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An Integrated Framework for Financial Flows and Positions on a From-Whom-to-Whom Basis

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I. INTRODUCTION

1. This paper describes the importance of using an integrated approach for the compilation of financial flows and positions on a from-whom-to-whom basis, which is one of the main components of the Recommendation 15 of the G20 data gap initiative.[2] Several financial and economic crises, which were characterized by disruptions in the capital flows of key sectors of the economy, made academics, analysts, and policy makers increasingly focus their attention on sectoral balance sheets underlying vulnerabilities. The current global crisis has highlighted the need to understand financial interconnectedness among the various sectors of an economy and between them and their counterparties in the rest of the world. The application of this kind of analysis has been hampered by the lack of adequate data. Although some recent improvements in the development of statistical methodologies and data availability have supported the compilation of partial data on a from-whom-to-whom basis, such a fully integrated approach for financial flows and positions within the macroeconomic statistics framework is yet to be achieved, mainly due to limited sets of from-whom-to-whom data.

2. The System of National Accounts (*SNA*) provides an integrated framework for developing financial flows and positions on a from-whom-to-whom basis as its underlying principles ensure capturing the linkages of the economic and financial actions of an

[1] The views expressed in this paper are those of the authors and do not necessarily represent those of the IMF or IMF policy and ECB or ECB policy.

[2] Recommendation 15 states that "The IAG, which includes all agencies represented in the Inter-Secretariat Working Group on National Accounts, to develop a strategy to promote the compilation and dissemination of the balance sheet approach (BSA), flow of funds, and sectoral data more generally, starting with the G-20 economies. Data on nonbank financial institutions should be a particular priority. The experience of the ECB and Eurostat within Europe and the OECD should be drawn upon. In the medium term, including more sectoral balance sheet data in the data categories of the Special Data Dissemination Standard could be considered." See: *The Financial Crisis and Information Gaps—Report to the G-20 Finance Ministers and Central Bank Governors*, p. 8. The IAG comprises the Bank for International Settlements, European Central Bank, Eurostat, IMF, OECD, United Nations, and World Bank.

economy.[3] However, the *SNA* standard presentation is not explicitly designed to show the inter-sectoral linkages, as traditionally it has focused primarily in answering the question of who does what, but not who does what with whom. As the *SNA* is the internationally accepted methodology for the compilation of the national accounts, the lack of prominence it gives to the from-whom-to-whom principle for data compilation and presentation may be one of the main reasons why this approach for compiling data has not yet received a wider application.

3. Promoting the implementation of the *SNA* sectoral accounts with from-whom-to-whom inter-sectoral relationships for financial flows and positions will be an important step in filling one of the most significant data gaps identified during the recent crisis. The integrated framework on a from-whom-to-whom basis allows answering questions like "*Who is financing whom, in what amount and with which type of financial instrument?"* As regards the allocation of income, it also permits to trace who is paying/receiving income (for example, interest) to/from whom. The from-whom-to-whom compilation approach will also enhance the quality and consistency of data.

4. The flexibility provided by the *SNA* in terms of the level of detail of data compilation and presentation should also allow, in fact, the use of this framework to comply with the requirements of other analytical tools for the assessment of financial vulnerabilities and risks, such as the IMF's Balance Sheet Approach (BSA) that requires a breakdown of positions of assets and liabilities by maturity and currency.

5. Following this introduction, section II of this paper elaborates how the *SNA* can provide an integrated framework for compiling financial flows and positions on a from-whom-to-whom basis and links between the different domains of macroeconomic accounts. Section III describes developments in accounting on a from-whom-to-whom basis. Some preliminary thoughts on the implementation of this three-dimensional approach for compiling data on financial flows and positions are given in section IV.

II. THE SNA INTEGRATED ACCOUNTS

A. Depicting the Economy: Relationships between Economic Agents through Economic and Financial Flows and Financial Positions

6. Understanding the functioning of an economy requires a comprehensive picture of the economic actions covering all aspects of the economic and financial activities. The main

[3] In 2008 the United Nations Statistical Commission approved the *System of National Accounts 2008* (*2008 SNA*). The final version of *2008 SNA* was released by the United Nations in September 2009. The *2008 SNA* was posted on the UN external website at http://unstats.un.org/unsd/nationalaccount/sna2008.asp in September 2009.

economic activities take place in the spheres of production, income distribution and use, and accumulation. On a schematic form the economic cycle can be described as follows: the economic agents interact in the production of goods and services, the income generated in production is distributed among the participants in this process between capital and labor contributions, a redistribution of income among the economic agents is made through current transfers, income is used for consumption or savings, and savings plus capital transfers provide the sources for financing "real" investment. If own financing resources are higher/lower that the funds needed for "real" investment, the corresponding surplus/deficit becomes available for financial investments (lending/borrowing).

7. Economic entities with a surplus of funds will acquire financial assets or redeem their liabilities or both. Entities with a deficit of financing will incur liabilities or be obliged to dispose financial assets to fill the financing gap. In other words, economic actions taken place in the "real" sphere of the economy have consequences in the "financial" sphere. A debtor/creditor relationship is established between entities with a financing gap (borrowers) and those with excess funds (the creditors). In the recent periods, the debtor/creditor relationships created within the financial markets in terms of flows and positions have grown substantially and become more complex.

8. The relationships between economic flows in the real and the financial spheres of the economy as well as the debtor/creditor relationships should be captured and presented using an integrated statistical framework that ensures the consistency of the data between real and financial actions and between economic entities. Using fragmentary data from different sources may lead to partial and even wrong analytical assessments and conclusions.

9. The *SNA* constitutes the comprehensive system of macroeconomic statistics for capturing integrated and consistent information on the economic actions by all resident entities in an economy. Residents interact with other residents as well as with non-residents. The *SNA* not only registers the economic actions within an accounting period but also the capital and financial stocks of the economic entities, that is, their balance sheets.

10. The *SNA* follows the residence approach to record flows and positions of institutional units, grouped into sectors and subsectors, resident in an economy between them and with non-residents. It may not be able to provide proper risk-based measures for macro-prudential analysis and for financial stability purposes particularly when cross-border operations (through branches and subsidiaries) controlled by home country entities grow in significance.

11. In the wake of the recent financial crisis the need has been identified for the development of statistics on a world-wide group consolidated basis – showing also the cross-border financial activities of corporate groups including potentially intra-group flows and positions as formulated in recommendations 13 and 14 of the G20 report mentioned earlier.

12. Large groups of financial or non-financial corporations or conglomerates exist whereby a parent corporation controls several subsidiaries, some of which may control

subsidiaries of their own, and so on. Therefore, the concept of a corporate group deviates from the grouping or aggregating of institutional units to an institutional sector as it groups institutional units based on the concept of control. Such an approach would complement the macroeconomic analysis based on the *SNA* approach.

B. What the SNA Offers to Ensure the Integrated Framework?

13. The SNA offers the following attributes to ensure that it provides an integrated framework for capturing and presenting macroeconomic statistics on a residency basis:

i. The *SNA* includes all resident institutional units grouped into subsectors and sectors and non-resident institutional units grouped into the rest of the world.

ii. The *SNA* includes all economic flows and stocks of resident institutional (sub) sectors and between residents and non-residents.

iii. The *SNA* applies a consistent set of accounting principles, concepts, and classifications.

iv. The *SNA* uses uniform accounting structures for all resident institutional units grouped into sectors and subsectors and for the rest of the world.

A brief description of each of these attributes is given below.

Institutional units and sectors and subsectors

14. Institutional units, according to the *SNA*, are the economic units that can engage in a full range of transactions and can own assets and incur liabilities on their own behalf. Institutional units are grouped together into institutional sectors, based on their functions, behaviour and objectives. The *SNA* distinguishes five main institutional sectors (non-financial corporations, financial corporations, general government, households, and non-profit institutions serving households). It also provides for a hierarchical classification for further dividing the sectors into subsectors.

15. However, it should be borne in mind that if data on detailed institutional sectors are to be compiled on financial flows and positions on a from-whom-to-whom basis, the breakdown of the data by sector and subsector is without doubt one of the most important features when analyzing creditor/debtor relationships. A further breakdown of the main *SNA* institutional sectors may therefore be necessary. The further subsectoral breakdowns of the *SNA*, particularly for financial corporations, may be of importance given that they are at the centre of the analysis of financial risks, vulnerabilities, and spillovers arising from their role in financial intermediation, the size of their assets holdings and liabilities, and the variety of financial instruments on their portfolios.

Economic flows and stocks

16. The *SNA* uses a set of economic flows and stocks for describing the economic and financial activities of resident economic entities and of the rest of the world.

17. Economic flows are classified into transactions and other economic flows. Transactions cover economic actions between two economic entities by mutual agreement. The *SNA* also considers some economic actions undertaken within an economic unit as a transaction (for example, an increase in inventories of own produced output by a producer unit).

18. Economic flows that are not a result of transactions are called in the *SNA* terminology "other economic flows". These flows are of two types: other changes in the volume of assets and liabilities and revaluations. Other changes in the volume of assets and liabilities reflect changes affecting the wealth of an economic entity as a result of the appearance or disappearance of assets/liabilities (losses from natural disasters, a write off of a debt by the creditor). Revaluations (also known as holding gains and losses) reflect changes in the value of assets and liabilities due to changes in their prices.

19. The balance sheet records stocks of non-financial assets and financial asset and liability positions. The stocks and positions are changed through transactions and other economic flows. Although the *SNA* recommends a standard classification of financial assets and liabilities for flows and positions that provides the basis for the comparison of data across countries, it also recognizes that further breakdowns of assets and liabilities may be required to meet specific analytical needs and country specific circumstances. In particular, remaining maturity and currency breakdowns have become more important to analyzing maturity and currency mismatches.

Accounting principles

20. Accounting principles determine the bookkeeping conventions and entries, time of recording and valuation.

Double and quadruple entry accounting

21. As in business accounting, entries for an entity follow the double entry principle to register a transaction. Thus, for the entity undertaking the action there should be one entry as a debit and one as a credit for exactly the same value, ensuring vertical consistency of all transactions for this entity. It follows that when there is a transaction between two institutional units the double entry accounting principle implies that four entries are required in the accounts (two for each institutional unit carrying out the transaction) leading to a quadruple entry system. The quadruple entry accounting ensures vertical consistency (debits and credits for all transactions for an institutional unit are equal), horizontal consistency

(debit entries of a transaction type for all entities are equal to the credit entries of that transaction type for all entities), and consistency in the counterparty relationship.

22. The quadruple entry accounting provides the underlying basis for developing data on a from-whom-to-whom basis.[4] However, the *SNA* accounting structure (as described below) is not built to make explicit the relationship between two parties in a transaction as it aggregates (for each sector or the economy as a whole)[5] all transactions of the same kind without distinguishing with whom these transactions take place.

Time of recording

23. One implication of the quadruple entry accounting principle is that entries related to a transaction and other economic flow should be recorded at the same time in the various accounts of the system for all counterparties involved. The *SNA* uses the accrual principle of accounting, that is, transactions between institutional units are to be recorded when claims and obligations arise, are transferred, transformed, or extinguished.

Valuation

24. The quadruple entry principle also implies that entries for a transaction as well as financial positions should be recorded at the same value for the counterparties involved. Thus, a financial asset and its liability counterpart are recorded for the same amount in the debtor and the creditor accounts. Transactions are recorded at the current market prices at the time the transaction takes place and positions are recorded at the point of time the balance sheet refers.

Concepts and classifications

25. The *SNA* concepts and definitions are drawn from economic theory and are applied consistently throughout the system. The *SNA* integrated accounts (transactions, other flows and balance sheets) are built on the systematic classification the following three pillars:

[4] The principle of quadruple entry also allows to record transactions involving more than two parties. Cases in example are the trade of securities or other negotiable financial instruments on secondary markets and the assumption of guaranteed debt by the guarantor. In both cases three parties are involved – the two transactors as creditors and the debtor in the first case and the guarantor, the original debtor and the creditor in the second case.

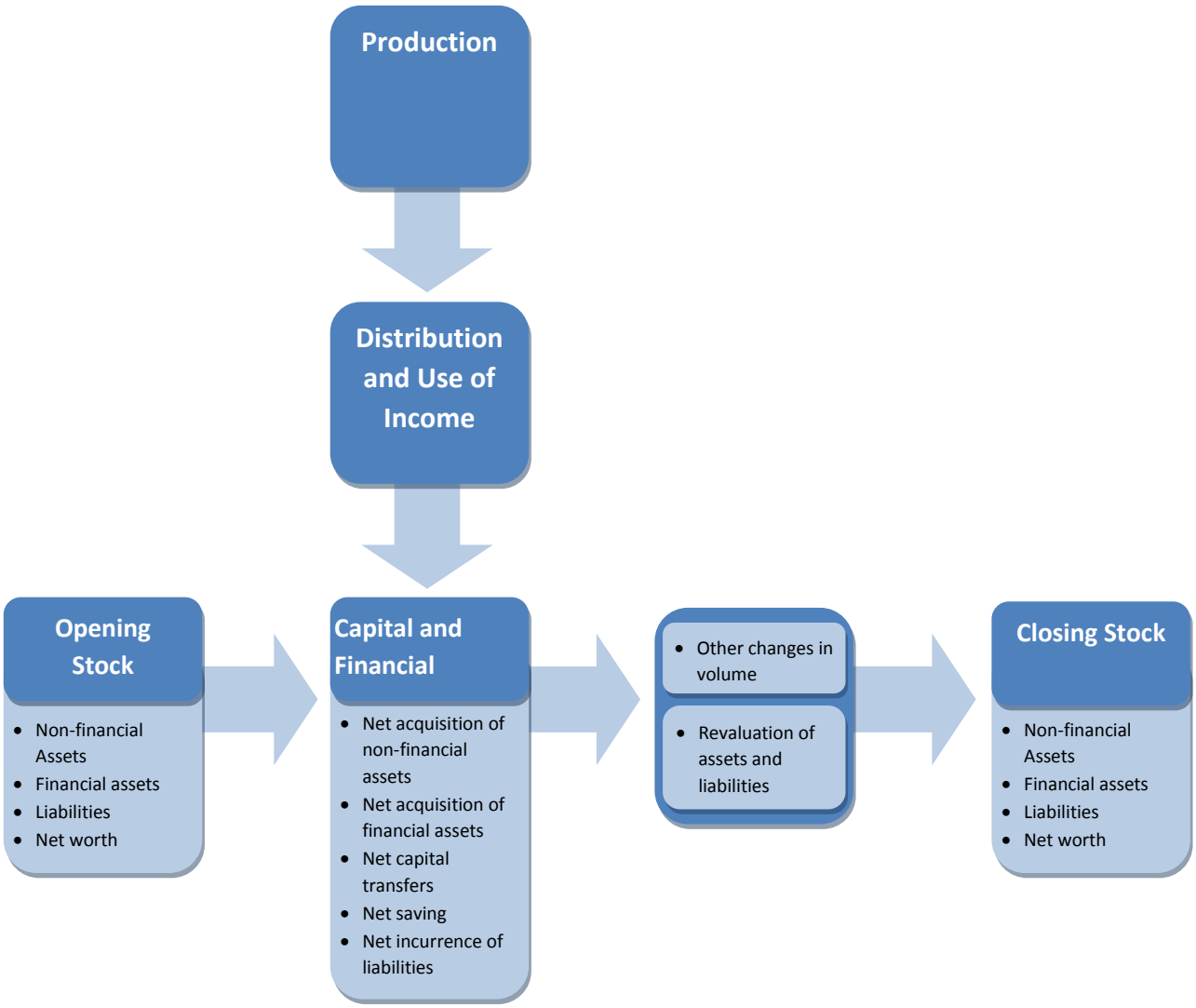
[5] Financial transactions between resident units are balanced by definition, that is, total (net) acquisition of assets is equal to (net) incurrence of liabilities, therefore for the economy net acquisition of financial assets minus net incurrence of liabilities represent the net lending (borrowing) to the rest of the world. Transactions between residents and non-residents are shown in the accounts of the rest of the world (ROW). The ROW shows the financial transactions at consolidated level of financial assets and liabilities without a breakdown by creditor sector or debtor sector.

(i) institutional units and (sub) sectors, (ii) transactions and other flows, and (iii) assets and liabilities.

Accounting structure

26. The accounting structure of the *SNA* is used to organize and present data on transactions, other economic flows, and stocks of assets and liabilities for the sectors and subsectors of an economy and the rest of the world. Diagram 1 shows accounting structure and the relationships among the accounts.

Diagram 1: Integrated Accounts of Flows and Positions



27. The sequence of accounts on current transactions records consistently the production, distribution and use of incomes, with saving as a final balancing item. The sequence of accounts is followed by the accumulation accounts. While all changes in assets, liabilities and net worth are included in the accumulation account, the corresponding positions are shown in the balance sheet. The balance sheet comprises three elements: non-financial assets, financial asset and liability positions and net worth as the balancing item between assets and liabilities. Drawing up a balance sheet makes it possible to focus on the net worth of a sector or subsector of an economy or of the rest of the world and how it changes over time. Accordingly, the change in net worth is composed of saving, net capital transfers receivable, holding gains less holding losses, and other (net) changes in the volume of assets or liabilities. Table 1 below shows how transactions, other flows, and positions are presented in the *SNA*.

Table 1. Flows and Positions as Presented in the *SNA*

		Transactions	Other flows	Positions
Current account		Production of goods and services, generation, distribution, redistribution, and use of income		
Accumulation account	**Capital account**	Net acquisition of non-financial assets, saving and capital transfers		
	Financial account	Net acquisition of financial assets and net incurrence of liabilities		
	Revaluation account		Holding gains and losses in non-financial assets, financial assets and liabilities	
	Other changes in the volume of assets account		Other changes in the volume of non-financial assets, financial assets, and liabilities	
Balance sheet				Non-financial assets, financial assets, liabilities and net worth as a balancing item

28. Flows and positions as presented in the *SNA* are somewhat incomplete as they cover only the flow accounts and balance sheets by (sub) sector without detailed data by counterparty (sub) sector. That is, although they show which institutional sectors are acquiring assets, and what financial assets they are transacting in, they do not identify the sectors which incur the corresponding liabilities. Similarly, while they enable net borrowing sectors to be identified, and show how they borrow, the accounts do not show which sectors took up and hold the borrowing instruments. For a full understanding of financial flows and positions, it is important to know not just what types of liabilities a sector uses to finance its economic and financial activities, but also which sectors are providing the financing. In

addition, it is often necessary to analyse financial transactions between sub-sectors of a sector, particularly for financial corporations and general government.

29. Chapter 27 of the *2008 SNA* provides some input to an integrated framework of financial flows and positions on a from-whom-to-whom basis. It describes that detailed flow of funds accounts are based on three-dimensional tables. Such a table records transactions or financial asset and liability positions cross-classified by type of asset, by creditor sector and by debtor sector.

C. The SNA and the From-Whom-to-Whom Basis for Financial Flows and Positions

30. The *SNA* favours the presentation of the accounts by institutional sector and also provides the conceptual framework to present financial flows and positions on a from-whom-to-whom framework.[6] The main reason why the *SNA* is not overly explicit on a from-whom-to-whom presentation of the data is the reporting burden it poses on compilers, in particular for securities and other negotiable financial instruments.

31. The BIS-ECB-IMF *Handbook on Securities Statistics*, in particular its Part 2 on debt securities holdings covers the conceptual framework for flows and positions as outlined in the *SNA* but also extends this approach by reflecting the from-whom-to-whom relationships.[7] It presents the relationships between the resident sectors as creditors and residents and non-residents as debtors, and between non-residents as creditors and residents as debtors of financial instruments. While this approach is useful for monetary and fiscal policy formulation, it is also crucial to have information on consolidated data at the level of corporate groups for financial stability purposes.

32. From a statistical point of view, the construction of the accounts on a from-whom-to-whom basis is an important compilation tool for enhancing the quality and consistency of the data. It allows for the cross checking of the information from both debtor and creditor sides, thus allowing for a full consistency in terms of values and timing for recording transactions, other flows and positions.

Application of the *SNA* framework for presenting inter-sectoral linkages

33. The *SNA* has not given the necessary attention to the compilation of the accounts on a from-whom-to whom basis. However, its underlying principles and framework allow for compiling such accounts. Moreover, the *SNA* itself provides, albeit on a secondary plan, some references to the compilation of the accounts on a three dimensional basis, that is,

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[6] See Chapter 27 of the *2008 SNA* on the *Links to monetary statistics and the flow of funds.*

[7] See BIS-IMF-ECB *Handbook on Securities Statistics*, Part 1 and Part 2.

including the from-whom-to-whom information. In the case of the financial accounts it calls this presentation "detailed flows of funds".

34. From-whom-to-whom accounts permit tracing the debtor/creditor relationships between institutional sectors, i.e. they can be used to show transactions, revaluations, other changes in financial assets and liabilities and balance sheet positions cross-classified by debtor sector and creditor sector.

35. Table 2 shows the integrated framework of accounts on a from-whom-to-whom basis by institutional sector and the rest of the world in a matrix format. For an economy, it shows transactions, revaluations, other changes in the volume of assets and liabilities, and positions for a financial instrument acquired/held by residents, grouped into (sub) sectors, and non-residents vis-à-vis institutional units as debtors, broken down by residency and by institutional sector (cells of Table 2 shaded grey).

36. For residents, the presentation of non-consolidated data is recommended. This means that intra-sectoral positions, transactions, revaluations and other changes in the volume of assets and liabilities are not eliminated (cells shaded grey with diagonal lines). The financial assets of non-residents issued by non-residents are not covered (black cell). These are not relevant from a national economy's perspective.

37. Holdings of financial instruments by non-residents (vis-à-vis resident sectors as debtors) are shown as positions in the rest of the world balance sheet, acquisitions by non-residents of financial instruments issued by residents as financial transactions in the rest of the world financial account. Revaluations or other changes in the volume of assets and liabilities are reflected in the rest of the world accumulation accounts (cross-hatched cells in the non-residents column of Table 2). For economies where the role of the global financial markets is important, information on counterparty economies and non-resident sectors becomes highly desirable.

Table 2. From-whom-to-whom Transactions between Five Resident Sectors and the Rest of the World for One Financial Instrument, Non-consolidated

Creditor by residency and by resident sector / Debtor by residency and by resident sector		Residents					Non-residents	All creditors
		Non-financial corporations	Financial corporations	General government	Households	Non-profit institutions serving households		
Residents	Non-financial corporations							
	Financial corporations							
	General government							
	Households							
	Non-profit institutions serving households							
Non-residents								
All debtors								

38. The from-whom-to-whom financial account of an institutional sector or of the rest of the world is an extension of the non-consolidated financial account (matching debtor and creditor sectors). Similarly, the from-whom-to-whom financial balance sheet of a sector or of the rest of the world is an extension of the non-consolidated financial balance sheet (again matching debtor and creditor sectors). Deriving the from-whom-to-whom financial account and balance sheet makes it also possible to draw up from-whom-to-whom revaluation accounts and other changes in the volume of assets and liabilities by (sub) sector. The information on revaluations has substantive analytical value, as it allows quantifying the effects of asset price movements for a specific financial instrument by sector vis-à-vis other sectors.

III. Developments in Accounting on a From-Whom-to-Whom-Basis

A. Some Experiences in Compilation and Use of Flow of Funds

39. Although official statistics for some countries, mainly advanced economies, disseminate data on financial flows and positions, for the large majority of cases, information on a from-whom-to-whom basis is lacking. A review of data availability in G20 economies recently conducted by the IMF's Statistics Department reveals that Australia disseminates financial transactions and positions with a breakdown by counterparties within an integrated framework. A few G20 economies (Japan and the USA) disseminate financial accounts and financial balance sheets with significant details for instruments and subsectors that make it possible to identify the debtor/creditor relationships in many cases.

40. The euro area accounts also show some detailed from-whom-to-whom data for loans and deposits, but also for non-financial transactions. This also applies for the quarterly sector accounts compiled by many European countries like Germany, Spain, France, Italy, Austria, Portugal or the UK.

41. Some clarification of the term "flow of funds" will be useful. It is evident that the term "flow of funds" is used with different meanings among the data compilers and users. Sometimes the term is used to describe the financial transactions only, while in other cases flow of funds refer to both financial transactions and positions. Most countries use this term to compile data on resources and uses of funds for sectors of an economy. For example, Mexico, Indonesia, and South Africa, which compile the financial accounts by institutional sector, refer to these sectoral financial accounts as flow of funds. The USA refers to both the sectoral financial accounts and the balance sheets as the flow of funds accounts. Many countries (for example, European countries) adhere strictly to the *SNA* terminology.

42. Among the G20 emerging market economies, some partial information (sectors and instruments) on the flow of funds (financial flows) on a from-whom-to-whom basis is available for only a couple of countries.

43. Partial information on financial flows and positions by sector and corresponding counterparty, although available in many cases for financial institutions, is not fully integrated within a macroeconomic statistics framework, such as the *SNA*. Thus, commonly existing information on financial flows and positions showing creditor/debtor relationships can be found on a wide range of statistics compiled by central banks showing the interactions of the financial sector with other sectors of the economy and the rest of the world. Thus, for example, data on loans extended by the financial sector and deposits incurred are collected and complied by counterparty sectors. These data may usually not be compiled following standard *SNA* classifications of financial instruments and sectors in some cases, therefore undermining their usefulness for integration with the sectoral accounts of the *SNA*.

44. A broad implementation of the from-whom-to-whom framework for financial flows and positions within an integrated framework of macroeconomic accounts has not yet been materialized. However, G20 advanced economies seem to be in a good position to lead the development of these statistics by further extending the financial accounts and balance sheets already compiled and disseminated based on the *SNA/ESA* methodology. Reaching an agreement on harmonized terminology among countries is also necessary so as to avoid confusions.

B. The Balance Sheet Approach

45. The balance sheet approach (BSA) is an analytical framework for ascertaining how balance sheet weaknesses contribute to the origin and propagation of financial crisis.[8] Instead of focusing on the analysis of flows, the BSA focuses on the examination of stocks of assets and liabilities in a country's sectoral balance sheets. It starts with an analysis of sectoral vulnerabilities. Weaknesses of one sector can spill over to other sectors and can have an impact on the whole economy since financial difficulties of a debtor represent difficulties for its creditors. This approach of analyzing the origins and propagation of financial crisis has gained momentum since the financial account crisis of the 1990s. In fact, the IMF has been involved in the development of data sources and using the BSA in its surveillance work. Chart 1 shows a simplified version of the BSA matrix. As the liabilities in the BSA matrix are consolidated sectoral data, the matrix's diagonal (shaded boxes) of intra-sectoral holdings remains empty.

[8] Please see for details two IMF Working Papers. (1) A Balance Sheet Approach to Financial Crisis, 2002, by Mark Allen, Christoph Rosenberg, Christian Keller, Brad Setser, and Nouriel Roubini (http://www.imf.org/external/pubs/cat/longres.aspx?sk=16167.0); and (2) Using Balance Sheet Approach in Surveillance: Framework and Data Sources and Availability, 2007, by Johan Mathisen and Anthony Pellechio (http://www.imf.org/external/pubs/cat/longres.aspx?sk=19800.0).

Chart 1. A Simplified BSA Presentation of Inter-sectoral Positions of Financial Assets and Liabilities

Holder of the liability (Creditor) / Issuer of the liability (Debtor)	**Government sector (incl. central bank)**	**Financial sector**	**Nonfinancial Sector**	**Rest of the world**	**Total**
Government sector (incl. central bank)					
Domestic currency **Total other liabilities** **short term** in foreign currency in domestic currency **medium & long term** in foreign currency in domestic currency					
Financial sector					
Total liabilities **deposits & other short term** in foreign currency in domestic currency **medium & long term** in foreign currency in domestic currency **Equity (capital)**					
Nonfinancial sector					
Total liabilities **short term** in foreign currency in domestic currency **medium & long term** in foreign currency in domestic currency **Equity (capital)**					
Rest of the world					
(all in foreign currency) **Total liabilities** currency & short term medium & long term **Equity**					

Source: A Balance Sheet Approach to Financial Crisis, 2002, by Mark Allen, Christoph Rosenberg, Christian Keller, Brad Setser, and Nouriel Roubini, IMF Working Paper WP/02/210, page 45.

46. In assessing balance sheet risks, the BSA framework considers four types of balance sheet mismatches that can trigger a financial crisis. These mismatches are (a) currency mismatches (liabilities in foreign currency and assets in domestic currency—capital losses and default risk from devaluation of exchange rate); (b) maturity mismatches (assets are long-term and liabilities are short-term causing risk of defaults associated with difficulties on debt rollover and increase in short-term interest rates); (c) capital structure mismatches (excessive reliance in debt instead of equity); and (d) solvency risk (assets not enough to cover liabilities).

47. The BSA refers to the *SNA* balance sheets but is limited to analyzing only positions (stocks) of financial assets and liabilities. It shows for each financial instrument included, the sector incurring the liability (the debtor) and the sector acquiring the counterpart asset (the creditor). In other words, it corresponds to the "detail" flow of funds in the *SNA*. IMF's Statistics Department (STA) compiles monthly BSA matrices mainly drawing from data for deposit-taking corporations of 120 countries. The main sources are data reported to the IMF periodically, including the Standardized Report Form (SRFs) for monetary and financial statistics, international investment position (IIP), and the Coordinated Portfolio Investment Survey (CPIS), as well as the Quarterly External Debt Statistics (QEDS), the Joint External Debt Hub (JEDH).

48. The sector breakdown of the BSA matrices consist of the general government, financial sector and its subsectors, the non-financial corporations, other resident sectors, and the rest of the world. The currency denominations and the maturity (original) breakdowns of assets and liabilities play an important role in the classification of assets and liabilities in the BSA. The classification of financial instruments by category follows the *SNA* but the new breakdowns by subcategory are recommended, data availability of which are not always ensured.

Compilation of the BSA

49. At present, the BSA matrices are compiled monthly for 120 countries. The main source data are the SRF reports received electronically by the IMF. Three different forms are used to collect data, respectively, from (a) the central banks, (b) other deposit-taking corporations, and (c) other financial corporations. Data on financial assets and liabilities are collected for the main categories of financial instruments used in the *SNA* with a breakdown by currency (national and foreign currency) and original maturity. The standards sectors considered are the central bank, other deposit-taking corporations, other financial corporations, general government (separate data for central, state and local government), non-financial corporations (separate data for public and private non-financial corporations), other resident sectors (households and non-profit institutions serving households) and non-residents (rest of the world). These data provide satisfactory creditor/debtor positions between the financial corporations sector and other sectors of the economy and the rest of the world.

50. Data on positions between general government and the other resident sectors of the economy are incomplete because the creditor and debtor positions between general government, the non-financial corporations and other resident sectors are not available. The positions between general government and the rest of the world are extracted from the IIP, the QEDS, and the CPIS. The first two of these sources provide the liabilities of general government against the rest of the world while data from the IIP and CPIS would refer to financial assets held by the general government vis-à-vis the rest of the world.

51. Data on positions between the non-financial corporations and other sectors of the economy are also incomplete, as there are no data on the positions held by this sector against general government and other resident sectors. Stocks of liabilities of the non-financial sector held as financial assets by the rest of the world are available from IIP, the QEDS and the JEDH, while data on their holding of financial assets against the rest of the world are available from the IIP and the CPIS.

C. Other IMF Initiatives in Collecting Data on a From-Whom-to-Whom Basis

The Coordinated Portfolio Investment Survey (CPIS)

52. The purpose of the CPIS is to collect information on the stock of cross-border holdings of portfolio investment in securities (equity securities and short and long-term debt securities).[9] The CPIS is conducted annually since 2001 and it collects data from more than 70 countries on their year-end portfolio investment positions on the targeted financial instruments with a breakdown by country of issuer. The coverage of the CPIS corresponds to the coverage of the portfolio investment in the IIP. The concepts and principles underlying the CPIS are those contained in the *BPM5,* data are collected by immediate counterpart economy.

53. The data collected permit the presentation at the level of each financial instrument on a from-whom-to-whom basis showing the holders of the assets vis-à-vis the issuer countries. The results of the survey show a continuous increase in the value of cross-border portfolio investment.

54. In addition to this core (i.e., required) set of data, the CPIS also encourages the reporting of supplementary information that is considered to be useful. Thus, the CPIS identifies securities held by resident sectors with a breakdown of sectors [banks, other financial institutions (insurance corporations and pension funds, investment funds, and others), general government, and non-financial corporations].

Coordinated Direct Investment Survey (CDIS)

55. The IMF conducted for the first time in 2009 a Coordinated Direct Investment Survey (CDIS)[10] in conjunction with its interagency partners, including the Organisation for Economic Cooperation and Development, the Statistical Office of the European

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[9] For CPIS Guide, data, metadata, please visit IMF website http://www.imf.org/external/np/sta/pi/cpis.htm.

[10] As its meeting in November 2009 in Shanghai, People's Republic of China, the IMF Committee on Balance of Payments Statistics agreed that the CDIS should be undertaken on an annual basis. As a consequence, the IMF will be asking for preliminary data as of end-2010 to be reported by September 30, 2011. For CDIS Guide, data, and metadata, please visit IMF web site http://www.imf.org/external/np/sta/cdis/index.htm.

Communities, the European Central Bank, and the United Nations Conference on Trade and Development. As of October 2009, 132 economies had indicated interest in the CDIS, including virtually every major foreign direct investment investor and receiving economy. At the end of 2010, data related to the end of 2009 were published.

56. CDIS collects comprehensive and harmonized data on foreign direct investment (FDI) positions for end-year by economy of direct investor (for inward direct investment) and by economy of investment (for outward direct investment). It also provides a number of breakdowns, including separate data on equity and debt positions. The survey collects information on the basis of country to country but without a breakdown by sector of the investor and the recipient.

57. The purpose of the CDIS is to improve the quality of direct investment position statistics in the international investment position and by immediate counterpart economy. Specifically, the objectives of the CDIS are to collect comprehensive and harmonized data, with geographic detail of counterpart country, on direct investment positions, with equity reported separately from debt investment.

D. BIS's Locational International Banking Statistics

58. The Bank for International Settlements (BIS) compiles quarterly data on gross balance sheet positions of banks in major banking centers against entities (banks and non-banks) located in other countries worldwide.[11] The statistics cover separate data on cross-border claims and liabilities in all currencies and claims and liabilities vis-à-vis residents in foreign currency.[12]

59. Data are based on the residency and non-consolidated concepts, consistently with the balance of payments and international investment position statistics. There is however a deviation from these statistics in that the locational statistics also include bank's foreign currency positions vis-à-vis residents.

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[11] For the locational international banking statistics guide and data, please visit BIS web site http://www.bis.org/statistics/bankstats.htm.

[12] BIS also collects and publishes consolidated banking statistics on banks' on-balance sheet financial claims on the rest of the world. The quarterly data cover contractual lending by the head office and all its branches and subsidiaries on a worldwide consolidated basis, i.e. net of inter-office accounts. Total claims are broken down by remaining maturity, sector (banks, non-bank private sector and public sector) as well as vis-à-vis country. Two sets of statistics are compiled. The first set collects data on an immediate borrower basis, i.e. claims are attributed to the country where the original risk lies. The second set collects data on an ultimate risk basis, i.e. claims are attributed to the country where the final risk lies. Currently, central banks in 30 countries report their aggregate national consolidated data to the BIS, which uses them as the basis for calculating and publishing global data. For more information, please visit BIS website http://www.bis.org/statistics/consstats.htm.

60. The locational international banking statistics provide information on international claims and liabilities for more than 40 of the most important banking centers by country of residence of the counterparties, by major individual currencies, and sectors (only banks and non-banks). Financial assets and liabilities are presented for three aggregated categories: (a) loans and deposits; (b) holdings and own issues of debt securities; and (c) other assets and liabilities. The latter two categories mainly cover portfolio and direct investment.

61. The statistics, aggregated at the country/financial center level are reported by central banks and monetary authorities in the countries and financial centers that conduct large volumes of international lending and borrowing or deposit-taking. The statistics provide a measure of the role of banks in intermediating international capital flows, a measure of the external debt owed to banks as reported from the creditor side, and a measure of the importance of financial centers and offshore banking activity.

E. ECB's Experience in Euro Area Accounts on a From-Whom-to-Whom Basis

62. The reasons for collecting and compiling financial flows and positions on a from-whom-to-whom basis (by debtor/creditor)[13] for euro area aggregates are mainly analytical. Three examples of such a data framework should be presented in this context. From-whom-to-whom statistical information enriches considerably the approach of monitoring (a) monetary transmission processes; (b) general government debt; and (c) securities issues and holdings.

Monitoring monetary transmission processes by integrating money in a from-whom-to-whom framework

63. The integration of monetary aggregates and its counterparts in a from-whom-to-whom framework is derived from the consolidated financial transactions and balance sheets of the resident money issuing sector vis-à-vis the resident money holding sectors.[14] An initial set of source data available are the balance sheets of monetary financial institutions (MFI) from which monetary aggregates and the main counterparts to broad money are to be calculated. These balance sheet statistics comprise often rather detailed breakdowns of various financial instruments, such as deposits, loans and debt securities by maturity and counterpart sector. Balance of payment statistics and statistics on securities issuance by general government and by financial and non-financial corporations complement this dataset.

64. The corresponding financial accounts and balance sheets derived from these source data, with a breakdown of the financial corporations sector, of the financial asset and liability categories, and of the counterparts allow the identification of broad money, which then helps

[13] The *2008 SNA* uses the term flow of funds (see *2008 SNA* Chapter 27).
[14] See European Central Bank, Monthly Bulletin, various issues and statistical section.

in analysing monetary developments in the widest possible financial framework and in a way which permits them to be related more easily to the economic developments recorded in the production, income and capital accounts.

65. The *money issuing sector* is assumed to consist of the central bank, resident deposit-taking corporations and resident money market funds, together comprising the MFI subsector. Money holders are the remaining resident sectors, including the remaining subsectors in the financial corporations sector and all subsectors of general government. (This is a simplification – in reality, central government may have monetary liabilities, and its holdings of monetary instruments issued by MFIs may be excluded from the monetary aggregates.) Holdings of money by the money issuing sector itself are netted out. The rest of the world sector is assumed to be money-neutral, that is, neither the liabilities of non-residents, nor non-residents' holdings of money issued by resident money issuers, are counted in money.

66. *Monetary variables* are considered to comprise (a) currency (issued by the central bank), (b) transferable deposits held with MFIs, (c) deposits redeemable at a period of notice of up to and including three months (i.e., short-term savings deposits) held with MFIs, (d) deposits with an agreed maturity of up to and including two years (i.e., short-term time deposits) held with MFIs, and (e) repurchase agreements, money market fund shares or units, and debt securities with an original maturity of up to and including two years issued by MFIs. These monetary variables may also cover structured securities and structured deposits.

67. Depending on the coverage, various *monetary aggregates* may be derived: (a) a narrow monetary aggregate M1 comprising currency and transferable deposits held with MFIs; (b) an intermediate monetary aggregate M2 comprising M1 and short-term savings deposits and short-term time deposits held with MFIs; and (c) a broad monetary aggregate M3 comprising M2 and marketable instruments as listed in (e) above (see Annex 1).

Monitoring general government gross debt in a from-whom-to-whom framework

68. Data on general government gross debt are used to monitor fiscal developments within the euro area. General government gross debt or Maastricht debt excludes, as gross consolidated debt, any government debt held as a financial asset by government units. It comprises the financial instruments currency and deposits, debt securities and loans.

69. Maastricht debt provides debt data with a breakdown by holder or creditor. They are split into debt held by residents of an economy within the euro area or within the EU and by non-resident holders. Holdings of debt by residents are calculated as the sum of the debt held by the central bank, other monetary financial institutions, other financial institutions, and other residents. A memo item covers the debt held by non-residents inside the euro area. In addition to their breakdown by instrument and holder, debt is also presented by original and residual maturity and by currency denomination.

Monitoring securities issues and holdings in a from-whom-to-whom framework

70. The from-whom-to-whom framework allows for a detailed presentation of financing and financial investment via securities, which has a number of uses within the ECB, especially in the context of monetary policy and financial stability analysis. It sheds light on the sectoral compositions of assets and liabilities, and on potential strengths and vulnerabilities in portfolios.[15]

71. The complexity of from-whom-to-whom tables for securities is determined by the detail of the breakdowns chosen for securities (by sub-category, position and sub-position) and for the creditors and debtors (by residency, sector and sub-sector). Combining these breakdowns leads to a rather large number of from-whom-to-whom relationships, especially as the data may need to be shown as positions and flows. Accordingly, a selection by security sub-category, sector and sub-sector is essential.

72. At the ECB, a centralised security-by-security database (CSDB) has been set up by the European System of Central Banks (ESCB) to further improve the quality of flow and position data for securities for policy purposes. The CSDB is a micro database that stores information on individual securities, from which statistics can be compiled flexibly to serve diverse needs. The CSDB covers various categories of financial instruments, such as debt securities, equity securities and investment fund shares or units. Information stored on an instrument is broken down into attributes that describe selected characteristics of the instrument. The selection of attributes may vary depending on the purpose of the database. Attributes useful for statistical applications include the international securities identification number (ISIN), name of the issuer, residence of the issuer, the sector and sub-sector of issuer, issue date, redemption date, the type of security, the currency of denomination, the issue price, the redemption price, the outstanding amount or the market capitalisation, and the coupon payments and dates.

73. The production of statistics from the CSDB can be presented as a three-stage process. First, it involves the inputs by collecting and purchasing data on individual securities from a range of sources, such as central banks, government agencies, commercial data providers and securities exchanges (in their capacity as custodians). Second, it covers data quality management. The individual security data collected from different sources are received into the database, merged, and stored. Checks for completeness, plausibility and consistency are then performed, and where errors are detected, observations are corrected. And third, it involves the storing of individual security data according to various classification criteria.

74. There is a project ongoing to link the CSDB dealing with securities issues statistics to securities holdings statistics for resident holders grouped by sector and sub-sector, as well as

[15] See BIS-IMF-ECB *Handbook on Securities Statistics*, Part 1 and Part 2.

for non-resident holders. For this purpose, information provided by respondents (as holders or custodians) is linked at the individual security level to the data stored in the CSDB. The link is often made using the ISIN, but also referring to information on the debt securities holders and holdings: (a) the holder by residency and institutional sector and sub-sector and also by large and complex financial or non-financial group; and (b) the amount of holdings in currency.

75. Current reporting schemes on securities holdings are mainly based on two groups of agents having access to such kind of information: (a) custodians (as well as centralised securities depositories); and (b) direct reporters. In most cases, data are collected from custodians on a security-by-security basis. This also refers to the collection of data on the securities holdings of residents from non-resident custodians to allow the breakdown of holdings by the residency of the issuer to be derived. Direct reporters provide security-by-security data on their holdings with various breakdowns: by type of instrument, maturity, residence of issuer, etc.

76. Establishing an integrated compilation framework for securities issues and securities holdings statistics which provides timely and high-frequency data with breakdowns by type of financial instrument, currency denomination, maturity, issuing country, and sector or sub-sector is rather demanding and cost intensive. Insofar, the ESCB has agreed that it will still take a couple of years to use it for the regular production of securities statistics, starting with financial balance sheet data.

IV. Applying the From-Whom-to-Whom Framework for Financial Flows and Positions

A. Collecting and Compiling Data on a From-Whom-to-Whom Basis

77. A set of accounts that show by sector and type of financial instrument the transactions, other economic flows, and the positions of financial assets and liabilities vis-à-vis the counterpart sector whether resident or cross-border reflects more accurately the reality of the interconnected global economy, and provides more useful information for opportunely dealing with the financial flows and positions that can originate a crisis.

78. Especially in the context of requirements related to multilateral surveillance, financial stability and policy coordination; sectoral accounts on a from-whom-to-whom basis are a powerful tool to provide comparable data for G20 countries and economic areas. Such indicators reflecting imbalances may cover data on the current account derived consistently from the rest of the world, data on deficit and debt derived from general government or data on private savings and debt derived from the non-financial corporations and household sector accounts.

79. Transactions on a from-whom-to-whom basis permit to understand how surpluses by one sector are allocated among different financial instruments and sectors and cross-border or

how sectors with deficits meet their financial needs in terms of financial instruments used and sectors providing it. They also reflect the increasing activities in the financial markets for the sake of financial returns and speculative gains. Not less important is to identify changes in balance sheets that result from revaluations and other changes like mergers and acquisitions.

80. The compilation of the *SNA* accounts for financial flows and positions on a from-whom-to-whom basis will fill some important data gaps in the currently available macroeconomic statistics. This, however, requires further investments in new data collection systems as described for securities databases.

81. The collection of more detailed data from markets and institutional sectors has to be weighed against the response burden to the statistical units, confidentiality constraints, and the cost of collecting and processing the additional source data. As a result, compromises need to be established in the level of aggregation of the data to be collected as well as of the source to be used.

B. Steps in the Implementation of From-Whom-to-Whom Tables

82. As a condition for assuring international comparability, the accounts on financial flows and positions should be compiled and disseminated using an agreed minimum set of categories of assets/liabilities and institutional sectors. Depending on their own analytical needs and data availability countries may compile the data at more disaggregated levels reflecting their own institutional settings and for particular financial instruments. For international comparability, the classification of sectors should be the main institutional sectors as defined by the *2008 SNA*, with the minimum breakdown of financial instruments corresponding to the main classification of financial instruments in the *2008 SNA*.

83. Considering the difficulties that countries are likely to face in compiling exhaustive accounts, implementation could occur in steps. First, the accounts for the main institutional sectors by financial instrument category are likely to be implemented. With the development of the data sources a further breakdown of the financial corporations accounts by subsector may follow.

84. In a further step, from-whom-to-whom data may be collected and compiled for selected financial instruments like loans, deposits or insurance and pension entitlements. Most challenging will be to provide such detailed data for securities and other negotiable financial instruments due to secondary market transactions.

85. The compilation of sectoral accumulation accounts and balance sheets requires dedicated staff of compilers and analysts plus resources for the collection and processing of data. A suitable institutional arrangement may vary depending on various circumstances. The compilation of the integrated framework for financial flows and positions on a from-whom-to-whom-basis has implications for the internal allocation of responsibilities within each

country. The division of work among different institutions depends on a country's specific institutional arrangements for the compilation of the integrated national accounts statistics. Different agencies may be involved; each responsible for a specific part of the accounts in close interaction, thus ensuring full coverage and assuring consistency. Roles, responsibilities, and coordination mechanism must be ensured through explicit and formal mechanisms.

86. Technical assistance and training will be required particularly for those countries that have not yet implemented complete sectoral accounts. Training may adopt a regional format, thus maximizing the benefits of the resources used. Given existing resource constraints for technical assistance, an implementation based on selected pilot countries may be necessary.

87. Due to data confidentiality, the collection of financial flows and positions on a from-whom-to-whom basis may be sometimes problematic, particularly when higher level of details is requested.

C. Presentation Tables on Sectoral Accounts

88. As a first step, the presentation of sectoral financial flows and positions can follow simplified tables showing creditors' flows and positions by residency of debtors and by financial instruments (and a similar table for debtors' financial flows and positions). At a later stage, tables showing from-whom-to-whom data can be compiled. Annex 2 provides a proposal of such an approach.

Annex 1. Integrating Money in a From-Whom-to-Whom Framework

1. There are practical challenges which may have to be tackled when integrating money into the framework for financial flows and positions on a from-whom-to-whom basis. The definitions of money and of money issuing, money holding and money-neutral sectors are not necessarily based on the classification of financial assets and institutional sectors described section III. Maturity thresholds, valuation methods and recording principles for accrued interest in monetary statistics generally coincide with those recommended for use in the *SNA*.

2. Table A1 shows in *italics* the money holders' financial transactions in assets, which represent monetary claims on the money issuing sector (resident MFIs). The outstanding money stock may be identified in a similar way in the financial balance sheet.

Table A1. Money in the Framework for Financial Transactions on a From-Whom-to-Whom Basis

Creditor / *Type of claim and debtor (MFI)*	***Non-financial corpora-tions***	*Financial corporations*		***General govern-ment***	***House-holds and NPISH***	***Money holders (total)***	*Rest of the world*
		MFIs[1]	***Other financial corporations***				
Currency and deposits							
- short term[2]	***50***	*60*	***5***	***10***	***150***	***215***	*60*
- long term	*10*	*20*	*0*	*0*	*30*		*10*
Debt securities							
- short term[3]	***10***	*30*	***5***	***5***	***20***	***40***	*30*
- long term	*5*	*10*	*0*	*0*	*10*		*10*
Money market fund shares or units	***5***	*5*	***2***	***0***	***20***	***27***	*0*
Equity and remaining investment fund shares	*0*	*5*	*5*	*0*	*5*		*2*
Financial derivatives and employee stock options	*2*	*10*	*10*	*0*	*0*		*10*
Other accounts receivable/payable	*1*	*2*	*2*	*0*	*0*		*2*
Money	***65***		***12***	***15***	***190***	***282***	
Domestic non-monetary liabilities (total)	*18*		*17*	*0*	*45*	*80*	
External liabilities of MFIs (total)							*124*

[1] MFIs cover the central bank, deposit-taking corporations, and money market funds. [2] Short-term deposits cover transferable deposits, deposits redeemable at a period of notice of up to and including three months (i.e. short-term savings deposits) and deposits with an agreed maturity of up to and including two years (i.e. short-term time deposits) held with MFIs. [3] Short-term debt securities cover debt securities with an original maturity of up to and including two years issued by MFIs

3. In Table A2, the counterparts to money are shown. The domestic credit counterpart reveals how the change in money is related to lending by money issuers (MFIs) to other residents in all forms, including by the acquisition of securities issued by MFIs. This counterpart comprises part of the assets of the money issuing sector, namely loans to, the acquisition of securities issued by, and other forms of lending to, all other resident sectors, including other entities (that is, not MFIs) in the financial corporations sector.

4. Another part of the assets of the money issuing sector, net of liabilities to non-residents, constitutes the external counterpart, the net external assets of the money issuing sector (in balance sheet terms), or changes in them (corresponding to transactions in the financial account).

Table A2. Counterparts to Money in the Framework for Financial Transactions on a From-Whom-to-Whom Basis

Debtor *Type of claim and creditor (MFI)*	***Non-financial corpora-tions***	*Financial corporations*		***General govern-ment***	***House-holds and NPISH***	***Money holders (total)***	*Rest of the world*
		MFIs[1]	***Other financial corporations***				
Currency and deposits		*80*					*30*
Debt securities	***60***	*40*	***10***	***40***		***110***	*60*
Loans	***60***		***6***	***20***	***120***	***206***	*45*
Money market fund shares or units		*5*					*0*
Equity	***5***					***5***	
Remaining investment fund shares or units		*5*	***10***			***10***	*5*
Insurance , pension and standardised guarantee schemes			***3***	***0***		***3***	*0*
Financial derivatives and employee stock options	***2***	*10*	***0***	***0***	***0***	***2***	*5*
Other accounts receivable/payable	***0***	*2*	***0***	***0***	***0***	***0***	*5*
Domestic credit (total)	***127***		***29***	***60***	***120***	***336***	
External assets (total)							*150*
Net external assets (external counterpart)							*26 (=150-124)*

[1] *MFIs cover the central bank, deposit-taking corporations, and money market funds.*

5. The transactions and positions of the rest of the world correspond (after some rearrangements) to the balance of payments and international investment position. Net external assets of MFIs, summarizing the money issuing sector's transactions with the rest of the world, link to money through the MFI accounting framework. The balance of payments identity may then be exploited to show how the money holding sectors' transactions with the rest of the world relate to changes in money, since the money issuers' balance of payments transactions must equal all other resident sectors' balance of payments transactions with reverse sign (for this purpose it is desirable that errors and omissions in the balance of payments have been eliminated when compiling the sector accounts and balance sheets; otherwise they may be attributed to the money holding sectors).

Annex 2. A Proposal for Presentation of Sectoral Accounts

1. As a first step, tables may be designed to follow the residence of creditor approach. Such tables show institutional units as creditors which hold financial instruments; institutional units are allocated to an economic sector. The holdings are part of the balance sheet (asset portfolio) of this sector, whereas transactions in financial instruments are part of the economic sector's financial account. The financial instruments holdings of resident sectors are shown (with a breakdown by the residency but without a breakdown of the resident sector of debtors), and the financial instruments incurred by residents and acquired by non-residents are also shown. The following proposed Table 2A reflects the approach and shows the financial instrument categories according to *2008 SNA*.

2. Some amendments to this table may be made by splitting the financial corporation sector into some sub-sectors like money-issuing corporations, insurance corporations and pension funds and other financial corporations. A breakdown of some financial instrument categories like deposits, loans or debt securities by original maturity may also be feasible at this stage.

3. The tables on the from-whom-to-whom basis show flows and positions for financial instruments acquired by resident sectors and by non-residents, with a breakdown by institutional sector for resident debtors (the cells of Table 2B shaded light grey). Furthermore, acquisitions by non-residents of financial instruments issued by residents are shown (penultimate column) and also financial instruments issued by non-residents and acquired by resident sectors (penultimate row). However, acquisitions by non-residents of financial instruments issued by non-residents are not covered (black cells).

4. For residents, the presentation of non-consolidated data on financial instruments acquisitions is recommended, covering intra-sectoral flows and positions (diagonal cells of Table 2B shaded in dark grey).

5. The collection and compilation of such from-whom-to-whom data has to follow after stage one in a step-by-step approach based on the availability of corresponding source data. A first step is usually to integrate such data from monetary statistics, balance of payments or government finance statistics providing usually detailed data on nonnegotiable financial instruments like deposits, loans, trade credit or insurance and pension entitlements.

6. In a further step, from-whom-to-whom data may be derived by sector and sub-sector for securities based on detailed source data taken from financial statements or from securities databases.

Table 2A. Financial Instruments Classified by Creditor Sector and Residency of Debtor

Debtor by residency and by financial instrument category \ Creditor		Residents					Non-residents	All creditors
		Non-financial corporations	Financial corporations	General government	Households and non-profit institutions serving households	All residents		
Residents	Monetary gold and SDRs							
	Currency and deposits							
	Debt securities							
	Loans							
	Equity and investment fund shares or units							
	Insurance, pension and standardized guarantee schemes							
	Financial derivatives and employee stock options							
	Other accounts receivable/ payable							
Non-residents	Monetary gold and SDRs							
	Currency and deposits							
	Debt securities							
	Loans							
	Equity and investment fund shares or units							
	Insurance, pension and standardized guarantee schemes							
	Financial derivatives and employee stock options							
	Other accounts receivable/ payable							
All debtors	Monetary gold and SDRs							
	Currency and deposits							
	Debt securities							
	Loans							
	Equity and investment fund shares or units							
	Insurance, pension and standardized guarantee schemes							
	Financial derivatives and employee stock options							
	Other accounts receivable/ payable							

Table 2B. Financial Instruments Acquisitions in a From-Whom-to-Whom Framework by Residency and Resident Sector of Creditor and by Residency and Resident Sector of Debtor

Debtor by residency and resident sector and by financial instrument			Creditor by residency and resident sector: Residents – Non-financial corporations	Residents – Financial corporations and sub-sectors	Residents – General government	Residents – Households and non-profit institutions serving households	Non-residents	All creditors
Residents	Non-financial corporations	Monetary gold and SDRs						
		Currency and deposits						
		Debt securities						
		Loans						
		Equity and investment fund shares or units						
		Insurance, pension and standardized guarantee schemes						
		Financial derivatives and employee stock options						
		Other accounts receivable/ payable						
	Financial corporations and sub-sectors	Monetary gold and SDRs						
		Currency and deposits						
		…						
	General government	Monetary gold and SDRs						
		Currency and deposits						
		…						
	Households and non-profit institutions serving households	Monetary gold and SDRs						
		Currency and deposits						
		…						
Non-residents		Monetary gold and SDRs						
		Currency and deposits						
		…						
All debtors		Monetary gold and SDRs						
		Currency and deposits						
		…						