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FLOW DATA IN THE MACROECONOMIC ACCOUNTS**

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**Strengthening Sectoral Position and Flow Data in the  
Macroeconomic Accounts — A Way Forward**

To be presented in Session 7 by Manik Shrestha

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## TABLE OF CONTENTS

I.	Background .....	3
II.	Why Comprehensive Sectoral Accounts Within the Integrated Framework? .....	4
III.	Time Frame .....	7
IV.	Setting the Scope of the Sectoral Accounts .....	7
	A. Existing Scope of Sectoral Accounts .....	7
	B. Future Scope of Sectoral Accounts .....	9
V.	Priorities .....	15
VI.	Outreach, Technical Assistance and Training .....	15
VII.	Arrangements for Collection and Dissemination of Sectoral Accounts .....	17
	A. Arrangements for Strengthening Sectoral Accounts at a Country Level.....	17
	B. International Arrangements for Collection and Dissemination of Sectoral Accounts .....	18
VIII.	Questions for Discussions.....	21
Annexes		
1.	Possible Institutional Sectors and Subsectors for Sectoral Accounts .....	24
2.	2008 SNA Financial Instruments—Full Detail .....	25
3.	Classification of Non-financial assets in the 2008 SNA.....	26

## Strengthening Sectoral Position and Flow Data in the Macroeconomic Accounts — A Way Forward

### I. BACKGROUND

1. Recommendation 15 of the IMF and Financial Stability Board Secretariat report, “*The Financial Crisis and Information Gaps*”<sup>1</sup> called for developing “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 G20 economies.” This strategy is guided by a working group, chaired by the IMF, which has been created under the auspices of the Inter Agency Group on Economic and Financial Statistics (IAG).<sup>2</sup>
2. The objective of the recommendation 15 is to expand the dissemination and reporting of detailed annual and quarterly sectoral accounts by both G20 and other advanced economies. The expansion involves improving the compilation of sectoral national accounts in terms of details (sub-sectors and asset details) and closing data gaps as well as developing flow of funds on a from-whom-to-whom basis. Moreover, the work program for the Eighth Review of the IMF’s Data Standards Initiatives, provisionally scheduled for the first half of 2012, also includes the possibility of strengthening the Special Data Dissemination Standard with regard to integrated sectoral balance sheet information.
3. The Conference on Strengthening Sectoral Position and Flow Data in the Macroeconomic Accounts, organized jointly by the IMF and OECD at the IMF headquarters during February 28–March 2, 2011, is to provide a platform for reaching agreements on a number of improvements, a minimum set of internationally comparable sectoral accounts, and priorities for their compilation and dissemination by the G20 and other advanced economies.
4. This paper sets out various options and issues for implementing this project. The intention is to get broad agreement during the Conference that should provide the basis for taking forward the work on implementation both at international and country levels. This paper does not claim to cover all issues in a comprehensive manner and it does not reflect an official position. It is intended to provide a structure for discussing a way forward for strengthening the sectoral position and flow data in the macroeconomic accounts.

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<sup>1</sup> The report was endorsed by G20 finance ministers and central bank governors at their meeting in November 2009 and is available at [www.imf.org/external/np/g20/pdf/102909.pdf](http://www.imf.org/external/np/g20/pdf/102909.pdf).

<sup>2</sup> The IAG comprises the Bank for International Settlements, European Central Bank, Eurostat, IMF, OECD, United Nations, and World Bank

5. This paper provides background information and structure for discussing the following topics relevant for taking forward the work on strengthening the sectoral position and flow data in the macroeconomic accounts.

- i. Time frame for implementation,
- ii. Setting the scope of the sectoral accounts,
- iii. Priorities,
- iv. Outreach, technical assistance and training, and
- v. Arrangements for collection and dissemination of sectoral accounts.

## **II. WHY COMPREHENSIVE SECTORAL ACCOUNTS WITHIN THE INTEGRATED FRAMEWORK?**

6. For residency-based macroeconomic statistics, the *System of National Accounts (SNA)* serves as the integrated statistical framework as it provides accounting principles and has capacity to provide accounting structures for reflecting economic activities (domestic and cross-border) of all resident entities (sub-sectors) in a consistent manner.

7. The functioning of economic and financial systems involves interactions/exchanges and debtor/creditor relationships among all economic entities that may have different motivations and functions, engage in different activities, and have different behaviors. With the increasing role of domestic and international markets, which are becoming more and more complex, sophisticated, and integrated as well as creating innovative products and services; the nature and intensity of interrelationships and linkages among and within groups of entities (sub-sectors) and among and within the various functions (for example; production, consumption, capital accumulation, and financial investment) are also going through drastic transformations. It is, therefore, imperative to understand not only the characteristics of a sub-sector or a function, but also inter-linkages among the subsectors and functions. The analytic and policy responses related to a sub-sector or a function should take into account the intended and unintended implications on other sub-sectors and functions. Only an integrated statistical framework that presents macroeconomic statistics for all sectors and subsectors in a consistent way can meet the analytic and policy needs for information arising from highly interconnected economic and financial systems.

8. Although the *SNA* provides the statistical framework for compiling integrated sectoral accounts, the framework has not been fully utilized in practice to compile and disseminate fully integrated comprehensive sectoral accounts. Past efforts in statistical development made good progress in certain domains of macroeconomic statistics. Mountains of information are available in some specific areas. For example, detailed monetary and financial statistics are available for depository financial corporations. Other balance sheet data where progress has been made include external debt, international reserves, international investment positions, and coordinated cross-border portfolio and direct investment. Detailed financial information

may be available for the government sector and sub-sectors (particularly for many OECD countries) and initiatives have been taken to better cover financial balance sheets of the household sector and non-bank financial institutions. However, serious data gaps exist for specific sectors such as the nonfinancial corporations or for specific areas such as the non-financial balance sheets.

9. The fully integrated *SNA* sectoral accounts would improve the integration of scattered information and highlight the inconsistencies between the data sets of the various macroeconomic domains as it ensures a holistic approach to all the sectors of an economy and rest of the world. The sectoral accounts will provide an integration framework for macroeconomic data on external, fiscal, and financial sectors with those of the rest of the economy. At the country level, this will facilitate the coordination of work on different macroeconomic statistics domains and promote their consistency at the data collection and compilation stages, thus eliminating or significantly reducing inconsistency of disseminated data.

10. Every economic and financial crisis has created demands for new types of economic and financial statistics at the macro, sectoral and micro levels. These new demands also require careful thinking on how their developments should be integrated or harmonized or linked with existing macroeconomic statistics frameworks. Such an approach is needed not only to capitalize the efficiency gains from using existing institutional set up and data collection arrangements, but also to enhance the quality of data resulting from the harmonization, consistency, and explicit linkages between datasets.

11. Given the spectrum of data needs (ranging from specific micro data to specific type of macro data); one obvious question that may arise is how the fully integrated sectoral accounts can add value to analytical and policy needs. Apart from the statistical enhancements it brings to the data (sometimes scattered data), the fully integrated and comprehensive sectoral accounts with the *SNA* framework help identify strengths and weaknesses, common and exceptional exposures/structures at the macro and sectoral levels. The specific economic phenomenon identified at the macro and sectoral levels can then be complemented with more micro level analysis. Of course, one can first identify a micro level issue and then analyze it within the sectoral and macro frameworks. Or a sectoral pattern may be evaluated against macro or micro patterns. Whatever may be the sequence or motivation and subject of analysis, it is hardly arguable that the issue needs to be evaluated not only on its own merit but also within the context of macro and sectoral perspectives. Qualitative information and industry specific detailed information should also be taken into account.

12. No one argues with the fact that we also have to address the possibility of crisis stemming from events and circumstances that no one was aware of or could anticipate. From the statistics perspective, this means that we need to make the statistical system more robust no matter what the source of the problem is. Fully integrated and comprehensive sectoral

accounts with an increased focus on details for systemically important subsectors and activities may provide useful analytical tools at the macro and sectoral levels. More comprehensive information on sectoral accounts would help in assessing the likelihood of a crisis, in managing crises when they emerge, and in making more explicit the assumptions and trade-offs on which assessments and policy options are to be based. Moreover, issues related to macroeconomic policies, financial stability, growth and inflation often need to be considered in a holistic manner.

13. There are, however, a number of substantive gaps in the existing macroeconomic statistics frameworks that need to be addressed before it can serve the purposes described in the preceding paragraphs. A few important gaps are presented below:

- i. Even though the underlying conceptual framework and accounting principles of the *SNA* are powerful, the accounting structures lack behind in emphasizing and promoting the compilation and presentation of financial flows and positions on a from-whom-to-whom basis. The increased interconnectedness within an economy and cross-border has made such data indispensable.
- ii. A lot needs to be done to make available refined and consistent currency breakdowns and maturity breakdowns across macroeconomic statistics domains.
- iii. Evaluating shifts in balance sheets and debtor/creditor relationships are important, but effects of asset prices (recorded in revaluation accounts) must be an integral part of data development.
- iv. There is a need to reach an agreement on a minimum set of internationally comparable sectoral accounts that all countries will disseminate. Globalization and interconnectedness across economies require cross-country comparable data for bilateral, regional and multilateral surveillance as well as policy coordination.
- v. International cooperation needs further strengthening for efficiently collecting information from countries with due consideration for response burdens, information sharing among international agencies, and providing easy access to users.

14. In a nutshell, the sectoral accounts project, in accordance with *2008 SNA*, would bring together and highlight the inconsistencies between the data sets of the various macroeconomic domains as it ensures a holistic approach to all the sectors of an economy and rest of the world. The sectoral accounts will provide an integration framework for macroeconomic data on external, fiscal, and financial sectors with those of the rest of the economy and rest of the world. Such an approach will have implications on institutional

arrangements as it will be required that future work on various macroeconomic statistics domains be coordinated. The sectoral accounts may, in fact, be used as the main framework for ensuring cross-sectoral consistency of data on a more systematic and regular basis.

### **III. TIME FRAME**

15. The scope of data development and priorities will depend on the time frame during which the data development is to be accomplished.

16. The initial stage of the project is expected to be implemented within a three-year period. Most advanced economies are planning to implement the *2008 SNA* by 2014. This should be the opportunity also to encourage countries to implement the minimum set of internationally comparable sectoral national accounts. Integrated sectoral national accounts data on the new basis could probably be available in 2015 for most of the advanced economies.

17. Countries that have made little or no progress in compiling integrated sectoral national accounts should be able to compile partial sectoral data (in terms of sectors/subsectors or parts of the accounts, for example, stocks of financial assets and liabilities) within the three-year period.

18. For both sets of countries, enhancements should continue beyond the three-year period. While countries initiating to develop sectoral accounts will have to work on having comprehensive sectoral accounts, those that will compile the minimum set of comparable sectoral accounts by 2014 will further enhance the quality and details of the sectoral accounts. This time-frame is subject to resource availability; therefore, it would be crucial that relevant institutional issues are to be addressed by national statistical agencies.

19. International organizations will need to work on assisting the countries and developing infrastructure for collecting and disseminating sectoral national accounts. The infrastructure for data collection and dissemination should therefore be put in place by 2014.

### **IV. SETTING THE SCOPE OF THE SECTORAL ACCOUNTS**

#### **A. Existing Scope of Sectoral Accounts**

20. IMF has undertaken a stock-take of present country practices. The IMF reviewed the status of the availability of sectoral balance sheets and accumulations accounts in G20 and other advanced economies based on the data published drawing mainly on national websites or through OECD and Eurostat as of early 2010. A complete set of sectoral balance sheets and accumulation accounts (at least covering the *SNA* main institutional sectors and the *SNA* main asset categories at the first digit level) for both financial and non-financial assets is

generally lacking. Main findings with respect to G20 economies can be summarized as follows:<sup>3</sup>

- i. With respect to sectoral financial asset and liability positions and financial accounts:
  - All G20 advanced economies disseminate these data using at least the minimum *SNA* institutional sector and the minimum *SNA* financial instrument classifications mostly on a quarterly basis. Several of the G20 advanced economies publish some further breakdowns for institutional sectors and financial instruments. However, further sectoral and instrument details are far from meeting needs for policy analysis and decision-making.
  - None of the G20 emerging market economies publish sectoral financial asset and liability positions (even using the main *SNA* sectoral classification) as far as it is known from reviewing official data disseminated to the general public. However, several countries have some data on sectoral financial accounts. Argentina, Russia, Saudi Arabia, and Turkey do not publish financial accounts.
- ii. With respect to sectoral stocks of non-financial assets and capital accounts:
  - All G20 advanced economies (except Italy) disseminate these data using the minimum *SNA* main sectoral breakdown with further details for some asset categories (mainly for fixed assets). Australia, Canada, and the U.S. disseminate balance sheets on a quarterly basis and other countries publish on an annual basis. Subsectoral details are lacking. The coverage of assets is not always complete and further breakdowns of assets (particularly for non-produced assets) are lacking.
  - Among the G20 emerging market economies, only India has sectoral stocks of non-financial assets (but using a sectoral classification that differs from *SNA*), and with incomplete scope of assets. Although all G20 emerging market economies have a capital account for the total economy, sectoral and asset breakdowns are available only in a few cases. Except for China and Saudi Arabia (which publish capital account on an annual

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<sup>3</sup> G20 advanced economies are Australia, Canada, France, Germany, Italy, Japan, Korea, United Kingdom, and United States of America. G20 emerging market economies are Argentina, Brazil, China, India, Indonesia, Mexico, Russian Federation, Saudi Arabia, South Africa, and Turkey.



basis), other G20 emerging market economies publish data on transactions of produced assets (with some breakdowns) on a quarterly basis.

- iii. Although the current crisis highlighted the importance of the revaluation account (the effects of changes in asset prices) and other volume changes (write-offs and reclassifications) on the net worth of various sectors of an economy, data on these accounts are not well developed among the G20 advanced economies and do not exist in the G20 emerging market economies. Four G20 advanced economies (Australia, France, Japan and the United States) publish some data for these accounts.
- iv. In many cases, there is significant room for improving both the timeliness and frequency of sectoral balance sheets and accumulation accounts.
- v. Data accessibility and presentation are also far from satisfactory. Classifications for both assets and institutional sectors beyond the *SNA* main headings, when available, follow national presentations, and are not comparable across countries in almost all cases. There is no uniform data dissemination format used by the countries and access to data is not user-friendly in most cases.

21. Eurostat and OECD collect and disseminate sectoral national accounts data from their member countries. Even though countries follow mostly national presentation of sectoral data, OECD publishes these data using the *SNA* format. OECD publishes data by sectors and subsectors (according to *1993 SNA*) and all financial instruments and sub-instruments depending on their availability in countries. Recently, quarterly data have been transmitted to ECB from most EU countries, and forwarded to Eurostat and OECD. Non-EU countries have been requested to send their data to OECD.

### **B. Future Scope of Sectoral Accounts**

22. The international initiatives for implementing the G20 recommendation 15 are expected to focus on improving the compilation and dissemination of sectoral national accounts of G20 and other advanced economies.

23. Initially, many advanced economies that are members of OECD may be able to compile improved sectoral accounts by 2014, target date for implementing the *2008 SNA* for many OECD countries. It is likely that none of the G20 emerging market economies will be able to develop the sectoral accounts without substantial technical assistance and training and may take at least more than five years to develop some partial (in terms of accounts) sectoral data.

24. The scale of the sectoral accounts data to be compiled and disseminated will depend on the agreement on the minimum sector and asset details as well as on the compilation of financial flows and positions on a from-whom-to-whom basis. The Conference is expected to discuss and reach broad agreement with respect to the following outcomes that will shape the scale of the sectoral accounts to be disseminated in the future:

- i. The sector/subsector breakdowns for sectoral accounts;
- ii. The classification of financial assets and liabilities;
- iii. The classification of non-financial assets;
- iv. Compilation of financial flows and positions on a from-whom-to-whom basis; and,
- v. The frequency and timeliness of sectoral accounts.

25. This paper elaborates various implementation choices and raises questions with respect to these elements for the development of sectoral national accounts. The intention is to provide a structure and background for discussion at the Conference, but not to present any one position. Even though points are made in a few cases why certain details are important, they should be taken as only ad hoc references rather than providing a full account of their usefulness.

26. It should also be noted that a broad agreement on sector and sub-sector details and non-financial and financial instrument breakdowns is needed to achieve consistency and international comparability of sectoral accounts. An agreed decision on these issues will provide guidance and directions for countries that are planning to develop or expand the data collection and compilation on sectoral accounts. Many advanced economies that are already compiling sectoral accounts with a great amount of details for sectors and financial instruments may focus on fully integrated sectoral accounts at a more detailed level and specific areas of data needs arising from national circumstances. Further details beyond the 2008 SNA classifications may be needed in some cases (particularly for financial instruments) and agreements on these details would be desirable. One important aspect of data enhancement is that it will involve revisions of historical series and this aspect should also be given due consideration in the process of planning and implementing data enhancements.

### ***Sector/subsector breakdowns***

27. Understanding economic behavior and financial positions at a granular sectoral level has become important. In particular, detailed subsectoral financial flows and positions would facilitate an analysis of exposures and build up of risks over time both at the aggregate and subsectoral levels. Inter-sectoral relationships within an economy and cross-border

relationships at the subsectoral level help to highlight how balance sheet problems in one sector or abroad can spill over to other sectors.

28. The sector/subsector breakdowns may need to follow the 2008 SNA institutional sector classification with sub-sector details at 3-digit level (S.121 — S.129) for the financial corporations sector. Annex 1 provides a possible 2008 SNA subsectoral details.

29. There are five sub-sectoring issues that may merit discussions from both the analytical usefulness and feasibility points of view.<sup>4</sup>

- i. Sub-sectoring of financial corporations into the nine subsectors (see Annex 1). If a more aggregated sub-sectoring is warranted, what should be the grouping of sub-sectors of the financial corporations?
- ii. Sub-sectoring of the non-financial corporations into public, national private and foreign controlled non-financial corporations.
- iii. Sub-sectoring of the other depository corporations into public, national private and foreign controlled depository corporations.
- iv. Should further sub-sectoral details be considered?
- v. The same sector and subsector classification used for balance sheets and accumulation accounts should also be used to compile current accounts (production, generation of income, allocation of primary income, secondary distribution of income, and use of disposable income accounts).

### ***Classification of financial instruments***

30. Most advanced economies compiling financial balance sheets publish some detailed breakdowns of financial instruments (often quite detailed to meet national data needs), but the instrument breakdowns are not comparable across countries. In most cases, the detailed SNA classification of financial instruments (see Annex 2) is not available. Furthermore, currency and resident/nonresident (claims and liabilities to residents vs. non-residents) breakdowns are, in most cases, not available. Maturity data (original maturity) are available only in a few cases. Many countries publish separate data on specific items.

31. The 2008 SNA classification of financial instruments is provided in Annex 2. The main classification issue that merit discussion is the minimum set of classification of financial instruments that is desirable to ensure international comparability of these data. The following points should provide some indication of the needs for instrument classification:

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<sup>4</sup> OECD Working Party on Financial Statistics envisaged a workshop in 2011 on the implementation of 2008 SNA to discuss, in particular, issues resulting from the new sub-sector breakdowns.

- i. Structure of financial assets and liabilities is evolving with many new complex financial products emerging. Monitoring at the level of a specific or groups of complex instrument/s may be necessary.
- ii. Possible further breakdown of financial instruments by maturity (combining original and remaining maturity) has become important. For example, further classifying long-term maturity on an original maturity basis into that with a remaining maturity of year or less than a year and that with a remaining maturity of more than a year may serve the purpose of combining both original and remaining maturity classifications.
- iii. Further information by currency is needed. For which instruments is the currency breakdown most important? Is the grouping into domestic vs. foreign currency sufficient? Or at least should the classification by domestic, SDR basket and other foreign currencies be considered?
- iv. Different subsectors have different concentration in terms of financial instruments on the asset and liability sides.
- v. For advanced financial markets, the instrument classification in the *2008 SNA* does not appear to be sufficient. For example, separate monitoring of asset backed debt securities and specific securitized debt instruments (such as mortgage backed securities or collateralized debt obligations) has become important given the fact that they involve a complex relationship between them and the original debt instruments and the underlying collateral. A different approach for assessing risk associated with complex financial instruments is needed than that appropriate for financial instruments that have more clear linkages between debtors and creditors.
- vi. Many countries have introduced more detailed classification of financial instruments to meet their own analytical and policy needs. How do we want to proceed so as to have international comparability at some levels of these additional details in the classification? Should there be some efforts to develop a harmonized set of further classification of financial instruments beyond the *2008 SNA* categories?

### *Classification of non-financial assets*

32. A complete coverage of all non-financial assets is generally lacking. Classification of non-financial assets beyond the *SNA* main asset types is available only for a few asset categories (mostly for fixed assets and occasionally for some natural resources). However, even for non-financial assets for which some further details are available, the classification is not comparable across countries.

33. The 2008 *SNA* classification of non-financial assets is given in Annex 3. The main classification issue that will merit discussions is the minimum set of classification of non-financial assets that is desirable to ensure international comparability of these data. The following questions may be considered:

- i. For fixed assets, whether three or four digit level (for example, machinery and equipment is a three-digit level while transport equipment is a four-digit level of the classification) of the *SNA* classification should be aimed for (see Annex 3 for the classification hierarchy)?
- ii. For inventories, should the three digit level be considered?
- iii. For natural resources, at least further breakdowns at three digit level should be considered? Should further details be considered and agreed for mineral and energy resources, for example using the System of Environmental and Economic Accounting?

### *Financial flows and positions on a from-whom-to-whom basis*

34. Although official statistics for some countries, mainly advanced economies, disseminate data on financial flows and positions, for the large majority of cases, financial flows and positions on a from-whom-to-whom basis is lacking.<sup>5</sup> A review of data availability in G20 economies recently conducted by the IMF's Statistics Department reveals that only 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 account and financial balance sheet with significant details for financial instruments and sectors that make it possible to identify the debtor/creditor relationships in many cases.

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<sup>5</sup> Please see the paper "An integrated Framework for Financial Flows and Positions on a From-Whom-to-Whom Basis" prepared by Manik Shrestha, Segismundo Fassler and Reimund Mink for the analytical usefulness and implementation of such a framework.

35. Financial interconnectedness through the asset and liability management has increased significantly in the past few decades. Not only economies have become more and more inter-linked with each other, sectors and subsectors within an economy have also become more and more inter-linked with each other and with rest of the world. Therefore, interconnections at the sectoral and subsectoral levels (both within an economy and among economies) have become necessary for deeper analysis beyond the aggregated macro level. Understanding these financial interconnections would facilitate identification and analyses of spillovers of economic and financial conditions and policies. Furthermore, policies relevant at the national level cannot be taken without considering impacts from bilateral, regional, and global economic and financial conditions. For a better understanding of the global financial system, the set of countries that may need to collect and compile detailed cross-border data is quite small since global financial system is highly concentrated in a few jurisdictions.<sup>6</sup>

36. A more concerted and resource intensive efforts will be required for improving the overall availability of financial flows and positions on a from-whom-to-whom basis. Some main issues that could be consider are:

- i. More detailed flows and positions on a from-whom-to-whom basis should be used for a selected sectors or sub-sectors. Initially, the financial corporations sector and/or its subsectors and general government sector and/its subsectors may be considered as candidates both from the perspectives of their importance and data availability (existing or possible).
- ii. At some aggregated level of sectoring, fully integrated sectoral financial flows and positions on a from-whom-to-whom basis should be considered.
- iii. Rest of the world may no longer be treated as a single vector. Both counterpart economies and counterpart sectors in the rest of the world are immensely important for understanding risks and vulnerabilities stemming from financial interconnectedness. A noticeable progress has been made in collecting and disseminating cross-border financial positions with counterparty information. Mention should be made of the IMF's Coordinated Portfolio Investment Survey (portfolio investment in securities) BIS's locational international banking statistics, and IMF's Coordinated Direct Investment Statistics. However, there is room for further breakdowns of the debtor/creditor relationships between countries showing which sectors of the economies are involved. Equally important is the integration of these independent data initiatives into fully integrated sectoral accounts.

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<sup>6</sup> See IMF paper "Understanding Financial Interconnectedness" for various aspects of global financial interconnectedness (<http://www.imf.org/external/np/pp/eng/2010/100410.pdf>).

## **Frequency**

37. Sectoral national accounts data will be on an annual and quarterly frequency, on a selected basis or where possible. It may be possible to compile fully integrated and detailed sectoral accounts on an annual basis only. However, detailed data for specific subsectors (primarily some subsectors of financial corporations sector) and fully integrated sectoral accounts at some aggregated level of sectors should be compiled on a quarterly basis.

## **V. PRIORITIES**

38. Prioritization of the work for strengthening the sectoral accounts will be challenging given the range of different aspects of data collection and compilation (primarily those determining the scope of sectoral accounts as described in section IV) and diverse situations (in terms of scope of accounts and capacity) in countries. Countries will not be able to undertake work in all areas {sectoral financial flows and positions (on the traditional debtor or creditor basis and from-whom-to-whom basis), sectoral flows and stocks for non-financial assets, and sectoral current accounts}. Priorities for countries that do not yet compile financial flows and positions will certainly be different from those that compile them. Also, existence of data on external, fiscal, and financial sectors will influence the priority setting. Importantly, data requirements for analytical and policy purposes should guide the priorities.

39. Prioritization of future work will require a thorough evaluation of the five elements described in section IV. Priorities will definitely depend on what countries have achieved to date. Based on these criteria, a broad set of priorities for scoping the development of sectoral accounts may be discussed using the following points (but not necessarily in order presented in Table 1 below).

## **VI. OUTREACH, TECHNICAL ASSISTANCE AND TRAINING**

40. The implementation of the integrated sectoral accounts will have different implications in terms of resources and institutional set up in different countries. Those countries that already have the full set of sectoral accounts are in the best position to implement the from-whom-to-whom approach. For these countries, little may be needed in terms of training and technical assistance (except for junior staff that can benefit from attending workshops and courses to be organized by international organizations). However, the knowledge and skills developed in these countries can make a useful contribution to the capacity building efforts in countries with less developed statistical systems, through bilateral cooperation agreements and the participation in regional seminars and workshops. Countries with less developed statistics will need intensive and continuous training and technical assistance. Some pilot technical assistance projects might be established for selected countries, subject to their commitments to provide the adequate domestic resources (staff and financing).

<b>Table 1. Considerations for Prioritizing the Strengthening of the Sectoral Accounts</b>	
<b>Countries with full sectoral accounts</b>	<b>Countries with some sectoral accounts or data</b>
<p><b>In terms of the scope of accounts:</b></p> <ul style="list-style-type: none"> <li>• Harmonization of classifications among various macroeconomic statistics domains at a more detailed level for subsectors, financial instruments, and non-financial assets for compiling integrated sectoral accounts.</li> <li>• Compilation of financial flows and positions on a from-whom-to-whom basis. At least start with compilation of these data for subsectors of financial corporations and general government as source data are available or could be made available more readily. But nevertheless, at least at some aggregated level of sectoring, fully integrated sectoral financial flows and positions on a from-whom-to-whom basis should be compiled.</li> <li>• Introduce remaining maturity and currency breakdowns.</li> <li>• Compilation of revaluation and other volume changes and deriving fully integrated stocks and flows data.</li> <li>• Some more breakdowns of counterparts in the rest of the world (by some country breakdowns as well as some sectoral breakdowns).</li> </ul>	<p><b>In terms of the scope of accounts:</b></p> <ul style="list-style-type: none"> <li>• Compilation of sectoral financial accounts and financial balance sheets. At least start with financial corporations and general government sector and subsectors.</li> <li>• Compilation of sectoral current and capital accounts and stocks of (selected) non-financial assets.</li> <li>• Compilation of financial flows and positions on a from-whom-to-whom basis for subsectors of financial corporations and general government.</li> <li>• Compilation of fully integrated annual sectoral accounts.</li> </ul>
<p><b>In terms of frequency:</b></p> <ul style="list-style-type: none"> <li>• Generally, move towards quarterly compilation. <ul style="list-style-type: none"> <li>• Fully integrated sectoral accounts at some aggregated level. Less timely.</li> <li>• Detailed sectoral accounts for specific sectors or subsectors that are fully consistent with the integrated accounts. More timely.</li> </ul> </li> </ul>	<p><b>In terms of frequency:</b></p> <ul style="list-style-type: none"> <li>• A mixture of quarterly and annual compilation ensuring consistency where both frequencies apply. <ul style="list-style-type: none"> <li>• Fully integrated sectoral accounts at some aggregated level on an annual basis. Less timely.</li> <li>• Detailed sectoral accounts for specific sectors or subsectors that are fully consistent with the integrated accounts on a quarterly basis. More timely.</li> </ul> </li> </ul>

41. Appropriate funding for outreach, technical assistance, and training has to be found and made available for these activities. International organizations and donors will need to draw on their resources to adequately finance these activities.



42. A two-track approach is needed to assist countries with advanced or good statistical systems (most of advanced economies) and countries with less developed statistical systems (most of emerging market economies). While some outreach programs (workshops to discuss compilation issues) might be sufficient for the first group of countries to implement the program that will be determined on the basis of the outcome of this Conference, technical assistance and training programs will be needed to assist the second group of countries. International cooperation and some division of responsibilities among the international agencies might be necessary. In this context, consideration should be given to how this work can be integrated with the *SNA* implementation program.

43. The annual meetings of the OECD working parties on financial statistics and national accounts statistics can be used as the main forum to discuss on-going progress and issues with the implementation of integrated sectoral accounts. A compilers' workshop (with representation from G20 and other advanced economies) may be considered around late 2012 to discuss implementation of broad agreements reached during this conference as well as various conceptual and practical compilation issues. The lessons learned can be used to prepare a compilation guide, particularly on balance sheets and on financial flows and positions on a from-whom-to-whom basis that would be useful for countries planning to implement the balance sheets in future.

44. With respect to training, IMF may be able to conduct training courses at the IMF Institute (open for all IMF members) and at IMF's Regional Training Centers (participation is open to selected IMF members in the region). Other international organizations and bilateral agencies may be able to offer training opportunities. These activities may need some collaboration to avoid duplications and provide support to those needing the support.

## **VII. ARRANGEMENTS FOR COLLECTION AND DISSEMINATION OF SECTORAL ACCOUNTS**

45. The longer term objective is to collect and disseminate sectoral national accounts data that countries will compile and disseminate as a result of implementing the recommendations of the IMF-OECD Conference on Strengthening Sectoral Position and Flow Data in the Macroeconomic Accounts during February 28–March 2, 2011. Arrangements at both the country and international levels are needed.

### **A. Arrangements for Strengthening Sectoral Accounts at a Country Level**

46. Without discussing specific issues in detail, some main areas that need to be addressed should include the following: (i) allocation of responsibilities, (ii) resources (staffing, financing, and information and technology), (iii) coordination and cooperation, (iv) data and metadata dissemination, and (v) data transmission to international organization (focal point). At the planning stage for the implementation of the work, countries should also have consultations with prospective users of the data.

47. 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.

48. Compilation of the financial flows and positions on a from-whom-to whom-basis will require more resources even for those countries which already produce financial accounts and balance sheets. There is additional work in data collection and processing, and the verification and validation of the data to ensure consistency across sectors on debtor/creditor positions by type of financial instrument requires close working relations among all agencies involved at different stages of compilation. Agreements have to be reached on a time-table for inter-agency submission of data and for releasing the final products, including the transmission of the information to international organizations.

49. The work on integrated sectoral accounts will facilitate the coordination of work on different macroeconomic statistics domains and promote their consistency at the level of data collection and compilation. This work could bring efficiencies. Such an approach will have implications for each agency's work as future work on various macroeconomic statistics domains will need to be coordinated. The sectoral accounts may, in fact, be used as the main framework for conducting the work on cross sectoral consistency on a more systematic and regular basis.

## **B. International Arrangements for Collection and Dissemination of Sectoral Accounts**

### **Main principles for data collection and dissemination**

50. Several areas will require international cooperation and division of responsibilities among the international organizations. This paper focuses on the collaboration among the international organizations (specifically Eurostat, ECB, OECD and the IMF) in the future for collecting and disseminating sectoral accounts at the international level.

51. Two main principles should underline the future data collection and dissemination. This Conference is expected to provide a platform to reach consensus on these two principles.

- i. The templates for collecting data from countries should have a long-term horizon and be valid as long as the current statistical standard (2008 SNA/ESA 2010) is expected to remain valid. The templates should allow inserting

additional details (sometimes as of which items) to allow for meeting user needs for such details without a need to change the statistical standard. The templates should allow reporting by countries that have full detail as well as by those that have less detail. They should also allow a country to use the same template as it starts to produce more detailed data. Focusing on the current data availability in the design of templates will require frequent changes that will be costly, confusing for users and compilers, and may cause breaks in time series, delay in data transmission, etc.

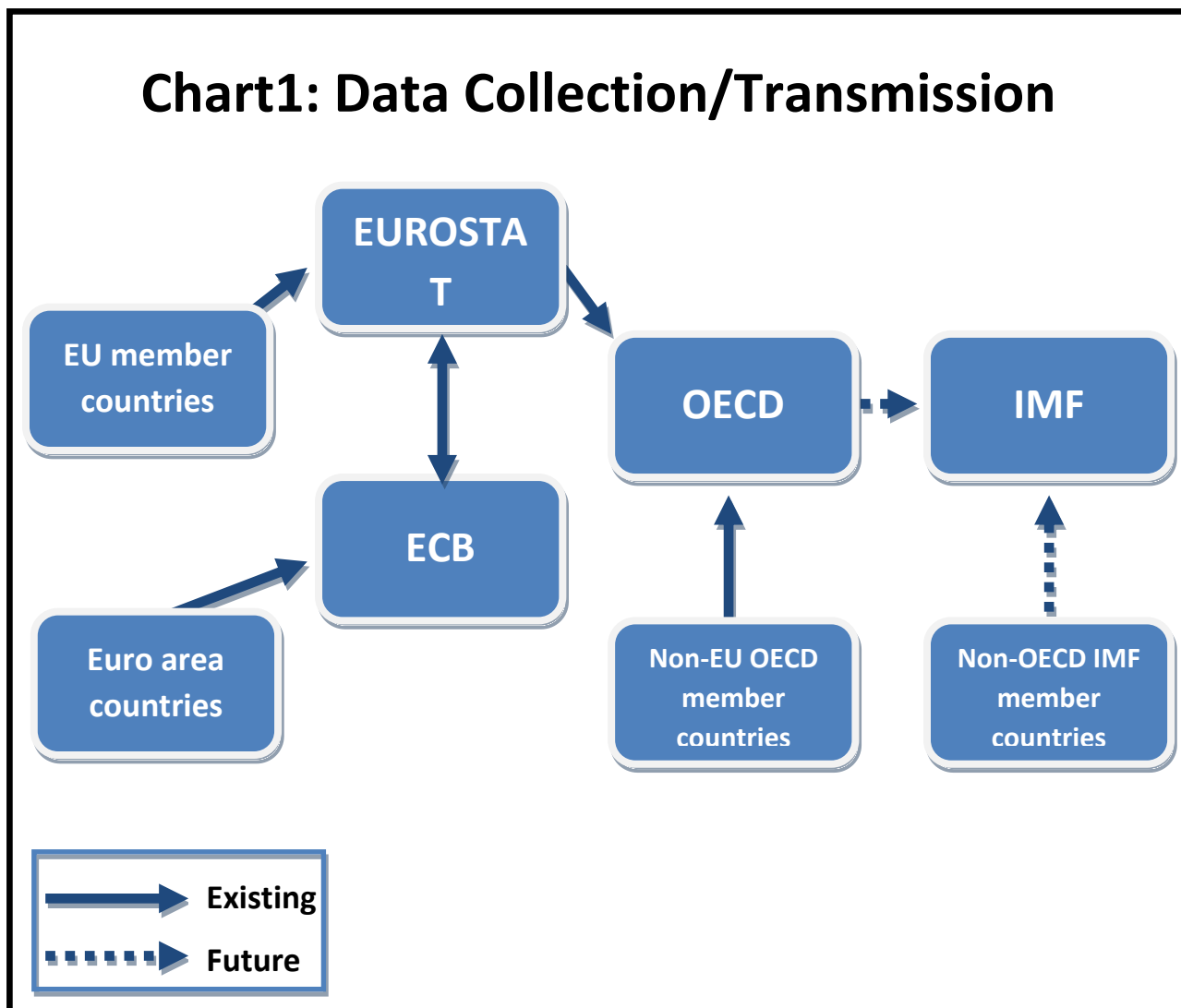
- ii. A country should be required to complete the template for a given reference period or date and submit data to only one international institution. This would be greatly facilitated by web dissemination of machine readable packages of data using encoding protocols such as SDMX, but could also be implemented with Excel formats.

52. The volume of data to be collected and disseminated suggests the need to explore the use of SDMX for data reporting and transmission. Chart 1 shows the existing and proposed future data collection and transmission mechanism. It should be noted that the existing mechanism in Chart 1 may be operational only for selected datasets. Therefore, it may require a fresh review in the context of future collaboration to improve the collection and dissemination of standardized datasets at the international level.

53. Some coordination mechanism may be necessary for developing, in consultation with the G20 countries and other advanced economies, the standardized templates for collecting data from countries and agreeing on the dissemination formats.<sup>7</sup> The data transmission mechanism among the international organizations should also be discussed. The template should be ready for use at least by 2014.

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<sup>7</sup> NAWWE (National Accounts World Wide Exchange) can be used as the basis for this work. NAWWE is based on the common questionnaire agreed by the OECD and Eurostat for the collection of national accounts data. The questionnaire comprises a detailed set of national accounts variables, as specified by the 1993 SNA. These variables have been identified in an extensive set of Excel spreadsheets by means of a common code and specific presentation format.



#### Dissemination mode

54. Eurostat and OECD have been disseminating sectoral national accounts for some time and, hence, they can use the existing IT platform for disseminating data to be collected in future. In the case of IMF, the sectoral data could be disseminated under the website for Principal Global Indicators (PGI).

#### Resource requirements

55. All international organizations involved will have additional cost associated with the implementation of the data collection and dissemination. It is also clear that given the scale of the project, there needs to be close partnership among the agencies and tasks allocated on a comparative advantage basis. These tasks would involve costs for staffing and/or IT. The range of tasks that could be undertaken is listed below.

- i. Designing the templates will involve staff time. Work to start in 2011 and finalized before 2014.
- ii. Providing methodological supports (for example to resolve practical compilation issues and resolving conceptual issues). This will require staff time, probably starting in 2012.
- iii. Providing technical assistance and training. Technical assistance will be needed for countries that have no sectoral accounts or only for some sectors. It will require financing for technical assistance. Training can be managed with some supplement to the existing resources. These activities will probably start sometime towards the end of calendar 2012 or early 2013.
- iv. Most data collection and validation from countries will be done by Eurostat and OECD given the fact that almost all countries capable of producing proposed datasets are members of these organizations. This work would probably start in calendar 2014/2015.
- v. Reviewing and designing the data transmission from countries to an international organization (Eurostat or OECD or IMF) and between the international organizations. Once the IT platform for collecting, storing and disseminating sectoral accounts is put in place, there will be some regular cost for maintaining the database and supporting regular data collection and dissemination.

### **VIII. QUESTIONS FOR DISCUSSIONS**

56. It will not be possible to resolve specific issues that will determine the implementation of fully integrated sectoral accounts. The aim should be to provide at least sufficient guidance to the countries and international organizations for taking the work forward. As there are many issues, some structure is needed to have meaningful and productive discussions. The following paragraphs present some key questions for each element of the sectoral accounts project on the basis of the elaborations of the issues in this paper. The main focus of the discussions should be to achieve some consensus on the level of details and priorities for compiling and disseminating internationally comparable minimum set of integrated sectoral accounts.

#### **Sectors and subsectors**

- 1) Should the sub-sectoring of financial corporations follow the 2008 SNA nine subsectors (see Annex 1)? If a more aggregated sub-sectoring is warranted, what should be the grouping of sub-sectors of the financial corporations?

- 2) Should the non-financial corporations sector be grouped into public, national private and foreign controlled non-financial corporations?
- 3) Should the other depository corporations sector be grouped into public, national private and foreign controlled depository corporations?
- 4) Should further sub-sectoral details be considered?

### **Financial instruments**

- 1) Should the classification of financial instruments in the *2008 SNA* (presented in Annex 2) be adopted as a minimum with the possible extensions as described below?
- 2) Should long-term maturity be further classifying into that with a remaining maturity of year or less and that with a remaining maturity of more than a year so that data on remaining maturity basis is available?
- 3) For which instruments is the currency breakdown most important? Is the grouping into domestic vs. foreign currency sufficient? Or at least should the classification by domestic, SDR basket and other foreign currencies be considered

### **Non-financial assets**

- 1) Should we aim for the *2008 SNA* classification (presented in Annex 3)?
- 2) For natural resources, should at least the *2008 SNA* breakdowns be considered? Should further details (not in the *2008 SNA*) be considered and agreed for mineral and energy resource?

### **Financial flows and positions on a from-whom-to-whom basis**

- 1) What are your views on the compilation of fully integrated sectoral financial flows and positions on a from-whom-to-whom basis at least at some aggregated level of sectoring?
- 2) What are your views on the compilation of more detailed financial flows and positions on a from-whom-to-whom basis for a selected sectors or sub-sectors (for example for the financial corporations and general government)?
- 3) What are your views on having some information within the *SNA* framework on counterpart economies and counterpart sectors for the rest of the world? Should some supplementary tables for specific financial instruments or sectors be considered?

## Priorities

- 1) What are your views with respect to the general directions presented in Table 1 about the priorities for scope of accounts?

## Outreach, technical assistance and training

- 1) What are your views with respect to the need and possible avenues for outreach, technical assistance and training (as described in section VI of the paper)?
- 2) Do you have views on the two-track approach to assist countries with advanced statistical systems (mainly through outreach) and countries with less developed statistical systems (mainly through technical assistance and training)?
- 3) What are your views on the usefulness and prospect for preparing a compilation guide on balance sheet and on flow of funds on a from-whom-to-whom basis?

## Process for supporting the implementation

- 1) **Time frame:** Is the timeframe of 3 years for implementation by the advanced economies is realistic?
- 2) **Template:** Do you have any views on the proposal that the templates for collecting data from countries should have a long-term horizon, be valid as long as the current statistical standard (2008 SNA/ESA 2010) is expected to remain valid, and should allow reporting by countries that have full detail as well as by those that have less detail? What are your views on the coordination mechanism for designing the templates?
- 3) **Data transmission by countries:** Do you have any views on the proposal that a country should be required to complete the template for a given reference period or date and submit data to only one international institution?
- 4) **Data collection and transmission by international organizations:** Do you have any views and suggestions on the proposal described in this paper and Chart 1 for the data collection, transmission and dissemination by international organizations?
- 5) **Compilers workshop:** What are your views for organizing a workshop around late 2012 for evaluating progress and discussing implementation issues?

### Annex 1. Possible Institutional Sectors and Subsectors for Sectoral Accounts

Sectors and subsectors	SNA code
Non-financial corporations Public non-financial corporations National private non-financial corporations Foreign-controlled non-financial corporations	S.11
Financial corporations The central bank Deposit-taking corporations except the central bank Public deposit-taking corporations National deposit-taking corporations Foreign-controlled deposit-taking corporations Money market funds (MMF) Non-MMF investment funds Other financial intermediaries, except insurance corporations and pension funds Financial auxiliaries Captive financial institutions and money lenders Insurance corporations (IC) Pension funds (PF)	S.12 S.121 S.122 S.123 S.124 S.125 S.126 S.127 S.128 S.129
General government Central government State government Local government General government social security Households Non-profit institutions serving households	S.13 S.1311 S.1312 S.1313 S.1314 S.14 S.15



**Annex 2. 2008 SNA Financial Instruments—Full Detail**

SNA codes	Financial instruments and sub-instruments (F for transactions; AF for stocks)
F1	Monetary gold and SDRs
F11	Monetary gold
F12	SDRs
F2	Currency and deposits
F21	Currency
F22	Transferable deposits
F221	Interbank positions
F229	Other transferable deposits
F29	Other deposits
F3	Debt securities
F31	Short-term
F32	Long-term
F4	Loans
F41	Short-term
F42	Long-term
F5	Equity and investment fund shares
F51	Equity
F511	Listed shares
F512	Unlisted shares
F513	Other equity
F52	Investment fund shares/units
F521	Money market fund shares/units
F522	Non MMF investment fund shares/units
F6	Insurance, pension and standardized guarantee schemes
F61	Non-life insurance technical reserves
F62	Life insurance and annuity entitlements
F63	Pension entitlements
F64	Claim of pension fund on pension managers
F65	Entitlements to non-pension benefits
F66	Provisions for calls under standardized guarantees
F7	Financial derivatives and employee stock options
F71	Financial derivatives
F711	Options
F712	Forwards
F72	Employee stock options
F8	Other accounts receivable/payable
F81	Trade credits and advances
F89	Other accounts receivable/payable

### Annex 3. Classification of Non-financial assets in the 2008 SNA

AN1	Produced non-financial assets
AN11	<i>Fixed assets by type of asset</i>
AN111	<i>Dwellings</i>
AN112	<i>Other buildings and structures</i>
AN1121	<i>Buildings other than dwellings</i>
AN1122	<i>Other structures</i>
AN1123	<i>Land improvements</i>
AN113	<i>Machinery and equipment</i>
AN1131	<i>Transport equipment</i>
AN1132	<i>ICT equipment</i>
AN1133	<i>Other machinery and equipment</i>
AN114	<i>Weapons systems</i>
AN115	<i>Cultivated biological resources</i>
AN1151	<i>Animal resources yielding repeat products</i>
AN1152	<i>Tree, crop and plant resources yielding repeat products</i>
AN116	<i>Costs of ownership transfer on non-produced assets</i>
AN117	<i>Intellectual property products</i>
AN1171	<i>Research and development</i>
AN1172	<i>Mineral exploration and evaluation</i>
AN1173	<i>Computer software and databases</i>
AN11731	<i>Computer software</i>
AN11732	<i>Databases</i>
AN1174	<i>Entertainment, literary or artistic originals</i>
AN1179	<i>Other intellectual property products</i>
AN12	<i>Inventories by type of inventories</i>
AN121	<i>Materials and supplies</i>
AN122	<i>Work-in-progress</i>
AN1221	<i>Work-in-progress on cultivated biological assets</i>
AN1222	<i>Other work-in-progress</i>
AN123	<i>Finished goods</i>
AN124	<i>Military inventories</i>
AN125	<i>Goods for resale</i>
AN13	<i>Valuables</i>
AN131	<i>Precious metal and stones</i>
AN132	<i>Antiques and other art objects</i>
AN133	<i>Other valuables</i>

AN2	Non-produced non-financial assets
AN21	<i>Natural resources</i>
AN211	<i>Land</i>
AN212	<i>Mineral and energy reserves</i>
AN213	<i>Non-cultivated biological resources</i>
AN214	<i>Water resources</i>
AN215	<i>Other natural resources</i>
AN2151	<i>Radio spectra</i>
AN2159	<i>Other</i>
AN22	<i>Contracts, leases and licences</i>
AN221	<i>Marketable operating leases</i>
AN222	<i>Permits to use natural resources</i>
AN223	<i>Permits to undertake specific activities</i>
AN224	<i>Entitlement to future goods and services on an exclusive basis</i>
AN23	Purchases less sales of goodwill and marketing assets