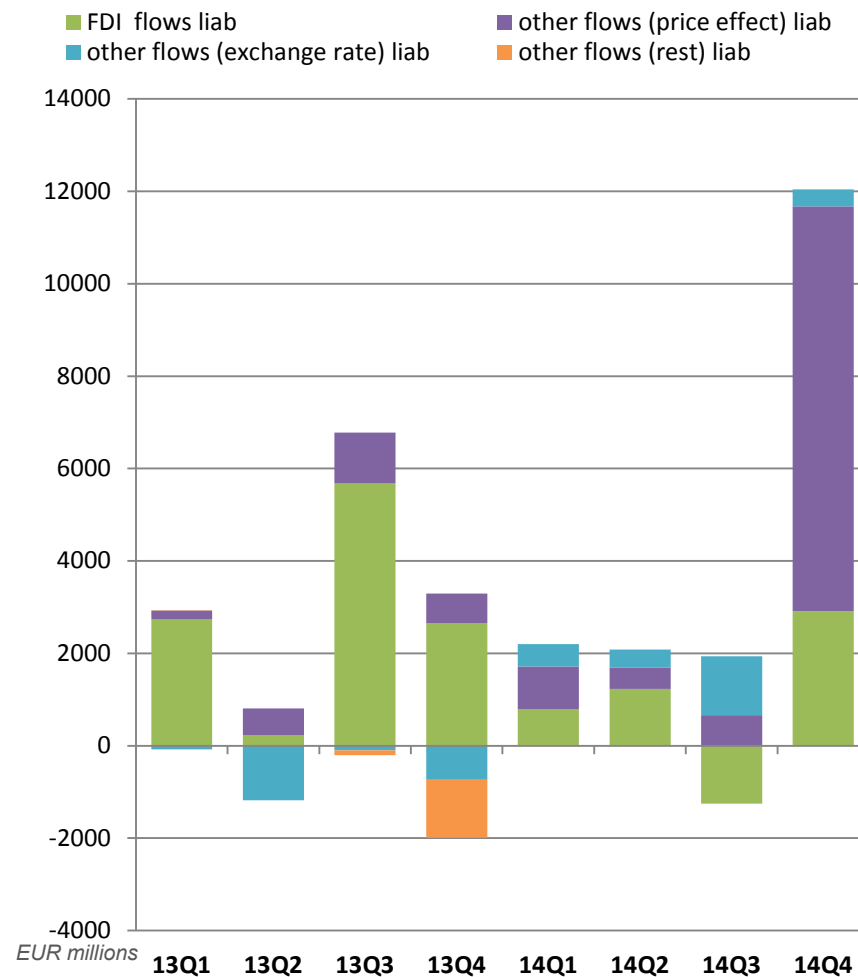
Changes in the net international investment position of the euro area



### Breakdown of Austrian changes in stocks (assets) by 'type' of flow



### Breakdown of Austrian changes in stocks (liabilities) by 'type' of flow

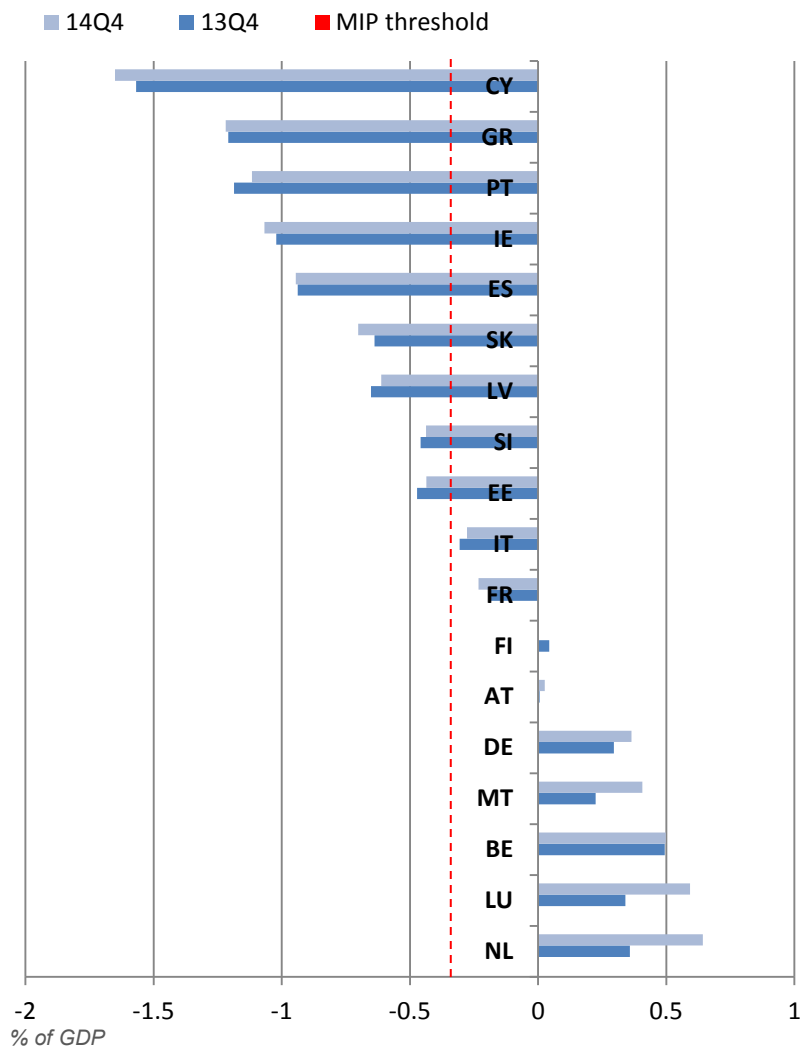


EUR millions

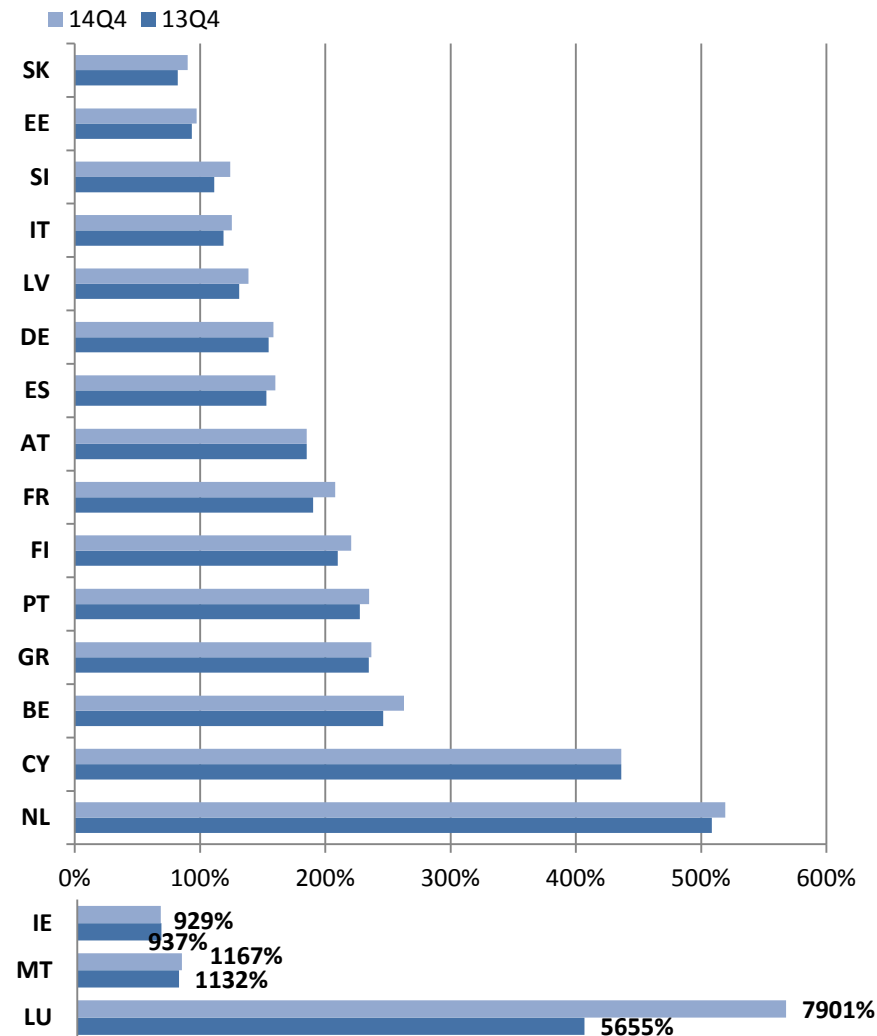


## Large variations in Euro area country data

Net IIP by Euro area member state

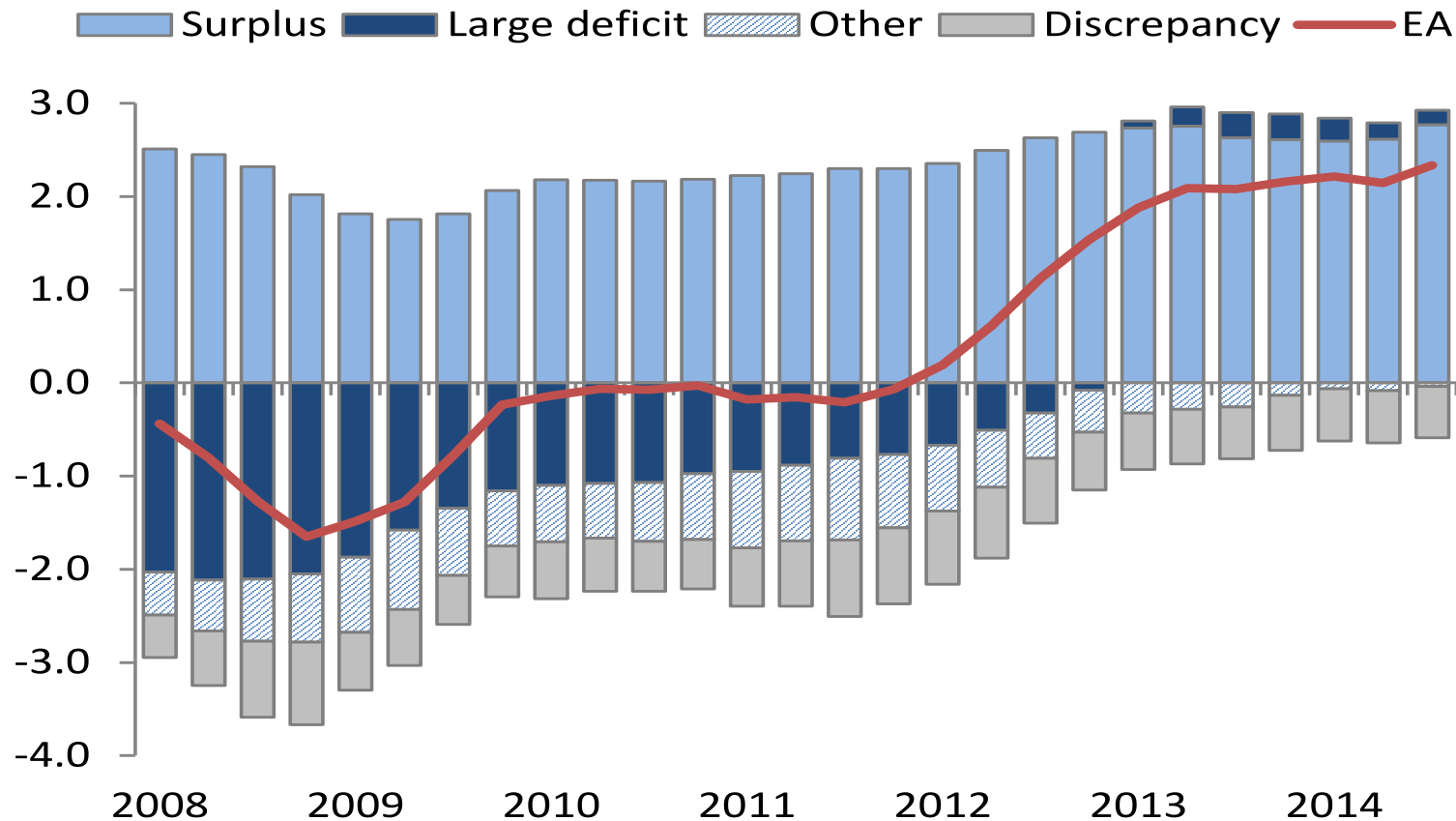


Gross External debt by Euro area member state



## Large variations in Euro area country data

Current account of the euro area

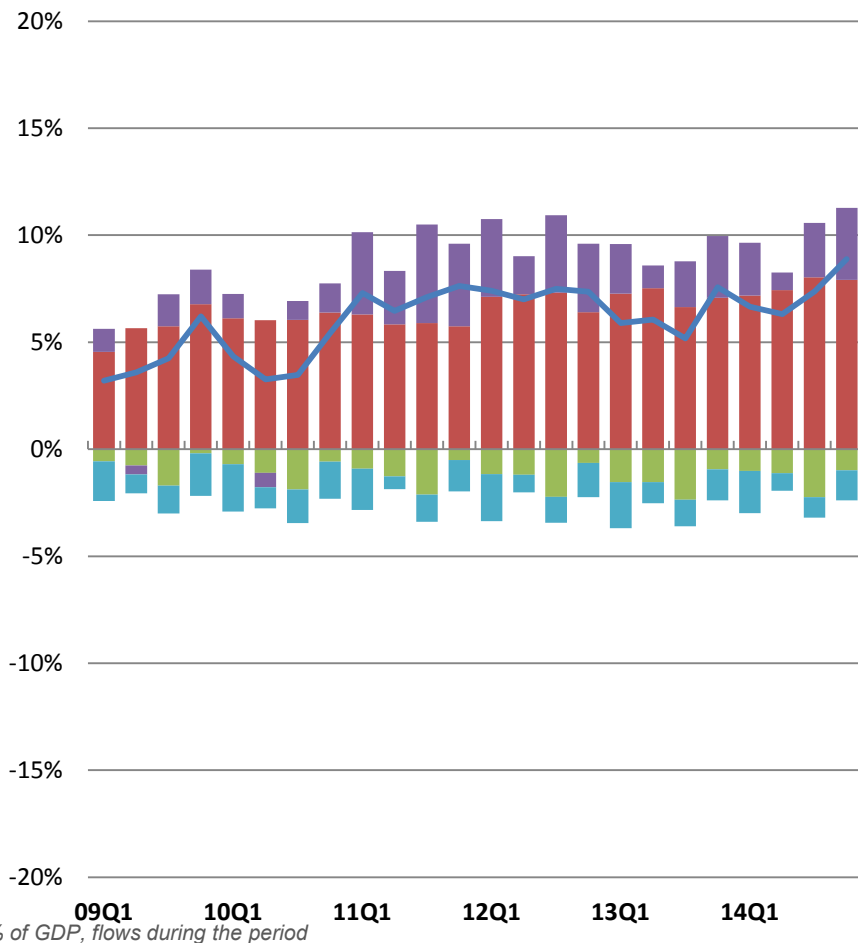


% of Euro area GDP, 4-quarter average

## Large variations in Euro area country data

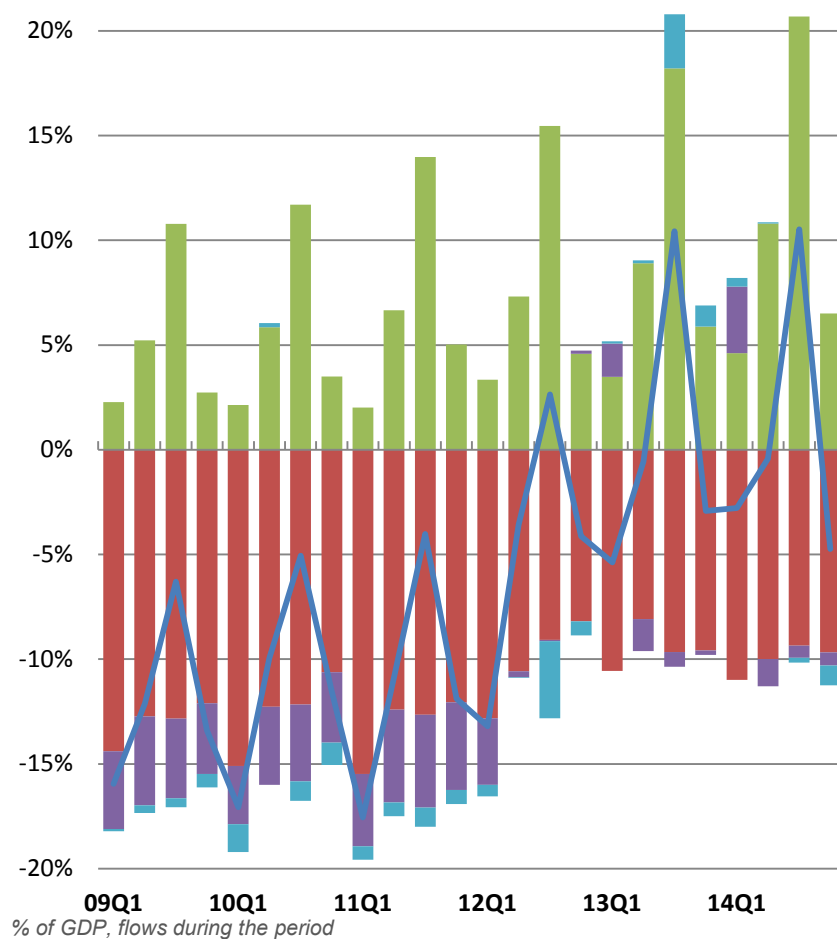
### German current account balance

- trade in goods balance
- primary income balance
- trade in services balance
- secondary income balance
- current account balance



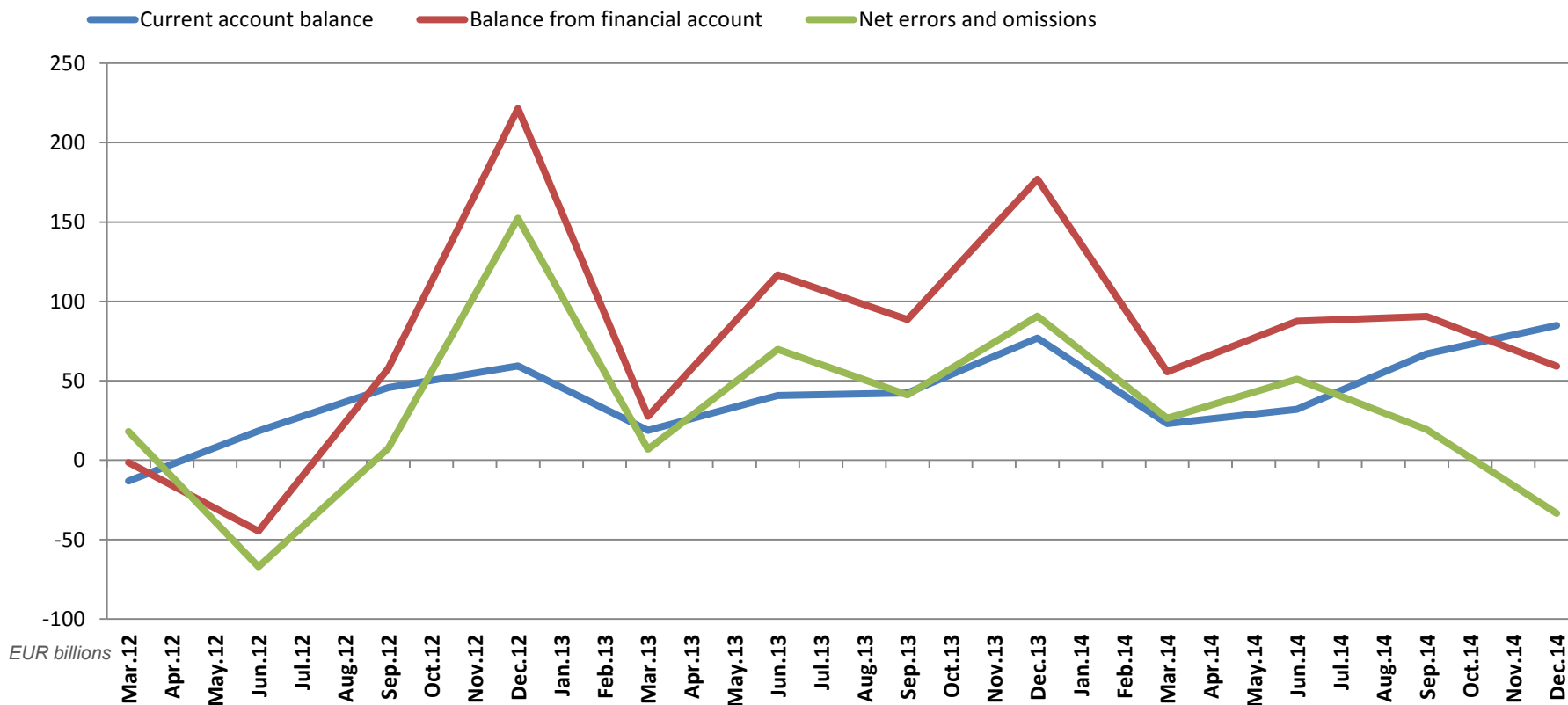
### Greek current account balance

- trade in goods balance
- primary income balance
- trade in services balance
- secondary income balance
- current account balance



## How to communicate on errors & omissions?

Euro area quarterly current and financial accounts balances and net errors and omissions



Two sources of errors & omissions in the euro area:

- National errors & omissions
- **Intra-euro area asymmetries**

**Many thanks for your attention!**

**Any question?**





Irving Fisher Committee on  
Central Bank Statistics

BANK FOR INTERNATIONAL SETTLEMENTS

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IFC Satellite meeting at the ISI World Statistics Congress on *"Assessing international capital flows after the crisis"*

Rio de Janeiro, Brazil, 24 July 2015

## Statistician: A sexy job? Yes we can<sup>1</sup>

Jacques Fournier, Bank of France

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<sup>1</sup> This presentation was prepared for the meeting. The views expressed are those of the author and do not necessarily reflect the views of the BIS, the IFC or the central banks and other institutions represented at the meeting.

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# Statistician: A sexy job? ...Yes we can

Irving Fischer Committee  
Satellite Meeting

Jacques Fournier  
24 July 2015, Rio de Janeiro

# A sexy job...

*"I keep saying the sexy job in the next ten years will be statisticians. People think I'm joking, but who would've guessed that computer engineers would've been the sexy job of the 1990s?"*

Hal Varian, Professor of Economy, University of California Berkeley and Google's Chief Economist on Statistics and Data, [The McKinsey Quarterly](#), January 2009



# ...Requesting highly qualified experts

- Not only the ability to collect data, to be able to understand it, to process it **but also the ability to extract value from it, to visualize it, to communicate it**
- Period of economic turmoil since 2007: “**what happened?; which information?; can we trust statistics?**”
  - => Need for dialogue with our users in an **customer-minded** manner: **statistical service-oriented process based on appropriate infrastructure**

# Going beyond data

- ✓ The Banque de France has adapted its communication model by being more **proactive in its strategy**
- A **dedicated access to press releases** via Statistics and publications:
  - **English website** for statistics: 67% of visits come from the USA, 9% from the UK, 4% from Poland and 4% from China
  - **Recasting of publications** more targeted to our heterogeneous users: journalists; economists, students...
  - New **Statistical Data Warehouse**, named **Banque de France Webstat**, for a quick, user-friendly and free-of-charge access to long-time series for researchers

# STAT INFO

7 July 2015

Remuneration on deposits and MMF -  
France  
May 2015

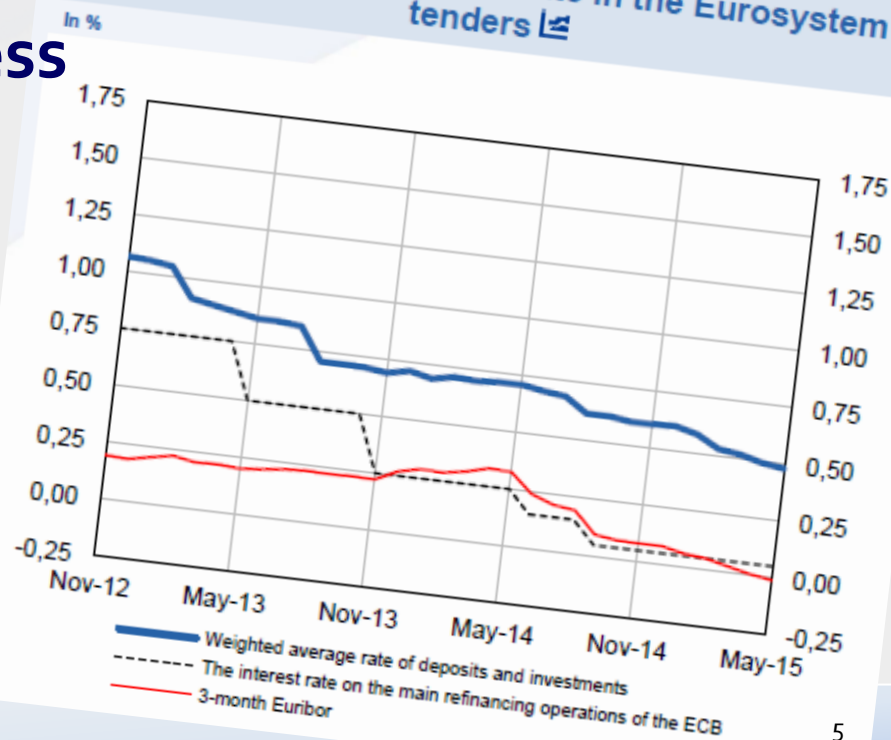
Central Bank message

Interest rates on deposits and monetary assets are broadly unchanged

Users need to be able to access and understand the data themselves

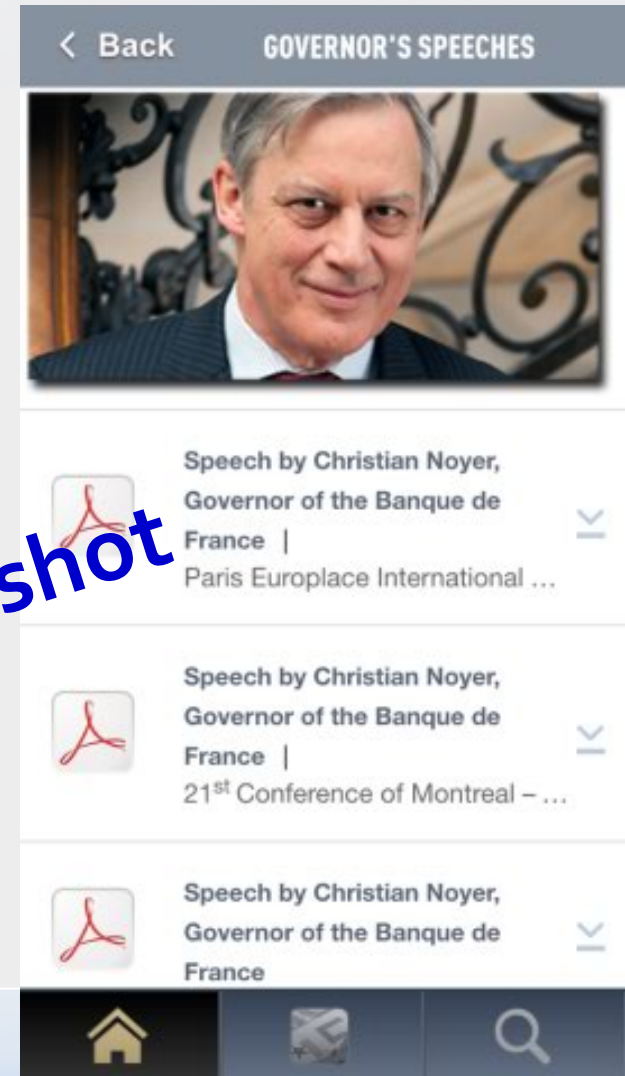
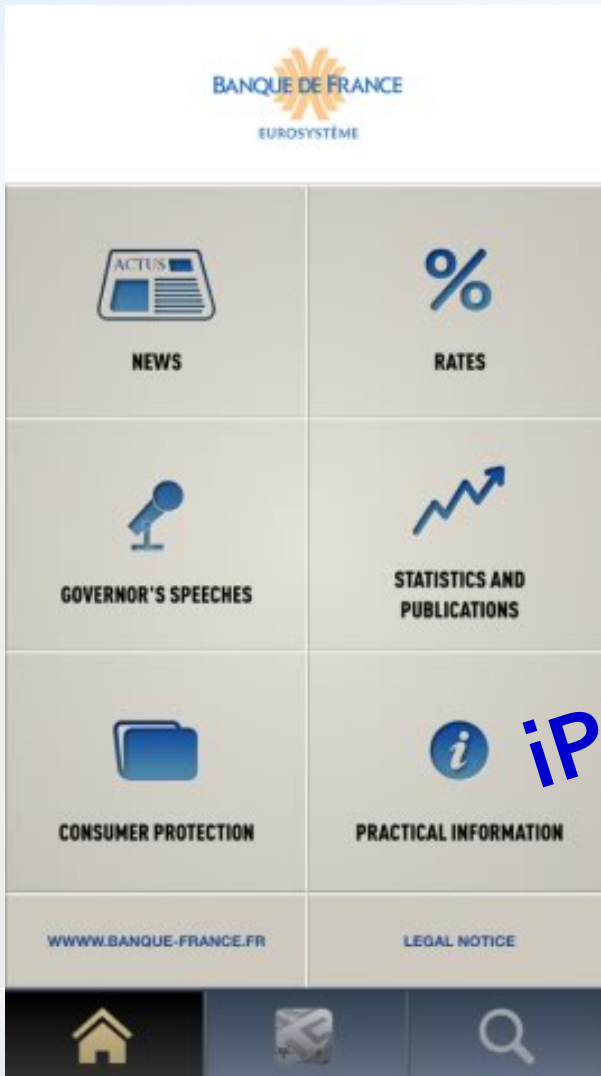
⇒ Webstat: personalised solutions to the users

Deposits and monetary investments, 3-month Euribor and minimum bid rate in the Eurosystem tenders



# Access to press releases on the Mobile App

=> freely available on Google store and Apple store



iPhone screenshot

# Going beyond data

- ✓ Communication in statistics does not only mean dissemination of statistics, but also providing a better understanding to the large public
- The Banque de France is responsible by law for compiling the **Balance of Payments Statistics**: art. L141.6 Monetary and Financial Code
- [Balance of Payments Presentation](#)

# Our internal users: a dedicated solution

## Pooling and Sharing Statistical Series (P3S)

### ✓ Pooling data ...

- To gather data on financial institutions and non-financial corporations
- Collected by the Banque de France and by the Banking and Insurance Supervisory Authority
- While respecting confidentiality rules

### ✓ ...to allow enhanced analysis for all involved departments and for the supervisory authority

- Offering access to internal users on a 'need to know' basis to individual data
- Fostering synergies and economy of scale

# Big Data technology

- ✓ A pragmatic solution based on open source « Big Data » technology to process all kinds and high volumes of data

*"We first have to capture the data, and then we think about how to organize it later"*

Viktor Mayer-Schönberger, Oxford Internet Institute, University of Oxford, Professor of Internet Governance

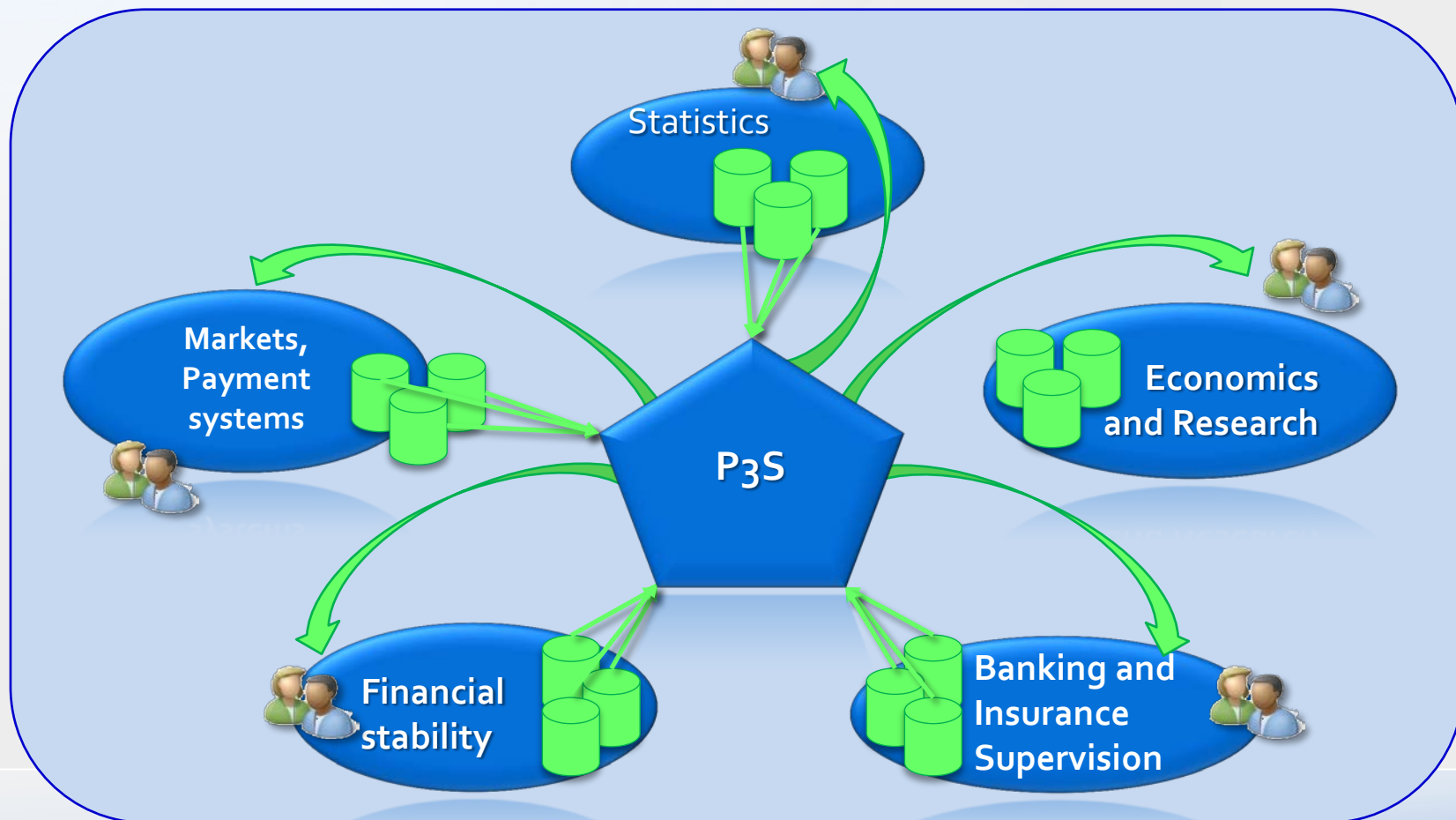
⇒ *"Significant shift in people's thinking"*

- ✓ In practice:

- ✓ Target: 400-500 millions of series; 2000 GB
- ✓ A dedicated 'BigData' platform in the Banque de France  
Datacenter: **all formats are accepted (SDMX-ML, XBRL,..)**

# Key principle

Users use P3S data in their own Information System.  
P3S data (and their metadata) are available in alternative formats (SAS, CSV)





# Dedicated governance: *There is a will, there is a way*

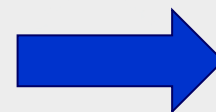
Definition of access policy



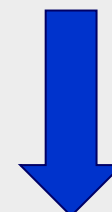
**PVMC**

Updates of  
the white list

(cartography of individual access  
to each dataset)



High level  
monitoring



**P3S PSG**

Annual report to Governor and  
Deputy Governors and presentation to the  
Executive Board

# Communication: an essential dimension of the job

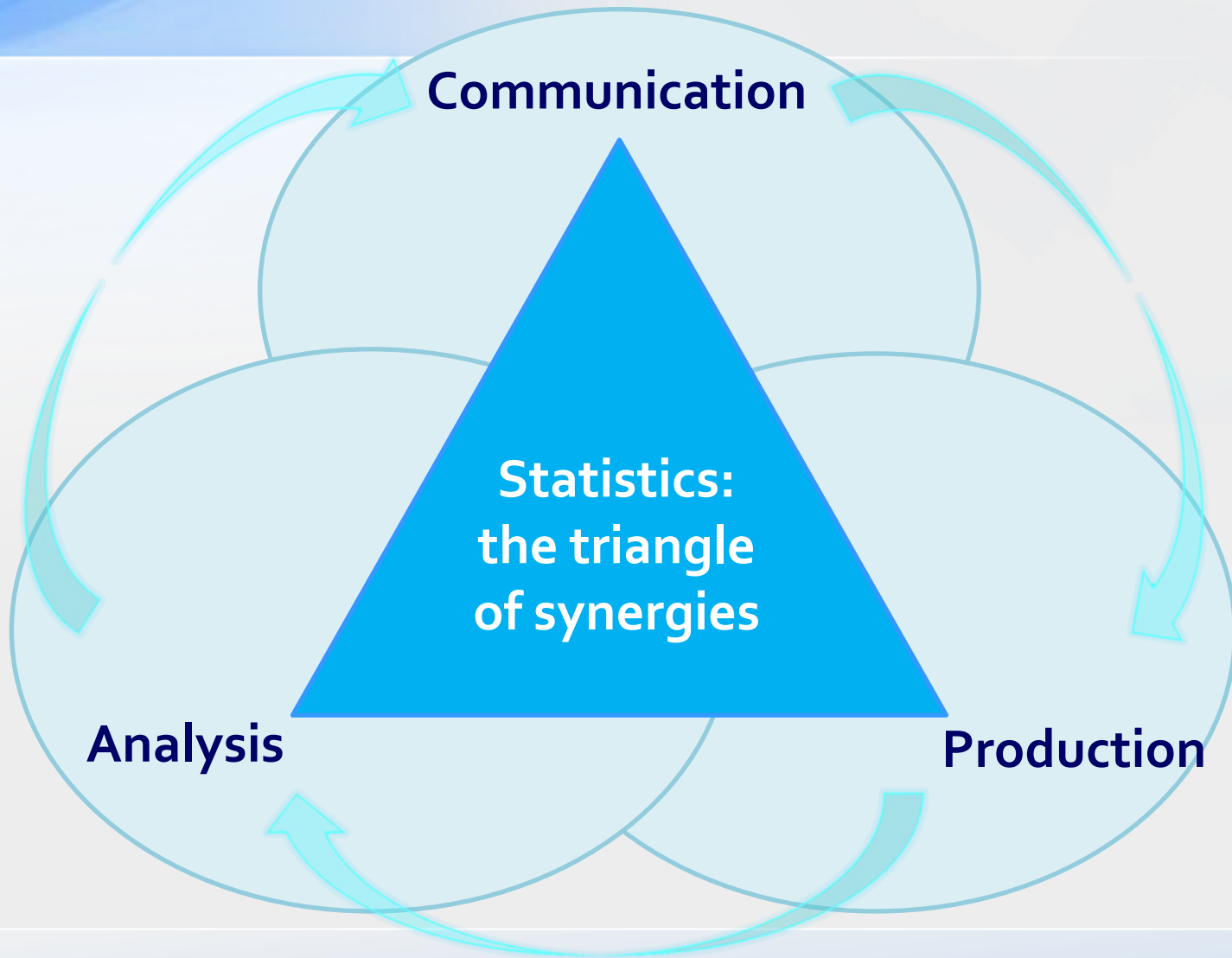
- Enhanced communication is crucial: pillar job of statisticians in 21<sup>st</sup> century
- Our convictions :

*1. Communication should be monitored by both actual producers and communication people*

- In order to be:
- Relevant, clear and customer-friendly

- *2. Statisticians should reflect on data, analyze and communicate them, so as to better produce relevant numbers: to do more than statistics is good for statistics.*

# Compiling statistics: an operating value chain



*Thank you for your attention*

<https://www.banque-france.fr/en/home.html>



IFC Satellite meeting at the ISI World Statistics Congress on “Assessing international capital flows after the crisis”

Rio de Janeiro, Brazil, 24 July 2015

## BPM6 implementation in Poland – communication and analytical challenges<sup>1</sup>

Jacek Kocerka, Central Bank of Poland

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<sup>1</sup> This paper was prepared for the meeting. The views expressed are those of the author and do not necessarily reflect the views of the BIS, the IFC or the central banks and other institutions represented at the meeting.

# BPM6 implementation in Poland – communication and analytical challenges

Jacek Kocerka – Narodowy Bank Polski

The aim of this paper is to present the approach adopted by Narodowy Bank Polski (NBP) in implementation of new requirements compliant with 6<sup>th</sup> edition of Balance of Payments and International Investment Position (BPM6). The focus is on communication and analytical challenges, crucial from the user point of view.

Pursuant to the provisions of the Act on Narodowy Bank Polski tasks performed by the central bank include: *"development of money and banking statistics, balance of payments and international investment position."* Therefore, NBP compiles: balance of payments, international investment position, external debt, international trade in services and foreign direct investment.

Balance of payments statistics like any kind of macroeconomic statistics which covers the whole economy is developed in Poland based on a variety of data sources. Data is derived from public statistics (e.g. international trade in services), from other research conducted i.a. for the balance of payments (tourism) or directly from entities that carry out financial transactions with foreign entities or intermediate in such transactions. Should direct data sources prove insufficient a compilation of the estimates is performed.

The new, BPM6 compliant, data has been published by NBP at the end of September 2014, however certain preparations to this release have started several years earlier. Shift in compilation system from settlement to direct reporting has been initiated in 2007 following changes implemented in European legislation. Such a substantial change required new data collection and compilation IT system, development of which has started at the beginning of 2010. One of the most important feature of this new system was implementation of new BPM6 requirements, but a lot of effort has been put to achieving full consistency with the National Accounts, both financial and non-financial.

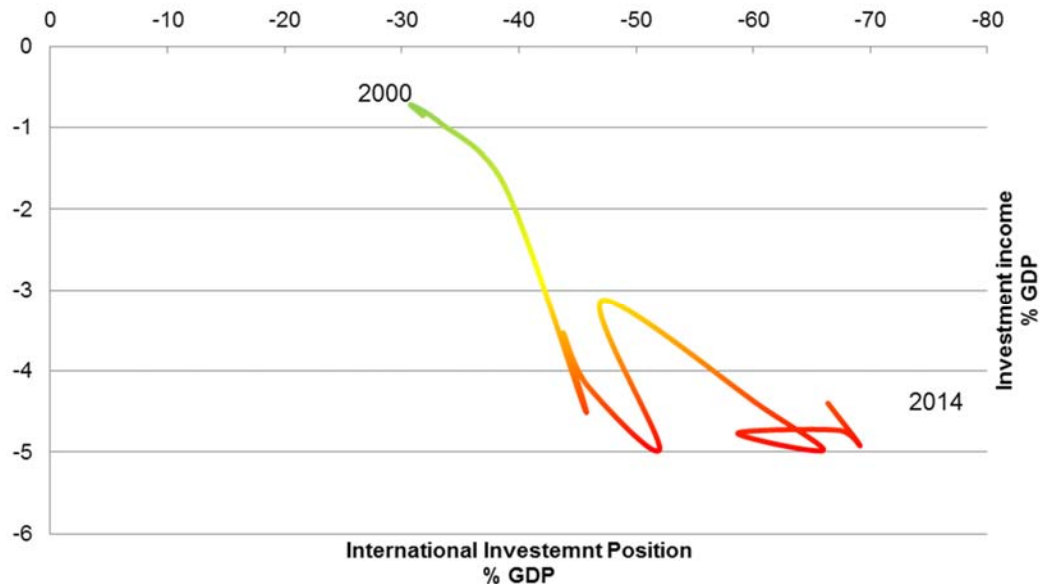
Consistency with national accounts and joint introduction of European System of Accounts (ESA 2010) and BPM6 has created an opportunity for a joint seminar with the Central Statistical Office (CSO). At the seminar statisticians from both NBP and the CSO presented the most important changes introduced to the bop by the new methodology. Moreover Narodowy Bank Polski has also met with internal users, with a view to helping them understand new data. Publication of time series based on BPM6 had been accompanied by special press briefing and a press release. Those interested in bop data could direct their questions to a dedicated e-mail address. Description of changes introduced in BPM6 had also been published in the Quarterly Balance of Payments Bulletin and the Annual Report on FDI. The central bank website remains the main source of information.

Implementation of new methodology and development of new IT system paved the way for new analytical possibilities. Notwithstanding "classical" breakdowns required by international organizations (e.g. IMF, Eurostat) NBP was able to deliver new types of information, the most important of which were remaining maturity for external debt, nominal (and market) value for derivatives and currency breakdown.

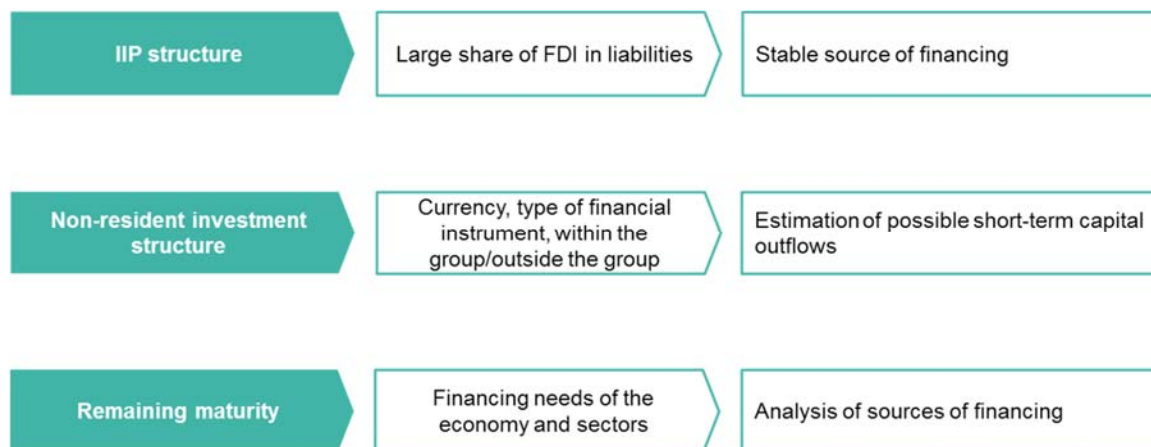
There are couple of reasons why such information is important for our users.

To understand those, first let me touch upon certain external developments of Polish economy. Poland has negative International Investment Position accounting to 67% of the GDP. Such negative iip has been caused by imports of investment from abroad over the last 25 years, boosting GDP growth. The high value of the negative international investment position is a consequence of long-term capital inflows in Poland. This situation is typical for countries that need to import savings from abroad to maintain high economic growth.

There are two negative consequences of such imbalance. The first is income deficit, which during last few years remained at 4-5%GDP, and the second is related to potential external vulnerabilities, connected to doubts whether Polish economy is able to service external debt.



Such a high value in negative international investment position may raise concerns about macroeconomic stability. The consequence of such a significant liabilities to non-residents are income from foreign investment received by non-residents, magnifying the current account deficit. In response to the question whether the volume of the international investment position can be dangerous to economic stability an analysis of its structure may be helpful.



A unique feature of the balance of payments statistics is the possibility to analyze functional categories. The above breakdown indicates the reason behind investment carried out by non-residents. It is widely believed that the safest types of investments include direct investments, which requires a long-term commitment from the non-resident. Withdrawal from direct investment is usually a long and gruelling process. Analysis of the international investment position structure proves that the share of foreign direct investment in the Polish international investment position is relatively high. In Poland, the share of these investments in liabilities stands at almost 50%, while in other countries with similar volume of net investment positions (eg. Turkey, the United Kingdom and Italy) it is much lower. Among countries whose

iip is closer to Poland's, but which report a much lower share of direct investment there is Greece with 6% share of direct investments in liabilities and serious external competitiveness issues. In this context, the size of the international investment position in Poland should be assessed as high, but with relatively safe structure of liabilities.

Assessment of risks on non-resident investments, except for analysis based on functional categories, can also be based on an estimation of the size of those investments, which can be quickly withdrawn by foreign investors. Such analysis is based on the assumption that, from the security point of view, rapid outflow of funds may lead to potential currency issues. Estimation of the size of potential short-term capital outflows requires information on, among others, currency structure of investments. In addition, such investments should be characterized by easy tradability. In Polish case this type of investment should include:

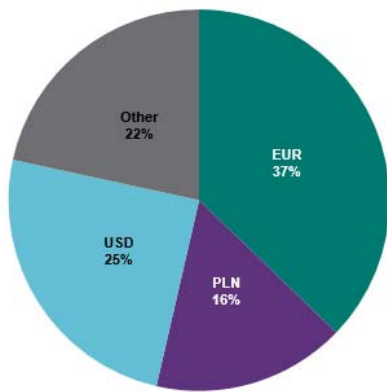
- Treasury bonds denominated in PLN;
- Shares of Polish companies, included in portfolio investment;
- Short-term PLN denominated deposits of non-residents at Polish banks;
- Loans granted by non-residents (only repo, sell-buy-back type)

The largest share of non-resident investments is denominated in PLN, T-bonds and, to a lesser extent, equities. According to the international investment position data the market value of Treasury bonds denominated in PLN held by foreign investors amounted to PLN 185 billion. The market value of Polish shares acquired by foreign portfolio investors reached PLN 115 billion. Short-term PLN denominated deposits placed by non-residents in Polish banks and loans granted in PLN were of much lesser importance. The total value of quickly marketable assets denominated in PLN held by non-residents was thus PLN 324 billion, significantly less than foreign exchange reserves held by the central bank. Moreover, other assets should also be taken into account, primarily banks' deposits in foreign banks.

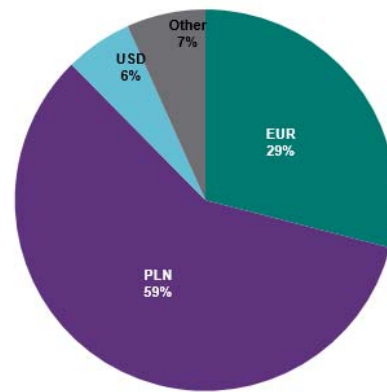
Another approach to analyze the safety of the economy may be an evaluation of the size of the foreign debt due within a given time, usually the following year. This value is usually increased by the projected current account deficit, which allows to estimate the borrowing needs of the economy. This method is often used by rating agencies and the International Monetary Fund to assess country's credibility. Standard presentation of foreign debt data allows to make a distinction between long term and short term debt, but standard breakdown is compiled based on original maturity. In order to estimate either the size of the foreign debt that has to be repaid /is due?/within the next year or refinancing needs, additional amount of long-term debt with maturity up to one year is needed. Our approach enabled us to estimate debt with maturity up to one year is based on some assumptions and with a use of additional information. We collected additional data on remaining maturity of loans. Information on securities was derived from security-by-security database and as far as other financial instruments are concerned we made an assumption that remaining maturity is very short-term (seeing as most of those have short term original maturity). Apart from the volume of short-term debt it is also possible to provide information on the structure of this debt (FDI/others currency etc.).

Important part of external position analysis is an assessment of currency mismatches. New system for bop/iip compilation provides users with data on currency breakdown of external assets and liabilities. What draws attention is a relatively large portion of PLN denominated liabilities in Poland's iip, which substantially lowers external vulnerability. It is connected with large share of FDI equity and government bonds issued in local currency.





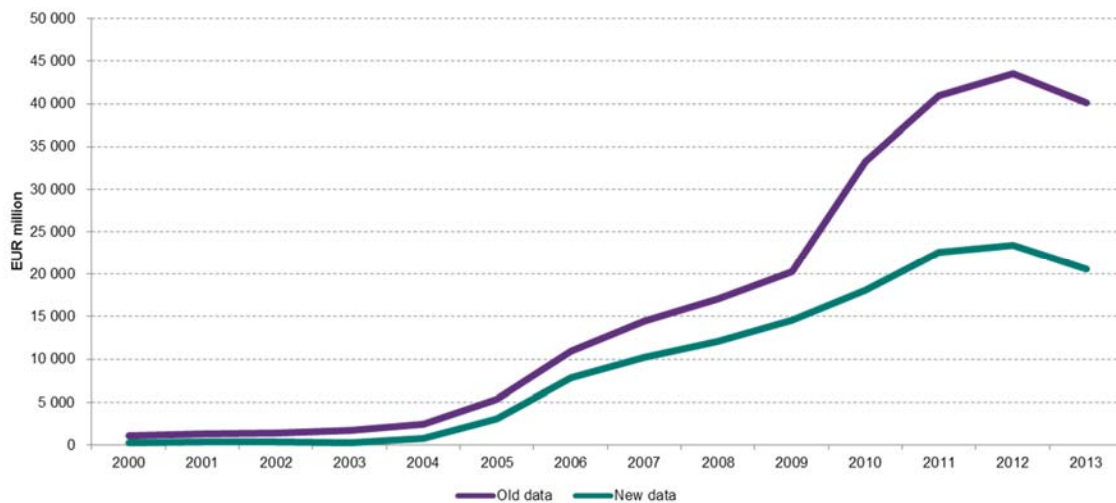
Assets



Liabilities

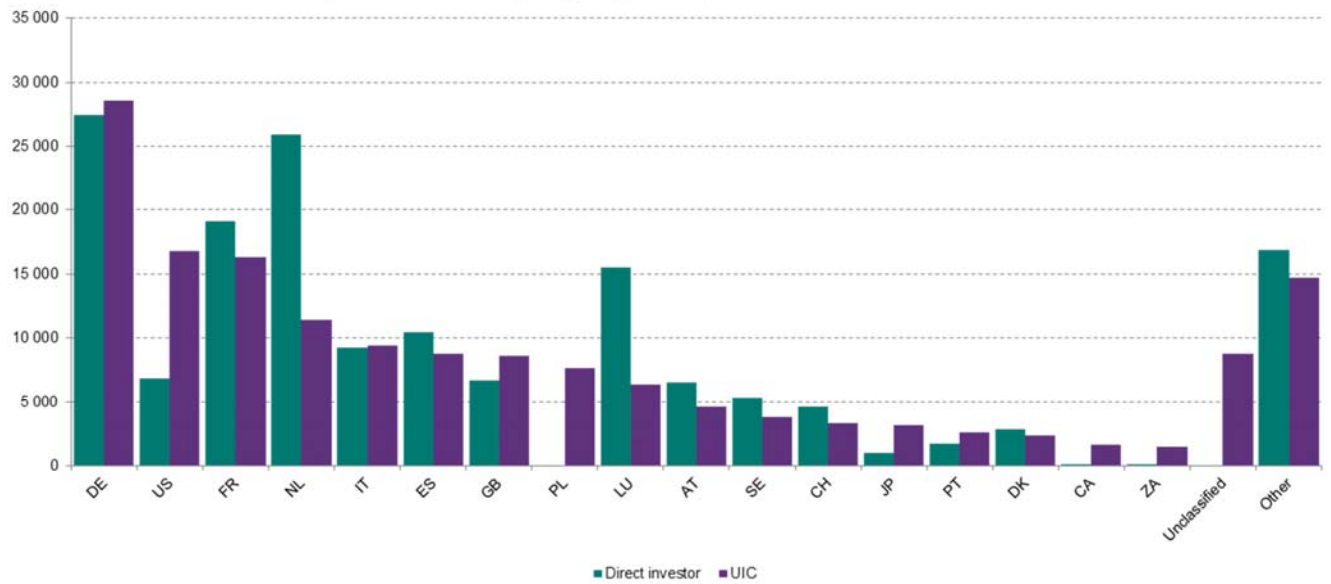
As far as challenges is concerned back data is still an issue. First set of back data has been published with BPM6 data, but NBP still works on: longer time series (now: data from 2004) as well as additional details and data on foreign direct investment. From communication's perspective, change of sign in assets is, in our opinion, another challenge for some of our users.

The largest change in data presented to general public has affected foreign direct investment. Difference between assets/liabilities presentation in the bop/iip and directional principle in FDI statistics created difficulties in understanding the figures. Moreover introduction of extended directional principle resulted in significantly lower FDI data in the case of Polish investment abroad.



In the FDI area important improvement in the possibility of data analysis is an ability to see geographical breakdown based not only on direct investor but also based on Ultimate Investing Country. Our experience shows, that it's useful especially for government users, responsible for economic policy and

Polish Information and Foreign Investment Agency negotiating with investors.



The BPM6 implementation in Poland was difficult and complicated but brought compliance with international standards. It opened new possibilities to users as far as data analysis is concern. New information allows to evaluate the external imbalance of the economy much more precisely than with a single, aggregated indicator. In order to understand the nature of external side of economy users expect additional breakdowns.