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Impact of the financial crisis

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Note by the Directorate General Statistics, European Central Bank

Summary

Several financial crises have been seen over the course of history in different countries and regions. The recent one, however, has spread more globally than many others. This paper discusses the origins of the recent financial crisis, describes relevant features of the review of international statistical standards and concentrates on the main gaps in statistics identified during and because of the financial crisis. The paper also refers to the various proposals for the operational treatment of many changes currently occurring in the economy and reflected in National Accounts.

I. Introduction

1. Financial crises have caused severe suffering in the past. In the Great Depression of 1929 to 1933, the United States lost one-third of its GDP, industrial production halved, and unemployment jumped from 1.8 per cent of the labour force in 1926 to 24.9 per cent in 1933. Over the course of history, we have seen many financial crises. However, not all of them have spread to other countries like the recent one.

2. This paper discusses briefly in its second Part the origins of the financial crisis which broke in August 2007 and reached its peak with the failure of Lehman Brothers just over a year later. Some features of economic and, especially, financial developments in the preceding years which may have fed the crisis had already led statisticians engaged in the ongoing review of international statistical standards to consider various improvements in the statistical treatment of financial corporations and financial instruments. While one cannot say that the review of international statistical standards was a response to the events of 2007-08, or that statisticians can claim to have foreseen these events, the changes in the System of National Accounts, 2008 (2008 SNA) and the 6th edition of the Balance of Payments Manual (BPM6) are timely in that many of the changes, once implemented, will improve the coverage of the financial sector. The relevant features of the review of international statistical standards are described in the third Part of this paper.

3. The financial crisis has however provoked much thought about the institutional structure to support work on, in particular, financial stability, and given rise to intense efforts to identify and close statistical gaps which the events have revealed. Part four concerns the main gaps in statistics (and measurement issues) identified by the financial crisis. It also refers to the various proposals for the operational treatment of many changes in progress in the accounts. Two developments are accordingly reflected in this part of the paper: the Issing Committee report of March 2009 in combination with the de Larosière report which will lead, probably in early 2011, to the establishment of a European Systemic Risk Board (ESRB) with EU-wide responsibilities, which the ECB will support statistically (and in other respects); and the IMF/Financial Stability Board (FSB) report of October 2009 to G-20 Finance Ministers and Central Bank Governors, which contains many recommendations for statistical work. Ideas from other sources are also considered. While some of the presumed needs of the ESRB, and some of the recommendations in the IMF/FSB report and other sources, are rather remote from national accounts, others – and some of the related statistical enhancements on which the ECB and member central banks had already embarked – do concern economic and financial accounts and therefore are of interest to national accounts statisticians. The current position in the EU concerning the statistical treatment of the measures taken in many countries to support banks and other institutions for purposes of government deficit and debt statistics is summarised in an annex.

II. Background - origins of the financial crisis

4. For much of the 1990s and the early years of the new century, economic conditions seemed sound. Advanced economies at least experienced low inflation, and moderate and steady growth. The low inflation encouraged most central banks to keep interest rates low. All this was accompanied by strong growth in financial intermediation and financial activity generally. Thus in the five years 2002-07 (broadly, the years between the dotcom

episode and the outbreak of the financial crisis), while world nominal GDP grew by 69 per cent, stock market capitalisation rose by 157 per cent, the amount of debt securities outstanding by 83 per cent, and banking assets by 111 per cent (all in US dollar terms).¹ But the financial activity that underpinned this development was not entirely of the conventional kind. Rather, especially in the U.S., but also to some extent elsewhere, the originate and distribute model of financial intermediation gained ground. The practice also grew of transferring credit risk from the original lender in other ways. The result was a rapid growth in securitisation activity, and growth in the use of various types of credit risk derivatives (sometimes in association with securitisations, sometimes as an alternative). The initial purpose was twofold: to economise on the use of banks' capital; and to spread credit risk to those most willing to bear it. The result however seems to have been the development of complex and largely opaque interrelationships among financial institutions in which it became difficult to assess who was exposed to whom and to what risks.

5. It was fashionable to argue that financial markets had become more efficient and were able to deal with risk much better than previously. However, while the technology of risk management of financial institutions may have improved, new risks have emerged, for instance in the derivative market. The near-collapse of LTCM in 1998 highlights how hedge fund activities can seriously harm financial stability and that technical expertise may not be sufficient to anticipate all possible outcomes.² Furthermore, the subprime crisis and the ensuing liquidity and solvency crises with the loss of confidence among banks in the years from 2007 to 2009 indicate that risk is far from having disappeared. The impact of the crisis has been massive, affecting the United States and Europe: the collapse of various European banks; the sale of Merrill Lynch to the Bank of America; the bankruptcy of Lehman Brothers and of more than ten U.S. banks; the disappearance of the concept of investment banks in the United States; the nationalisation of Fannie Mae and Freddie Mac. Conditions remain highly unsettled in early 2010, as the current fiscal crises show.

6. So far it appears that the financial crisis of the recent years has entailed four different aspects: Its root cause, and its trigger, lay in the burst real estate bubble of the U.S. housing market in late 2006 and in 2007. The failed mortgage products then led to a severe drop in value of assets, with financial institutions experiencing losses of about US\$1.4 trillion.³ The business model of the U.S. subprime market, built on the assumption that real estate prices would not significantly decrease, was not sound. The opacity of assets securitised and the misleading valuation of illiquid financial instruments led to the realisation that the high rating of tranches of these instruments was not robust enough, and it soon appeared that the financial system had become global and the losses would spread over most markets.

7. This implied a liquidity crisis, a solvency crisis in which the assets of quite a few banks no longer covered their liabilities, and a loss of confidence among banks.⁴ Central banks played a key role to supply liquidity and overcome the sudden break of key money and financial markets. As a consequence, the non-financial sector faced tighter credit conditions and fast widening credit risk spreads. Moreover, households and institutional investors lost confidence in their deposits, uncertainty spread, and they held off consumption and investment, again affecting the real economy. The crisis intensified the

¹ See Table 3: Selected indicators on the Size of the Capital Markets: various issues of the IMF's Global Financial Stability Report, Washington, D.C., October 2009.

² Tomas Garbaravicius and Frank Dierick, Hedge funds and their implications for financial stability, ECB, Occasional Paper Series, No.34, August 2005.

³ IMF, Global Financial Stability Report, Washington, D.C., October 2008.

⁴ D. Snower: A long way to go, Wall Street Journal, 12 November 2008.

slowdown in the U.S. economy and also contributed to the deceleration, and in some cases even to a decrease in real GDP, in European economies.⁵

8. While the proximate causes of the crisis lie within financial markets, the built up of substantial global macroeconomic imbalances may have also contributed significantly. Growing current account deficits, most notable in the United States contrasted with growing current account surpluses in many East Asian economies, notably in the oil-exporting economies and China.⁶ Moreover, it still appears that the Asian financial institutions were overall less exposed, which has been translated into a less significant impact there.⁷

III. Revisions to international statistical standards meeting needs revealed by the crisis

9. Understanding the origins of the financial crisis in the context of globalisation and financial innovation is seen as one of the main challenges for central bank policy analysis, research and decision-making. It also significantly affects statistical work, as high-quality macroeconomic statistics are regarded as one important ingredient in carrying out these tasks of a central bank. Accordingly, financial statistics and - in a broader context - integrated institutional sector accounts capture the structure of the economic and the financial system and provide the level of detail useful for policymaking and research. In parallel, complementary datasets still play a key role for policymaking and research in assessing risks to financial stability, e.g. financial market statistics or banking and insurance statistics aggregated on a group level.

10. Compared to the dynamics of global financial markets, the tasks and projects to integrate new economic and financial phenomena into existing statistical standards are rather long-term oriented and time-consuming. While the various project phases and their timelines may be mainly determined in advance there is still a need to fine-tune this work taking into account new and unexpected developments. A careful planning is especially needed when dealing with integrated systems of national accounts. Such systems are designed in such a way as to comply with the various (horizontal, vertical and stock-flow) identities and restrictions. Expanding the boundaries of assets and liabilities or increasing the coverage of institutional units must be carefully assessed before including new items in the system. In this respect statistical work is somewhat like the design of international financial reporting standards as, in both cases, economic and financial market developments have to be monitored and be 'translated' into appropriate and generally accepted standards.

11. Also from this viewpoint, the update of the System of National Accounts started some time before the financial crisis. However, when dealing with aspects of the globalisation and of financial innovation, the framework was also set to better integrate new phenomena which are more closely related to the recent crisis and to reflect economic and financial vulnerabilities. In this sense, the 2008 SNA appears appropriate to ensure a sound and relevant analysis of today's (national and regional) economies.

⁵ H. Siebert, *Rules for the Global Economy*, Princeton 2009.

⁶ M. Astley, J. Giese, M. Hume, C. Kublec, *Global imbalances and the financial crisis*, Bank of England Quarterly Bulletin, 2009 Q3.

⁷ See Pascal Jacquinot and Roland Straub, *Globalisation and the euro area - simulation based analysis using the New Area Wide Model*, ECB Working Paper 907, June 2008; and Alessandro Calza, *Globalisation, domestic inflation and global output gaps - evidence from the euro area*, ECB Working Paper 890, April 2008.

A. Update of the System of National Accounts

12. How to keep an international statistical standard underlying high-quality macroeconomic statistics and national accounts up to date, and in line with the changes in economies such as those due to globalisation, financial innovation, advances in methodological research, and evolving users' needs? In 2003, the United Nations Statistical Commission (UNSC) approved a work programme for updating the 1993 SNA with the assistance of an advisory expert group on national accounts (AEG). The Inter-Secretariat Working Group on National Accounts (ISWGNA), comprising Eurostat, the IMF, the OECD, the UN, and the World Bank, was mandated to coordinate and manage the update project. The project website at <http://unstats.un.org/unsd/nationalaccount/snarev1.asp>, maintained by the UN Statistics Division, covers a broad documentation on project management, draft chapters and materials supporting the world-wide process of gathering comments, the list of issues agreed to be considered during the update and the development of a set of recommendations, the forward-looking research agenda, and meetings.

13. In its report to the UNSC in 2003, the ISWGNA set the scope for the update of 1993 SNA. It clearly indicated that new issues should be identified that are emerging in the new economic environment. The update of the SNA was essentially based on a list of 44 updating issues for discussion.⁸ Many of them are linked to topics related to relatively new financial phenomena such as the treatment of credit derivatives, repurchase agreements, non-performing loans, index-linked debt securities or employee stock options in the accounts. During this review process, it emerged that trends such as globalisation or financial innovation were considered important enough to be reflected in macroeconomic statistics. At the same time it was felt that in the ten years since its adoption, the 1993 SNA had shown a remarkable resilience in a changing environment and had proved to be a robust framework that had gained broad appreciation.⁹

1. Globalisation reflected in the 2008 SNA?

14. Globalisation has undoubtedly brought great benefits, though with certain risks. In a globalised economy, national inflationary developments affect world inflation and asset allocation. Monetary policy may cause asset price inflation and, likewise, a national deflation may have international repercussions. Exchange rate crises spread from one country to another and threaten to develop into an international systemic crisis. Financial crises move from the financial centre in one country to that of another. The cross-border links operate through many mechanisms, among them risk allocation across banking products, contagion as a psychological factor or as a consequence of budget restraints of economic agents.

15. The 2008 SNA deals with aspects of globalisation and the derivation of relevant indicators when considering the relationships between corporations in the domestic economy and in the rest of the world. It stresses that a significant increase in cross-border financial movements including direct investment has become a key factor in international economic integration. Accordingly, regular analysis of foreign direct investment (FDI) trends and developments is an integral part of most macroeconomic and cross-border

⁸ The 44 issues for discussion are also listed and described on the UN website <http://unstats.un.org/unsd/sna1993/issues.asp>.

⁹ United Nations, E/CN.3/2003/9, Statistical Commission, Thirty-fourth session, 4-7 March 2003, Item 4 (a) of the provisional agenda: Economic statistics: National accounts. Report of the Task Force on National Accounts. Note by the Secretary-General. Volume 1 of the 2008 SNA has been approved by the UNSC in 2008 and Volume 2 in 2009. It is available on the website of the UNSD (<http://unstats.un.org/unsd/sna1993/snarev1.asp>).

financial analysis by identifying the source and destination of these investments. Several indicators based on direct investment statistics facilitate the measurement of the extent and impact of globalisation.

16. Direct investment positions show an important class of investment made abroad and received from abroad, divided between equity and debt, at a given reference point in time. FDI positions as a percentage of GDP give one indication of the extent of globalisation at that time. These structural indicators demonstrate the interdependence of economies. Financial transactions show the net inward and outward investments with assets (acquisitions less disposals or redemptions) and liabilities (incurrence less repayments) presented separately by instrument in any given period.

17. Direct investment income provides information on the earnings of direct investors and of the direct investment enterprises. Direct investment earnings arise (i) from distributed earnings as well as undistributed earnings which are treated as reinvestment of earnings in that enterprise and (ii) from interest on inter-company loans, trade credit and other forms of debt.

18. There is also interest in analysing the activities of multinational enterprises where more than 50 per cent of the voting power is held. Thus the multinational enterprises correspond to foreign controlled enterprises. These statistics are known as Foreign Affiliates Statistics (FATS), and are described in the Recommendations Manual on the Production of FATS and elaborated in Measuring Globalisation: Handbook on Economic Globalisation Statistics.¹⁰ Work is continuing to ensure the consistency of the various sets of statistics cited in these and other publications on globalisation. Thus the multinational enterprises correspond to foreign controlled enterprises in the SNA. In addition to statistics on the activities of multinational enterprises, statistics are also available for the wider group of corporations with links in other economies, not just those where there is majority ownership, called. This wider group are foreign affiliates.

2. Financial innovation reflected in the 2008 SNA?

19. To get a more complete picture of the SNA update process in terms of financial innovation it is needed to look at the issues for discussion in the context of defining institutional units or of classifying sectors. One of the central topics refers to questions how to determine the relevant features of institutional units and how to group them into institutional sectors or sub-sectors. Closely linked to these questions is the issue how to separately identify financial corporations involved in financial intermediation activities like securitisation transactions, securities lending, and repurchase agreements. As many of these activities are cross-border, a related issue concerns the criteria to determine the residence of a unit. Looking more closely at the tasks of how to refine the current financial asset and liability classification and to subdivide the financial corporation sector, it is obvious that various new components have been included in the 2008 SNA.

20. Taking into account that many refinements of the SNA may have adverse effects on the continuity of the system, there is always some reluctance to change substantially the system as a whole. This is also in line with the request of many researchers and analysts to keep macroeconomic time series as much as possible 'stable' over a rather long period of time. Nevertheless, financial innovations may have to be implemented into the SNA as recommended in the current update in order to keep the system up-to-date and relevant to policy and analysis.

¹⁰ See Recommendations Manual on the Production of FATS, Eurostat, 2007; and Handbook on Economic Globalisation Statistics, OECD, 2005.

21. From an ECB monetary policy perspective it is important to integrate new elements reflecting financial innovation into the wide range of statistics available at the ECB. This also refers to the framework of euro area accounts, which provides a consistent overview of the inter-linkages among the transactions and positions of the various institutional sectors classified by their role in the economy like households, non-financial corporations, financial corporations, and general government.¹¹ These euro area accounts require rather precise specifications of the institutional units and their classifications. Economic activities are reflected in both, transactions and other changes in stocks, and the architecture of the system is based on a complete sequence of accounts, including balance sheets.

B. Sub-sectoring of financial accounts

22. For financial statistics and national accounts, groups or groupings of institutional units are used to form institutional sectors or sub-sectors for compiling macroeconomic statistics. In the 2008 SNA, the sub-sectors of the financial corporations sector have been substantially expanded to allow a more useful presentation of their activities in the context of the broad range of financial innovations. The definition of which units make up the various sub-sectors of the financial corporation sector was changed to reflect the nature of their output (financial services) rather than their activities. Risk management and liquidity transformation were added to financial intermediation as activities which better capture the nature of the performance of the various financial corporations. Accordingly, the list of sub-sectors of the financial corporations sector has been expanded to accommodate the more detailed description of financial corporations.

23. The subsectors central bank, deposit-taking corporations and money market funds (MMFs) together constitute monetary financial institutions (MFIs) as defined by the ECB.¹² Other MFIs (other, that is, than central banks) cover those financial intermediaries through which the effects of the monetary policy of the central bank are mainly transmitted to the other entities in the economy. Financial intermediaries dealing with the pooling of risks are included in the two subsectors insurance corporations and pension funds. The other financial institutions cover the subsectors non-MMF investment funds, other financial intermediaries, except insurance corporations and pension funds, financial auxiliaries and captive financial institutions and money lenders.

24. Of specific importance are non-MMF investment funds, which are collective investment undertakings holding financial and/or non-financial assets with the sole objective of raising capital from the public by issuing shares or units. Investment funds can be open or closed (open- or closed-ended investment funds). Some investment funds invest in other funds (“funds of funds”). Hedge funds as a kind of investment fund cover a heterogeneous range of collective investment schemes, typically involving high minimum investments, light regulation, and a wide range of investment strategies. Private equity funds are used for making investments in equity securities. They are typically limited partnerships with a fixed term of ten years (often with annual extensions). At inception, institutional investors make an unfunded commitment to the limited partnership, which is then drawn on over the term of the fund.

¹¹ European Central Bank, Monthly Bulletin, 10th Anniversary of the ECB, 2008.

¹² See Regulation (EC) No 2423/2001 of the ECB of 22 November 2001 concerning the consolidated balance sheet of the monetary financial institutions sector (*ECB/2001/13*) and its corrections and amendments.

1. Financial groups, conglomerates and multinationals

25. Instead of forming an institutional sector, a second approach - also described in the 2008 SNA but not recommended in national accounts practice - is to group institutional units to financial groups (a group of (predominantly) financial corporations, but to some extent also of non-financial corporations, as resident and non-resident units) – not on the basis of principal functions, behaviour and objectives of institutional units, but on the basis of the concept of control.¹³ Large financial groups, or conglomerates, may be created whereby a parent corporation controls several subsidiaries, some of which may control subsidiaries of their own, and so on.

26. For financial stability purposes, it is necessary to have information relating to a financial group as a whole and data are usually presented consolidated at a group level. When assessing risks and their possible spreading over institutions and markets, it is of key importance to know which headquarter is bearing risks for (disruptions in the quality of) its assets – wherever they are held within the group/conglomerate; and in case of failure of an institution or a whole group, it is also key to assess which other groups are exposed to the group either directly on balance sheet or indirectly through guarantees or other contingent liabilities, and would therefore become liable or will incur losses. However, each individual corporation is still treated as a separate institutional unit, whether or not it forms part of a group. Even subsidiaries that are wholly owned by other corporations are separate legal entities that are required by law and the tax authorities to produce complete sets of accounts, including balance sheets.

27. Financial groups are not stable or easily identifiable in practice and it may be difficult to obtain data for groups whose activities are not closely integrated. Moreover, many conglomerates are much too large and heterogeneous for them to be treated as single units, and their size and composition may be continually shifting over time as a result of mergers and takeovers.

28. Conglomerates that include corporations resident in different countries are usually described as multinational corporations. For multinational enterprises, the standard accounts may be available only for the group as a whole where relationships between enterprises in different countries have been consolidated. In this case, national accountants would need to consult other sources for the required non-consolidated data. In this context, development work needs to be mentioned on European Registers and on the ECB's Register of Institutions and Assets Database (RIAD).

2. Classifying specific financial corporations

29. Some efforts have been made to clarify the classification of specific institutional units within the financial corporations sector. These units are financial vehicle corporations engaged in the securitisation of assets (FVCs) and other institutions like special purpose entities (SPEs), conduits and brass plate companies. The 2008 SNA classifies FVCs as part of the subsector other financial intermediaries, except insurance corporations and pension funds. The new ECB Regulation, approved in December 2008, foresees to collect data on these types of financial corporations. The Regulation defines FVCs as institutional units carrying out securitisation transactions. They issue debt securities the credit risk on which lies with investors in them, and they also acquire assets underlying the issue of debt securities. FVCs may be constituted under contract law (as common funds managed by

¹³ Non-financial groups consist of predominantly non-financial corporations. See 2008 SNA, 4.51f.

management companies), trust law (as unit trusts), company law (as public limited companies) or any other similar mechanisms.¹⁴

30. FVCs are distinguished from entities such as SPEs, conduits, brass plate companies and the like, most of whose assets or liabilities are not transacted on open financial markets. Some SPEs and trusts hold assets and receive property income solely for their owners. Other entities transact only with a limited group of counterparties, such as with subsidiaries or with subsidiaries of the same holding company or entities that provide loans from own funds. In this respect they are to be distinguished from financial intermediaries which usually interact with a large number of various counterparts at least on one side of their balance sheet. When these entities do not bear market or credit risks, they are combined with their parent corporation, if resident in the same country as the parent. When entities are set up outside the economic territory in which the parent corporation is located, they are considered resident of the country in which the entity is incorporated, even if they have little or no physical presence. In these cases, they are treated as separate institutional units of the financial corporation sub-sector, captive financial institutions and money lenders, of the host economy.

C. Increasing complexity of financial instruments

31. Beyond the specification of monetary variables as a subset, various refinements of the various financial asset and liability categories have been included in the 2008 SNA. Related to the accounting of repurchase agreements some detailed changes have been included like the statement that 'on-selling is common' and that, in this case, a negative asset is recorded for the lender to avoid double-counting. Furthermore, not only repos should be covered in terms of a cash collateral but also repos covered in terms of a security collateral and also gold swaps, loans and deposits.

32. For securities, a more detailed breakdown is recommended: Equity is split into shares (listed and unlisted), other equity and investment fund shares or units. Also for debt securities, a more comprehensive specification is foreseen taking into account the development of security-by-security databases. Debt securities are described with breakdowns by (original) maturity, currency, and type of interest. Borderline cases between financial derivatives and securities are discussed. Furthermore, a distinction is made between options and forwards, while employee stock options are shown separately. Further breakdowns are suggested as supplementary items, like credit derivatives or embedded derivatives.

33. Rather detailed considerations have been made on the accounting treatment of insurance technical provisions. With reinsurance, specific financial transactions take place between reinsurers and direct insurers, namely transactions in reinsurance technical provisions and transactions in financial claims with direct insurers (the ceding corporations). Reinsurance technical provisions due to reinsurance contracts are shown as the direct insurer's financial claims on the reinsurer without consolidating them. Reinsurance technical provisions are included in various sub-categories of insurance technical provisions. To separate them they may have to be identified by type of insurance (non-life, life, or pensions) or by type of provision (unearned premiums, unpaid claims, insurance provision).

¹⁴ Regulation (EC) No 24/2009 of the ECB of 19 December 2008 concerning statistics on the assets and liabilities of financial vehicle corporations engaged in securitisation transactions (ECB/2008/30).

34. Questions also arose in the course of the review as to whether all types of pension entitlements should be covered within the system. This is closely linked to the issue how far provisions, as shown in business accounting, should be treated as assets and liabilities. The decision taken on this subject is to include all pension entitlements of private schemes within the asset boundary but not most of the pension entitlements incurred by defined-benefit schemes managed by general government. Another modification refers to the enclosure as assets of standardised guarantees as a form of credit insurance.¹⁵

1. Guarantees

35. Guarantees have a significant impact on the behaviour of economic agents, both by influencing their decisions on production, income, investment or saving and by modifying the lending and borrowing conditions on financial markets. Some borrowers would have no access to loans in the absence of guarantees, while others benefit from comparatively low interest rates. Guarantees appear in the corporations sectors and are also significant for general government and for the public sector as government activities are often linked with their issuance or activation. Guarantees are typically activated in the context of economic or financial turmoil. In this context, an analysis of risk exposures incurred by guarantors as usually reflected in their off-balance sheet commitments is quite important in policymaking to prevent crises.

36. The 1993 SNA indicates that only guarantees that are classified as financial derivatives should be recorded in the standard accounts, with supplementary information to be provided where contingencies are important for policy and analysis. In the 2008 SNA, three types of guarantees are distinguished: credit default swaps (CDS), standardised guarantees, and one-off guarantees.¹⁶ While general agreement on the treatment of CDS (as financial derivatives) and one-off guarantees (as contingencies) was achieved, some questions remain concerning the treatment of standardised guarantees.

37. Guarantees are treated as standardised guarantees for which the probability of default can be established but which do not meet the definition of a financial derivative, and hence are related to an actual financial arrangement between the lender and the borrower. Classic examples are export credit guarantees or student loan guarantees. The expected loss to be considered is a probability-weighted concept. Although each individual guarantee is unlikely to be called, it is likely for the group as a whole that some payments will have to be made. So for each individual guarantee an amount is recorded that would be a percentage of the loan guaranteed based on loans of similar risk. The estimated future payments would be discounted and take account of any likely recoveries where payment under the guarantee gives the guarantor rights over defaulting assets or other collateral.

38. The guarantee may actually be contracted either by the creditor or the debtor, but the asset is always recorded in the balance sheet of the entity that holds the right to claim and receive funds from the guarantor. Rerouting transactions is needed when the entity that pays the premium is not the one that holds the asset. Given the similarity of such cases with insurance contracts (both relying on the spreading of risks over a large number of independent contracts), they are treated as insurance technical provisions. Valuation would be consistent with the treatment of guarantees as provisions.

39. The expected losses are recorded as paid to the guarantor, becoming 'reserve assets' of the guarantor who also incurs a matching liability at the same time. An equivalent asset

¹⁵ Three types of guarantees are distinguished in the new 2008 SNA: standardised guarantees, one-off guarantees (not to be included into the system) and credit default swaps (treated as financial derivatives). See also *IAS 37 on Provisions, Contingent Liabilities and Contingent Assets*.

¹⁶ See also *IAS 37 on Provisions, Contingent Liabilities and Contingent Assets*.

would be added to the balance sheet of the sector receiving the guarantee, i.e. that of the entity which granted the initial loan. It is recognised that this could imply an overstatement of its assets and net worth. This situation may have already arisen in the 1993 SNA, when a lender buys a credit derivative for protection against a deterioration of the credit-worthiness of the borrower. Some additional information on loan provisioning made by the creditor in the case of non-performing loans will be provided as a memo item or in a set of supplementary accounts in the new SNA to allow analysts assessing this “overstatement” on the assets side.

2. Embedding of money into from-whom-to-whom accounts

40. Monetary aggregates comprise money stock, and changes in it, and are reflected in the developments of the so-called counterparts of money, derived by exploiting certain accounting identities. All countries measure monetary developments, in many cases considering that monetary growth is related to developments in economic activity and, over the longer term, in inflation, and that it contains valuable information concerning financial stability. Numerous definitions of money are possible; the national choice is likely to be an empirical matter, depending on what measure or measures best relate to developments in the national economy. Financial assets included in monetary aggregates are currency, liquid deposits with the central bank and deposit taking corporations, and – less usually – marketable short-term debt securities issued by the money issuing sector, and shares or units issued by MMFs.¹⁷

41. An initial step has been made to allow the integration of money into the 2008 SNA taking into account the appropriate breakdowns of financial institutions and instruments.¹⁸ A three-dimensional system of the financial accounts and balance sheets, with a breakdown of the financial corporation sector and of the financial asset and liability categories as proposed for the 2008 SNA and by counterpart, opens the possibility of identifying money in a matrix, and so of 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 and income accounts.

42. A system to be developed identifies the relevant holders, issuers, and financial assets, and, among the holders, to distinguish between financial and non-financial sectors, since their money holdings may have different implications for economic activity and inflation. The money-issuing sector is assumed to consist of the resident MFIs. Money holders are the remaining resident sectors, including the remaining financial corporation subsectors. Modifications might have to be made in cases where central government is treated as a money issuer and the remaining government subsectors as money holders. Holdings of money by the money-issuing sector itself are netted out. The rest of the world is assumed to be money-neutral.

3. Securitisation

43. The securitisation of assets or future income streams is a well-established process that has already operated for some decades. However, financial innovation has led to the establishment and extensive use of new financial corporations to facilitate the creation, marketing, and issuance of debt securities. Furthermore, securitisation schemes have become increasingly sophisticated and are driven by different considerations like cheaper funding costs than available through banking facilities, reduction in regulatory capital requirements, risk transfer and diversification of funding sources. Securitisation results in

¹⁷ R. Mink, Money, financial investment and financing. *ifc Bulletin*, No 21 – August 2008.

¹⁸ This was already included in the 1995 ESA as Annex 5.1: Link with measures of money.

debt securities for which coupon or principal payments (or both) are backed by specified financial or non-financial assets or future income streams.¹⁹ A variety of assets or future income streams may be used, including residential and commercial mortgage loans, consumer loans, corporate loans, government loans, credit derivatives, and future revenue.

44. Securitisation schemes vary within and across debt securities markets. These schemes can be grouped into three broad types: A securitisation scheme, usually known as on-balance sheet securitisation, involves debt securities backed by an income stream generated by the assets. The assets remain on the balance sheet of the debt securities issuer (the original asset owner), typically as a separate portfolio. The issue of debt securities provides the original asset owner with funds.²⁰ True-sale securitisation, involves debt securities issued by a FVC where the underlying assets have been transferred from the original asset owner's balance sheet. The proceeds received from selling the debt securities to investors fund the purchase of the assets. The income stream from the pool of assets (that is, typically interest payments and principal repayments on the loans) are used to make the coupon payments and principal repayments on the debt securities.

45. Synthetic securitisation, involves the transfer of credit risk related to a pool of assets without transferring the assets themselves. The original asset owner buys protection against possible default losses on the pool of assets using credit default swaps (CDS). The proceeds from the issue of debt securities are placed by a FVC on deposit, and the interest accrued on the deposit, together with the premium from the CDS, finances coupon payments on the debt securities issues. If there is a default, the original asset owner continues to receive coupon and principal payments as some of these funds are re-directed away from some investors to cover default losses. Synthetic securitisation without a FVC occurs when the original asset owner issues credit-linked notes (CLN). CLN are debt securities that are backed by reference assets, such as loans and bonds, with an embedded CDS allowing credit risk to be transferred from the issuer to investors. Investors sell credit protection on the reference assets to the protection buyer (or issuer) by making an upfront payment to the buyer. If no default occurs during the life of the note, the redemption value of the note is paid to investors at maturity. If a default occurs, then investors receive the redemption value of the note less the value of default losses.

46. Implementing a new ECB Regulation to collect data on FVCs will allow covering transactions and positions of these institutional units vis-à-vis other market participants, specifically MFIs. Given the role of MFIs as originators and loan servicers for many FVCs, an integrated reporting scheme is planned for FVCs and MFIs, both to limit to the extent possible the reporting burden and to achieve the best possible quality of statistics. Especially data on securitised loans will have to be reported which are granted by these institutions, but originated and continued to be serviced by MFIs and by other resident sectors and by non-residents. The new statistics will also allow identifying securitisation of loans by MFIs which, according to accounting standards, are not to be derecognised from the MFI balance sheet. However, questions will remain how to adequately cover synthetic securitisation implying the transfer of credit risk but not the transfer of the underlying assets in the context of macroeconomic concepts.

¹⁹ This definition of securitisation as used in the Handbook on Securities Statistics is broader than the definition outlined in the ECB Regulation which is similar to those securitisation schemes described below as true and synthetic securitisation (see <http://www.imf.org/external/np/sta/wgsd/hbook.htm>).

²⁰ The issuance of asset backed securities in a (on-balance sheet) securitisation is to be distinguished from the issuance of covered bonds. Covered bonds exist in several jurisdictions and in different format (e.g. Pfandbriefe). The main difference from a securitisation as discussed here is that covered bonds, unlike asset backed securities, usually provide for the double recourse to both the pool of assets and the issuer in case of the default of the issuing financial institution.

47. While closing an important gap in euro area statistics, reporting will only be mandatory for FVCs resident in the euro area. Euro area MFIs will report some information regarding transactions with non-euro area securitisation vehicles. Still, statistical information for securitisation vehicles resident outside the euro area would be useful to complete the picture.

D. The balance sheet approach

48. Compared to the more traditional examination of transaction data, the balance sheet approach focuses on the analysis of stock data in an economy's sectoral balance sheets and its aggregate balance sheet, of financial and non-financial assets, liabilities and net worth. This approach to the analysis of financial stability involves an institutional sector approach as developed for the euro area. Its innovative part is that the focus of attention is not solely on the activity and strength of the economy as a whole vis-à-vis the rest of the world, but also within the economy and in the interrelations between institutional sectors and sub-sectors as described above. The sectors generally covered in the approach may be further divided into sub-sectors such as various kinds of financial institutions, e.g., the central bank, deposit-taking corporations and other financial intermediaries.

49. The balance sheet approach is used for analysing financial stability. Institutions like the IMF or the ECB stress its advantages in monitoring and supervising financial activity, alongside the analysis of financial stability on the basis of assessing the quality and diversification of each sector's and sub-sector's portfolio of assets and liabilities, identifying points of weaknesses in the financial system, measuring exposure to sectoral financial risks, mapping the connections between the sectors, and assessing the dynamics between them at times of shocks.²¹

50. The framework for assessing balance sheet risks may focus on four types of balance sheet mismatches, all of which help to determine a country's, sector's or sub-sector's ability to service debt in the face of shocks: (i) maturity mismatches, where a gap between liabilities due in the short term and liquid assets leaves a sector or sub-sector unable to honour its contractual commitments if the market declines to roll over debt, or creates exposure to the risk that interest rates will rise; (ii) currency mismatches, where a change in the exchange rate leads to a capital loss; (iii) capital structure problems, where a heavy reliance on debt rather than equity financing leaves a firm or bank less able to weather revenue shocks; and (iv) solvency problems, where assets are insufficient to cover liabilities, including contingent liabilities. Maturity mismatches, currency mismatches, and a poor capital structure all can contribute to solvency risk, but solvency risk can also arise from simply borrowing too much or from investing in low-yielding assets. Nevertheless, off-balance sheet commitments, usually treated as contingencies in the 2008 SNA, may exist which are not sufficiently reflected in national accounts.

51. From this perspective, a financial crisis could occur when there is a fall in demand for financial assets of one or more sectors: creditors may lose confidence in a country's ability to earn foreign exchange to service the external debt, in the government's ability to service its debt, in the banking system's ability to meet deposit outflows, or in the households' or non-financial corporations' ability to repay loans and other debt.²²

²¹ See, for instance, the most recent issues of the IMF's Global Financial Stability Report, Washington, D.C., October 2009, and of the ECB's Financial Stability Review, Frankfurt, December 2009.

²² See, for example, Mark Allen, Christoph Rosenberg, Christian Keller, Brad Setser, and Nouriel Roubini, "A Balance Sheet Approach to Financial Crisis," IMF Working Paper, WP/02/210. 2002; Dale F. Gray, Robert C. Merton, and Zvi Bodie, "A New Framework for Analyzing and Managing

E. Aligning the work between international accounting standards and statistical standards

52. The various issues as discussed in the previous sections bring already together a broad range of topics being considered in the context of globalisation and financial innovation and being integrated into the 2008 SNA. In this context it is important to align tightly this work with the work of designing and implementing international financial reporting standards (IFRS). This has been clearly reflected in the various tasks of the working groups and committees contributing to the SNA review process. International initiatives should also be mentioned to line up government accounting practices and international statistical standards. This has started with the release of the various IMF Manuals and their implementation. Valuable work has also been done by the OECD/IMF Task Force on the Harmonisation of Public Sector Accounting, which brought together government accountants and national accountants. Harmonisation of international accounting standards and statistical standards to the extent possible will enable the same source data to be used for several purposes which will contribute to the reliability of macroeconomic statistics and at the same time reduce the reporting burden for corporations.

53. Looking at specific accounting standards which are relevant for the statistical standards the International Accounting Standards Board (IASB) Framework for the Preparation and Presentation of Financial Statements should be mentioned. This framework was approved by the IASC Board in April 1989 for publication in July 1989, and adopted by the IASB in April 2001. It sets out the concepts that underlie the preparation and presentation of financial statements for external users and deals with: (a) the objective of financial statements; (b) the qualitative characteristics that determine the usefulness of information in financial statements; (c) the definition, recognition and measurement of the elements from which financial statements are constructed; and (d) concepts of capital and capital maintenance.

54. The elements directly related to the measurement of financial positions are assets, liabilities and equity. They are defined as follows: (a) an asset is a resource controlled by the entity as a result of past events and from which future economic benefits are expected to flow to the entity. (b) A liability is a present obligation of the entity arising from past events, the settlement of which is expected to result in an outflow from the entity of resources embodying economic benefits. (c) Equity is the residual interest in the assets of the entity after deducting all its liabilities.

55. Accounting for financial instruments under the IFRS is complex. Therefore, it is only possible to mention the revised IAS 32, the revised IAS 39 and the IFRS 7 as they are currently applied. The IAS 32 (Financial Instruments: Presentation) deals with the classification of financial instruments, from the perspective of the issuer, into financial assets, financial liabilities and equity instruments; the classification of related interest, dividends, losses and gains; and the circumstances in which financial assets and liabilities should be offset. The principles in this Standard complement the principles for recognising and measuring financial assets and financial liabilities in IAS 39 Financial Instruments: Recognition and Measurement, and for disclosing information about them in IFRS 7 Financial Instruments: Disclosures.

56. Of the various financial instruments identified by IAS, the asset categories shown in balance sheets generally include cash and cash balances; debt instruments; loans and advances; equity instruments; derivatives; tangible (fixed) and intangible (e.g. goodwill)

Macrofinancial Risks,” CV Starr/RED Conference on Finance and Macroeconomics, NYU 2002; Reimund, Mink, “Selected key issues of financial accounts statistics,” ifc Bulletin, No 21 – July 2005.

assets, tax assets and other assets. On the liability side, the main categories are debt (mainly deposits in the case of banks), provisions, derivatives, tax and other liabilities and capital and reserves. Debt might be further broken down by counterpart and financial instrument, while provisions are shown separately for pensions and similar obligations. Capital and reserves are split into subscribed capital, share premium, reserves and retained earnings.

57. For national accounts, the balance sheet items are mainly classified by type of instrument and liquidity. Although some obligations (e.g. provisions) are not always recognised as liabilities in the SNA, most of the national accounts instrument categories coincide with those of the balance sheet.

IV. Main gaps in statistics and measurement issues identified by the financial crisis

58. This section draws on three main sources: the Issing Committee report (March 2009), the report to the G-20 Finance Ministers and Central Bank Governors prepared by the IMF and the Financial Stability Board, The financial crisis and information gaps (October 2009) and the ECB. The latter is both a supplier of relevant statistics and a user of them, and must prepare for the setting up of the European Systemic Risk Board (ESRB) proposed by the de Larosière group, probably early in 2011. The group report foresees that the ECB will provide the statistics needed by the ESRB, in close liaison with the future European Supervisory Authorities.

A. Main gaps as identified in the Issing Committee report and in the G-20 report

1. The Issing Committee report

59. The recommendations of the Issing Committee report²³ concerning statistical gaps centred on a risk map project ‘comprising off-balance sheet entities as well as risk transfer instruments like CDOs and CDS. In fact, available data bases are not prepared to capture these financial instruments, nor the international interconnectedness among large and complex financial institutions (LCFI). Therefore, as a prerequisite for strengthening counter-cyclical policy measures (e.g. capital adequacy, and liquidity reserves), a coordinated effort to set up a suitable data base of the global financial interconnectedness (the exposure net) and its major risk factors (the risk drivers), is needed.’

60. The Issing Committee report also sees deficiencies in data on individual securities and loans, proposing supranational databases on both. In this context, a standardised credit register should be set up to monitor domestic and cross-border exposures simultaneously. Likewise, the advancement of a global securities register, itself closely related to the risk map project, should be continued in parallel, exploiting possible synergies. The existing Working Group on Securities Databases is mentioned in this context. This matter is taken up in the later discussion of the ECB’s current and planned work.

61. Further recommendations refer to the role hedge funds played in the crisis transmission, due to their strong reliance on bank financing and maturity mismatch and to rating agencies. Concerning hedge funds, regulation is recommended while internationally

²³ O. Issing (Chairman), J. Asmussen, J. P. Krahen, K. Regling, J. Weidmann, W. White, CFS White Paper No. II "New Financial Order - Recommendations by the Issing Committee / Preparing G-20 – London, April 2, 2009"

active rating agencies should be registered and should improve transparency of the rating methodology.

62. The Issing Committee report also dwells on the problem of procyclicality. Some aspects of this have been touched on already, in the context of asset price bubbles, where the availability of (apparently) good-quality collateral encourages (as it certainly did in the years before the crisis) strong growth in lending. The effects via (apparent) sufficiency of bank capital might also be mentioned. The report, though, in connection with national accounts statistics, focuses on the need for better cyclically-adjusted government finance data, i.e. a trigger mechanism to prevent a loosening of fiscal policy when the general government position improves for cyclical reasons in an economic upturn (and conversely when public finances deteriorate through the automatic stabilisers in a downturn).

63. The Issing Committee report also advises central banks to take account of asset price bubbles in conducting monetary policy. This is a matter which monetary economists and policy-makers have often debated. The crisis gives the discussion a new topicality. The relevance for this paper, however, is that in some way trying to prevent bubbles (or to pop them if they emerge) would inevitably give further significance to data on, in particular, residential and commercial property prices, and probably also to the inclusion of at least some non-financial assets in sectoral balance sheets (see further below).

2. The G20-report

64. The report to the G-20 Finance Ministers and Central Bank Governors, submitted by the IMF staff and the Financial Stability Board (FSB) Secretariat (the G-20 report), states that while the financial crisis was not the result of a lack of proper economic and financial statistics, it exposed a significant lack of information as well as data gaps on key financial sector vulnerabilities relevant for financial stability analysis.²⁴ Key recommendations refer to data improvements related to risks, international network connections, sectoral and other financial and economic data sets and to the communication of official statistics.

65. Broadly, the report sees a need to address information gaps in three main inter-related areas. The first is monitoring risk in the financial sector. Much of this concerns the type of supervisory data briefly described above. The second area identified by the G-20 report is international network connections. Here the main national accounts matter is the Coordinated Portfolio Investment Survey (CPIS) conducted annually by the IMF, which is much used by statisticians in balance of payments and international investment position work. The third area identified in the G-20 report is sectoral and other financial and economic datasets, mainly concerned (as the report explains) with sectoral transaction accounts and balance sheets, more fully comparable government finance statistics, and information on residential and commercial real estate prices.

66. The report notes that data on the stock of dwellings, the associated price levels and their changes over time are critical ingredients for understanding household wealth, its evolution over time, and the vulnerability of households' financial position. Similar information on commercial property is relevant not just for monitoring the wealth of the corporate sector, but also for financial stability more generally, given that commercial property accounts for a significant share of collateralised lending for many banks.

67. The report recognises that work is underway to produce a handbook on real estate price indices, led by Eurostat under the auspices of the Inter-Secretariat Working Group on Price Statistics (UNECE, ILO, IMF, OECD, World Bank, and Eurostat), and that the BIS

²⁴ Report to the G-20 Finance Ministers and Central Bank Governors prepared by the IMF staff and the Financial Stability Board Secretariat (*The financial crisis and information gaps*), October 2009

and member central banks have collected a large number of real estate price indicators from various countries around the world (and the ECB has collected such data relating to euro area countries).

68. Other points raised in the G-20 report with a national accounts flavour concern government finance data, where (in the view of the report) the crisis has further highlighted data gaps and problems in comparability, with wide differences in coverage and definitions in national fiscal data, particularly for balance sheet items. The report notes that the World Bank, in cooperation with the TFFS, is creating a database on general government and public sector debt statistics to make such data more widely available and to enhance their international comparability. The report mentions in particular better data on the maturity profile and classification (such as currency and holder) of government debt.

69. There is also concern about the lack of data on cross-border exposures of non-financial corporations. “Onshore” corporations, both financial and non-financial, have used offshore entities to raise finance and provide implicit guarantees; the activities of these entities have often not been recorded in the statistics. The residence status of such offshore entities, registered in some other country but often with no physical presence there, was not clear in the old statistical standards. The new standards make clear that registration or authorisation is sufficient to establish residence, even in the absence of a physical presence in the territory. Of course, although relevant to the concerns of the G-20, correct statistical treatment of these offshore entries following the new standards will not wholly satisfy the concerns of the G-20 report. Accordingly, statistical reporting needs to be amended to reveal the exposures of the onshore corporation via its offshore affiliate.

70. The G-20 report includes various recommendations in which the ECB will be involved. They include the further development of (a) the BIS data collection on securities, the BIS-ECB-IMF Handbook on Securities Statistics and a communications strategy on these data (recommendation 7); (b) cross-border exposures of financial and non-financial corporations (recommendation 13); (c) a template for exposures of large non-bank financial institutions (recommendation 14); (d) a strategy to promote the compilation and dissemination of the balance sheet approach, flow of funds, and sector data (recommendation 15); (e) statistical work to compile and disseminate distributional information (such as ranges and distributional information) (recommendation 16); (f) methodological and data aggregation practices on global and regional aggregates and implementing the Statistical Data and Metadata eXchange (SDMX) for the Principal Global Indicators (PGI) website (recommendation 20).

71. IMF staff and the FSB Secretariat will have to report back to the G-20 Finance Ministers and Central Bank Governors by June 2010 on progress, with a concrete plan of action, including a timetable, to address each of the outstanding recommendations. Afterwards, annual updates are foreseen on the progress of the plan of action.

3. The Principal Global Indicators (PGI) website

72. One of the Working Groups following up the G-20 report is the Interagency Group on Economic and Financial Statistics (IAG) which was established at end-2008 to coordinate work on the improvement of economic and financial statistics (methodologies and data collection) among international agencies. Members of the IAG are the BIS, the ECB, Eurostat, the IMF (chair), the OECD, the UN, and the World Bank.

73. In April 2009, the IAG launched the Principal Global Indicators (PGI) website.²⁵ This website is intended to reflect the needs of users in monitoring economic and financial

²⁵ See <http://www.principalglobalindicators.org>.

trends for the G-20 economies, as systemically important countries. It gives prominence to cross-country indicators, emphasising the comparability of data and has been receiving a growing popularity since its launch. In developing the site, the IAG has drawn on the experience in Europe with the PEEI, and the UN data template for high frequency statistics.

74. G-20 data are presented in a harmonised manner (e.g. "GDP growth" as quarterly growth rate on the previous quarter in constant prices and seasonally and working day adjusted or world aggregates for selected indicators such as quarterly world GDP growth rates within 60 days with certain regional breakdowns). Insofar, the PGI website makes it transparent how far the world is in implementing international statistical standards like the 2008 SNA, which are a necessary but not a sufficient condition for reliable and comparable statistical data.

75. The website will continue to be enhanced over the coming years. New indicators will be added including increased coverage of national data available from the G-20 economies. Additional information on residential and commercial real estate price data is also anticipated. The participating IAG agencies are collaborating on further enhancements, which are expected to include for selected indicators aggregated data such as for the world, OECD countries, and emerging economies. The IAG is also collaborating to further improve access to these data and expect to make them available in SDMX format in the near future. It intends to broaden country coverage in the medium-term.

B. Euro area accounts by institutional sector

76. The ECB had already in mind, or had recently introduced, some statistical enhancements which prove to be relevant to needs in present circumstances. Perhaps the most prominent of these are the euro area integrated economic and financial accounts by institutional sector, for which the first quarterly data were published in May 2007 (annual accounts had been published a year earlier; the ECB had for some years published partial accounts covering the non-financial sectors in the euro area). These accounts, the result of a joint initiative with Eurostat (which is the source of the current and capital accounts) brings together all economic and financial transactions of the main institutional sectors in the euro area, with balance sheets recording financial assets and liabilities, and the accounts showing revaluations and other changes in the volume of assets and liabilities.

1. Euro area accounts for financial stability analysis

77. The crisis has given these euro area accounts a high profile. If further developed in the context of the 2008 SNA, the accounts are relevant to ascertaining (1) the vulnerabilities included in the balance sheet positions of general government, non-financial corporations, and households; (2) conditions in markets to which several of these sectors are exposed, such as the real estate markets; and (3) the financial and real sector linkages within an economy. At the same time, an in-depth analysis of the strength and weaknesses of the financial sector, within an economy and in interaction with other stakeholders in the context of globalisation, makes necessary to also develop a different approach, there.

78. An example of their relevance for financial stability analysis (although, as noted already, they were not devised with this use principally in mind) is a section of the ECB's Financial Stability Review for June 2009. Brief extracts may give some of the flavour of the analysis. It said that data on the euro area financial accounts are used

'to construct a network of balance sheet exposures that connect the main sectors of the euro area financial system ... Net financial wealth and its role in attributing sectors to the borrowers or lenders in the financial system also provides a link between the financial and the real accounts. Therefore, it allows an analysis of the transmission of "vertical"

contagion whereby shocks may spread from the real sector to the financial sector via the net lending positions of the different sectors... In other words, sectors with high debt relative to cash flows tend to be more vulnerable to asset price and cash flow shocks. This captures the “leverage effect” of debt accumulation, which is an important concept in financial contagion literature...[Chart C.3] provides a measure of debt-to-asset ratios for the individual sectors...

Three main observations can be drawn... The first is the overall increase in the size of balance sheet exposures in the first decade of Stage Three of Economic and Monetary Union. The second is the crucial role played by the banking (MFI) sector in the euro area financial system..... The third observation is the growing role played by the OFI sector over the past ten years, [which partly] reflects the expansion of securitisation transactions and off-balance- sheet structures.

The fact that the euro area accounts provide a consistent source of leverage measures across different sectors makes it possible to construct time series for risk indicators at the sector level.

Analysis of balance sheet and risk networks is especially useful for macroprudential purposes, where attention should be paid to the vulnerabilities that arise from the interlinkages among agents in the financial system....’

2. Enhancing euro area accounts

79. The ECB intends to enhance the euro area institutional sector accounts in various important ways. One is a direct consequence of the fall-out from the financial crisis and the likely needs of the ESRB: an extension of the aggregation from the euro area to the EU as a whole, because the ESRB will have an EU-wide remit. (The euro area accounts will of course be retained, because the euro area is the unit relevant to the ECB’s monetary policy function for which the accounts were originally designed.) Incorporation of EU countries outside the euro area presents many practical challenges, notably in data coverage and consolidation/aggregation.

80. The other enhancements would have been made anyway to meet the requirements of ECB users. One is the inclusion of (at least some) non-financial assets in the sectoral balance sheets. Residential and commercial property is the priority here, but the intention is to introduce produced assets owned by euro area/EU residents generally.²⁶ The second major improvement is to widen the counterpart information in the financial account and balance sheet. The point here is that the basic accounts show the sectors which hold financial assets (but not the sectors on which the assets represent claims), and the sectors which have liabilities in the form of the various classes of instrument (but not the sectors who hold the instruments). For example, the basic accounts show debt securities acquired during the quarter (or held at end-quarter) by households, but not the debtor sectors on which they represent claims; and they show the amount of debt securities issued by non-financial corporations, but not which sectors hold those specific securities. This is a deficiency when, for example, there is a need to know how exposed the household sector is to financial and non-financial corporations. In fact the euro area accounts do now present from-whom-to-whom information for deposits and loans, but not for other financial instruments. Planned development of securities holding statistics is relevant here.

81. There are two statistical enhancements which will contribute to the accounts, or make them easier to understand, but which have other purposes also. For non-financial

²⁶ The ECB also has in mind fuller/more comparable data on other aspects of housing and construction, e.g. on housing starts and completions, sales of houses.

sectors, the ECB has introduced a survey of small and medium-sized enterprises (most of which will be in the non-financial corporations sector), since this group may behave differently from larger enterprises. The ECB is further preparing to introduce a survey of households across the euro area (the Household Finance and Consumption Survey) which will provide information on households at different income and wealth levels, with different age profiles, family commitments, etc. The intention is to collect information at lower frequency which will improve understanding of the sector aggregates in the institutional sector accounts.

C. E(S)CB statistics related to financial institutions and markets in view of data gaps

82. Even without the prospect of the ESRB, the crisis would have led to a thorough appraisal of E(S)CB statistics, in view of the severity of the economic consequences and the ECB's statutory task to contribute to the smooth conduct of policies pursued by the competent national authorities relating to the prudential supervision of credit institutions and the stability of the financial system (Article 127, Treaty on the Functioning of the European Union). A preliminary point might be made here. Although many of the statistics regularly compiled by the ECB, usually to form euro area aggregates, have some relevance to the financial stability function (obvious examples are the MFI and other financial balance sheets, and the detailed information on MFI interest rates paid and charged to households and non-financial corporations in the euro area), they were designed largely with the monetary policy function in mind, and conform in definition, coverage, accounting conventions, etc. so far as possible to international statistical standards. For financial stability purposes the ECB has received, via EU financial supervisors, separate, lower frequency data designed to meet supervisory needs. Although efforts have been made to bridge the two data sets, they are not in fact easily reconcilable because of the differences in underlying concepts, coverage, etc.

83. Further to the improvements on euro area and national accounts, there are different work streams followed in E(S)CB financial statistics in view of the gaps identified in the Issing Committee report in the and G-20 report. Hence, one work stream refers to the relationship between micro- and macro-data demonstrated on projects dealing with securities databases and credit registers. Especially, the Issing Committee report presses for their further development, with a common supranational database. While the ECB is considering the use of credit registers as a good basis for detailed statistics and in-depth analysis, work has started much earlier on securities (issues and holdings) information.²⁷

84. While most of recent work was on macro-economic financial statistics and institutional sector accounts efforts are made to re-use supervisory data under the form of aggregated and consolidated (on and off) balance sheet and income data and, to the extent possible, bridge them with national accounts reporting – specifically for deposit-taking corporations, insurance corporations and financial vehicle corporations. Another work stream deals with the development of asset price statistics by using market data e.g. on interest rates, yields, and spreads.

1. Securities databases

85. The ECB already has a huge amount of information on individual securities. Its centralised securities database (CSDB) holds information for statistical purposes on over

²⁷ Not discussed here, because the link with national accounts is slight, is the work on credit risk transfers, looking through asset-backed securities, etc.

five million securities, including information on the sector and residence of the issuer, with up-to-date information on amounts in issue and prices, and on many other variables. For balance of payments and international investment position statistics, and also for investment fund and (shortly) for financial vehicle corporation statistics, transactions and positions in securities are already reported security-by-security and processed using the database. It is foreseen to apply this approach also for MFI balance sheet statistics. Several euro area countries already compile data on securities holdings more widely, usually through data received from domestic custodians.

86. A sub-group of the ECB's Statistics Committee recently reported on a general (at least euro area-wide) collection of data on holdings of individual securities, which will, when implemented, permit the from-whom-to-whom information to be extended to all forms of securities. At the level of the euro area accounts, exposures of sectors and sub-sectors to other sectors could be compiled by strengthening the possible analysis of interrelationships. At the level of micro data, the database would allow to reveal the holdings of sectors and sub-sectors vis-à-vis individual issuers.

87. Information on securities had already become an international priority. Thus the BIS, ECB and IMF have collaborated to produce a Handbook on securities statistics; a second part, on securities holdings statistics, is in preparation. These institutions, and some others, have formed a group to carry forward work on securities statistics. While the crisis has undoubtedly given a stimulus to these initiatives, they would probably have occurred anyway. This all concerns the full information on financial exposures and interrelationships highlighted in the reports mentioned above, at least so far as securities are concerned.

88. Some other initiatives might be mentioned. In connection with securities statistics, the ECB is keen that a world-wide securities reference data utility should be established – essentially a facility to provide standardised data on securities, the data to be provided at the time of issue. This would fit with other proposals for (for example) a global database on securities.

2. Credit registers

89. On credit data, while such a database may be a very long term objective, work is under way to further collect and harmonise such data across existing (central and private) credit registers. Some national central banks in EU countries maintain official credit registers (CRs); there are also private registers to which banks and other lenders contribute data and which they may consult. There are three main uses for the information content of CRs; (1) to enable bank supervisors to accurately assess credit risk in supervised financial institutions, i.e. to assess credit concentration and/or potential or actual defaulting both on the lender and borrower sides; (2) to support financial transactions by assisting credit institutions and other lenders in the evaluation of potential borrowers' risk²⁸; and (3) for economic analysis. However, some concrete experiences have shown that once the data coverage and availability of CRs are improved, their content can also support additional needs such as macro-prudential analysis, research and statistical purposes, as well as market and credit risk analysis.

²⁸ In the case of Private Credit Bureaus, there is a trend to develop value added services to their customers by modelling consumer behaviours and/or assessing default probability by types of loans or classes of borrowers. Central Credit Registers may also develop their credit risk models for supervisory purposes.

90. Due to legal constraints, the different operational goals pursued, or competition across private credit bureaus (PCBs)²⁹, there has been some specialisation in the various existing CRs, e.g. positive (reporting on new and outstanding loans) versus negative (loan defaulting) reporting, or lending coverage e.g. loans to non-financial corporations or loans to households for e.g. consumption or house purchases (with or without mortgage). Actually, the scope and coverage of (existing) central CRs and PCBs vary much across countries. However, increasingly there is an expectation, and some concrete experiences, that CR data are gaining momentum. Their coverage and quality may stepwise increase and they could also be used for purposes such as macro-prudential analysis and research and as input to monetary and financial statistics, balance of payments statistics and financial accounts.

3. Bridging national accounts and supervisory data

91. The focus here is on national accounts, broadly defined – roughly, the data measured and recorded following the SNA, the ESA and related manuals. Since many of the gaps mentioned in the Issing Committee report and in the G-20 reports, however, relate to supervisory data and data meeting the needs of financial stability, it may be useful to explain briefly the difference. As well as accounting rules and a strict distinction between transactions and other flows (revaluations and other changes) on assets and liabilities, international statistical standards make clear distinctions between resident and non-resident and between institutional sectors. These standards are (of course) observed in integrated institutional sector accounts and in the banking and monetary statistics and other financial institutions and markets data compiled for policy purposes. Thus, for example, national and euro area banking statistics, and the monetary aggregates derived from them, cover the balance sheets, transactions and other flows of institutions classified as MFIs which are resident in the country concerned or the euro area regardless of where the head office is located, and they exclude the business of foreign branches of resident MFIs. Moreover, they exclude the business of subsidiaries of MFIs which are not themselves MFIs but (for example) leasing companies or consumer credit grantors – such entities are other financial intermediaries, and the statistics do not merge transactions and other flows or combine institutional units of different sectors or residency.

92. Statistical data used for supervisory financial stability purposes focus on the business of the whole supervised institution. As explained in relation to the structure of financial groups, conglomerates and multinationals earlier the data are accordingly consolidated across national boundaries to include also the business of foreign banking branches, and they may be consolidated across sector boundaries to include the business of financial subsidiaries which are not themselves banks (or MFIs). The content of the information is also somewhat different. Although supervisors use the sectoral distinctions and the detailed financial instruments reported for statistical purposes, they are very much interested in measuring risks (such as counterparty credit or market risk). Many of the identified gaps, and the attempts by the ECB (and others) to fill them, relate to supervisory/financial stability-type data as identified in the G-20 Report.

4. Monetary and financial statistics

93. The new regulations on MFI balance sheets and MFI interest rates (the former adopted in late 2008, the latter in early 2009, but fully implemented only from mid-2010 – the ECB wherever possible gives reporting institutions at least a year to prepare for new

²⁹ A PCB receives data from the respective lenders, who can then receive information on consolidated data about their credit applicants. Data received by the credit bureau is stored in a common database to which all reporting lenders are granted access as long as the data provided are timely and accurate.

requirements) splits for some purposes the household sector into households (as generally understood) and sole proprietors, which in most countries form an important part of the household sector, but whose behaviour may differ from that of households viewed as individuals or family units.

94. Furthermore, by allowing a more granular breakdown by size of new loans to non-financial corporations, the new regulation on MFI interest rates will provide further insights into the financing of small and medium-sized enterprises.

95. Another important feature of the new MFI balance sheet regulation is its requirement for information on securitisation. This activity assumed great importance in the US and lesser though still significant size in the euro area. In a true securitisation the original lender (usually, but not always, a bank) packages together some loans and sells them to another entity, often a vehicle corporation set up for the purpose. This type of transaction attracted the attention of ECB statisticians some years ago, because it risked distorting the MFI lending statistics, a critical element in monetary policy analysis – it would appear that MFI lending was being repaid, whereas in fact there was no withdrawal of credit from the borrowing sectors (who might even be unaware of the operation, since the bank would often continue to administer the loans). Accordingly the new MFI balance sheet regulation, together with a new regulation addressed to FVCs (the usual counterparties of MFI in the securitisation operation), will shortly provide full information about these operations and the subsequent history of securitised loans. This development coincides with a close interest in such operations from the perspective of financial stability. It was in the market for a brand of such securitised loans (the market for securitised sub-prime mortgages) that the financial crisis broke.

96. FVCs are only one of the categories of financial institution on which the ECB has recently improved, or is about to improve, its statistical coverage. At the start of Stage III of Economic and Monetary Union, the priority was statistics on MFIs, whose balance sheets in the euro area still account for about 70 per cent of all financial corporation balance sheets and provided almost all the information for the monetary aggregates and counterparts. The ECB relied on a more informal approach for the collection of data on non-MMF investment funds, essentially relying on information collected by NCBs under national arrangements. The first regulation addressed to investment funds was adopted in late 2007; the first data under the regulation became available last year.

97. Another major group of financial corporations, insurance corporations and pension funds (ICPFs), were not until recently included in the reference population from which the ECB could collect statistics.³⁰ In practice the ECB had obtained data on them via the NCBs on a best efforts basis. Because of the importance of these institutions, which was expected to grow as populations age, the ESCB's Statistics Committee set up a group to consider how the data might be improved and speeded up.

98. The recommendations of this group have now been, or are being, implemented. The present position is that NCBs report quarterly data on total ICPF assets and liabilities and, if available, broken down into the two sub-sectors insurance corporations and pension funds. The data should be at market value (except for deposits and loans which are at nominal value) and on a non-consolidated basis. In addition to the quarterly stocks (quarterly transactions are not yet available), NCBs report annually available data or best estimates on the split of household life insurance technical provisions and pension entitlements (in

³⁰ This is in Article 2 of Council Regulation (EC) No 2533/98, which is the Community legislation setting the framework for the ECB's statistical activities. The regulation was recently amended (by No 951/2009) to include ICPF in the ECB's reference reporting population. The amending regulation also explicitly recognises the ECB's right to collect statistics for the financial stability function.

defined contribution, defined benefit or hybrid schemes). There are still areas for improvement, namely concerning transactions data, the longer-term maturity breakdowns (in particular for debt securities held) and the geographical and sector breakdowns of non-residents (in particular for debt securities held, unlisted shares and other equity, and life insurance entitlements).

99. Again, the initiative coincided with heightened interest in their activities following the financial crisis. As in other contexts discussed above, the ECB data are provided essentially for statistical purposes, in this case principally to improve the data on ICPFs in the institutional sector accounts, and are not on the consolidated basis with information about risk exposures etc. used by supervisors; for this purpose the ESRB will also rely on data provided by the European Supervisory Authority responsible for ICPFs. Nevertheless, the improvements are timely, and others are likely to follow, notably a split of the sector to show insurance corporations and pension funds separately.

5. Data on interest rates, yields and spreads

100. In addition to interest rates paid and charged by MFIs, data on interest rates for various financial instruments are needed to monitor how ECB interest rates and changes in them influence the economy. ECB interest rates or interest rates set by the ECB's Governing Council (the rates charged or paid by the Eurosystem in market operations) comprise the rates paid by the Eurosystem on the overnight deposit facility available to counterparties and the rates charged by the Eurosystem on its main refinancing operations and on its marginal lending facility.

101. Other interest rates include a wide range of money market rates and yields on marketable securities. Money markets in the euro area are highly integrated, with largely standard financial instruments. The ECB collects rate information very frequently, mostly from wire services. Data on rates and yields on longer-term marketable securities are also readily available from market sources. In addition, the ECB publishes statistics for EU Member States on interest rates for long-term government bonds denominated in national currencies following an agreed framework, including the monitoring of the liquidity of the selected bonds. Where no harmonised long-term government bond yields are available, proxies derived from private sector bond yields or interest rate indicators are presented. The harmonised statistics are used for convergence assessment purposes, as stated in Article 121 of the Treaty establishing the European Community (the Treaty).

102. Three innovations in financial statistics need also be mentioned since 2006: The Short-Term European Paper (STEP) initiative promoted by the Financial Markets Association and the European Banking Federation aims to foster the integration of European markets for short-term paper through the convergence of market standards and practices. The ECB began in September 2006 to publish monthly statistics on outstanding issues of short-term paper complying with the STEP standards, and in April 2007 daily data on yields, with breakdowns by initial maturity (up to a year) and sector of issuer. These daily data have contributed to the rapid growth of the STEP market, and the related paper has become eligible for use as collateral in the Eurosystem's monetary policy operations. Since November 2009, the ECB publishes daily statistics on aggregated amounts outstanding and new issues broken down by sector, maturity, rating and currency on a weekly basis. The second innovation, in July 2007, is the publication of daily euro area yield curves, plotting current par yields, spot interest rates and forward interest rates against remaining time to maturity (from three months to 30 years) for comparable euro area central government securities denominated in euro. One set of curves relates to securities of all euro area central governments; the other set comprises only those of governments with the lowest credit risk (AAA rating). The statistics on yield curves are daily updated on the ECB's website. The third development is a much improved database to store financial

market information and enable it to be better used for monetary policy and financial stability analysis. A sizeable subset of this information is shared with a large number of EU central banks. Finally, considerable efforts have been invested in providing value added information to price and yield information, either by filtering methods to quality check a core set of financial prices or by deriving valued added statistics as for example the derivation of robust probability density functions based on options on the 3-month Euribor futures.

Annex

The financial crisis and government finance statistics

1. An important function of the EU's Committee on Monetary, Financial and Balance of Payments Committee (CMFB) almost since it was established in 1991 has been to advise on the statistical treatment of various operations affecting, or potentially affecting, government deficit and debt. This is an important matter in the EU because of the role of deficit and debt ratios (the 3 per cent and 60 per cent) in the convergence criteria for adoption of the euro and the Stability and Growth Pact thereafter. The measures taken by many governments to prop up financial institutions, guarantee deposits, and otherwise support the financial system give rise to recording questions. The position, as set out in an article ECB's July 2009 Monthly Bulletin (*The impact of government support to the banking sector on euro area public finances*) may be summarised as follows:

1. Government guarantees represent contingent liabilities and are recorded off-balance sheet in the ESA 95 framework, unless they are called or are very likely to be called. A call on a guarantee will usually result in a deficit increasing government capital transfer being recorded.

2. Recapitalisations through purchases of new equity at market prices are recorded as "financial transactions" without an (immediate) impact on the government budget balance. If the purchase price indisputably exceeds the market price, a capital transfer for the difference is recorded, thereby negatively affecting the government budget balance. The purchase of unquoted shares in banks (for instance, preferred shares) is recorded as a financial transaction as long as the transaction is expected to yield a sufficient rate of return under EU state aid rules.

3. Loans are recorded as financial transactions as long as the financial institution has a contractual obligation to pay interest and to repay the loan. If there is documented evidence that the loans are very unlikely to be repaid (in full or in part), a government capital transfer is recorded.

4. Asset purchases involve the acquisition of impaired assets or loans, the market value of which is difficult to determine. Governments may decide to create a defeasance structure in charge of purchasing the impaired assets or loans. If the government has paid more than the market price for the assets, a capital transfer is to be recorded for the difference, at the time of purchase. If no market or auction price can be established, the book value of the assets (based on suitable business accounting principles) close to the time of transaction or an independent valuation (founded on a market-based technique) may be considered an adequate approximation of the market value. If the government sells the asset in the year following the transaction, and if the market can be considered to be operating under similar conditions to those prevailing at the time of the original purchase, a capital transfer may be imputed if the selling price is lower than the original purchase price of the asset.

5. Exchanges (swaps) of assets of equal value and standard securities lending arrangements without cash collateral are, in principle, off-balance sheet operations affecting neither government deficit nor debt.

6. If the government agrees to cancel the debt of a financial institution to which it has made a loan or if the government assumes the debt of a financial institution, a deficit-increasing capital transfer is recorded.

7. The fees, dividends or interest payments the government receives from the banks as a result of its interventions are recorded as revenues and improve the government balance.

In some cases, governments have created new units to support the financial sector. It is important to determine the appropriate sector classification of these new units. If a new unit is classified within the government sector, its debt will add to government debt. When establishing the sector classification of a newly created entity, the first step is to assess whether it should be seen as a separate institutional unit. This requires that the unit has autonomy of decision in respect of its principal function according to the criteria set out in the ESA 95. These criteria are, however, subject to interpretation and the CMFB has not expressed a preference for any specific interpretation. On the other hand, the CMFB has issued an opinion that a new financial body which is deemed to be a separate institutional unit and whose equity stakes are mainly owned by non-government units should nonetheless be classified within general government if the government predetermines its activities and assumes all or most of the risks associated with the body's activity (e.g. by granting a guarantee for all or most of the entity's financing) or if the unit mainly provides non-market goods or services for the benefit of the whole community. Publicly owned corporations do not belong to the government sector in the ESA 95. However, if an existing public corporation undertakes a rescue operation, this operation may still be recorded in the government accounts. This is the case if the operation is considered to be carried out "on behalf of government". The CMFB considers that such rearrangement of the recorded transactions can only be applied under the conditions evidence (such as a written instruction) that the government required the public corporation to carry out the rescue operations. Central bank liquidity operations to preserve financial stability are deemed to fall within the traditional remit of central banks and should, therefore, not affect the government accounts'.
