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DEBT: CONCEPTS, MEASUREMENT AND PRESENTATION

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DEBT: CONCEPTS, MEASUREMENT AND PRESENTATION

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Purpose of paper

1. The purpose of this paper is to clarify concepts of debt based on the 2008 SNA (UN et al 2008) and related standards; clarify methods of measurement of debt with regard to valuation and accounting rules; and examine ways of presentation of debt statistics. Some conclusions and recommendations are reached. In doing so, six areas of are examined: the definition of debt; the financial instrument dimension of debt; the institutional dimension of debt; valuation of debt; accounting for debt; and the presentation of analytical measures of debt.
2. The context is to inform the debate about debt and in particular public sector debt. This is against a background of quite significant differences between the various statistical standards and reporting regimes.

What is debt?

3. The IMF staff discussion note on debt (IMF 2012) suggests debt can be thought of as a subset of liabilities in terms of a balance sheet. Liabilities are obligations that provide economic benefits to the units holding the corresponding financial claims. The criterion to define a liability as debt is that future payments of interest and/or principal are due by the debtor to the creditor.
4. This definition examines the balance sheet to positively identify debt components, and says nothing about the classification of the remaining liabilities. Some of the contracts that created liabilities may not be specific about whether the future payments are principal or interest. An alternative approach is to avoid the specifics of contracts along the *lines debt liabilities are those liabilities payable by the debtor to the creditor within the life of the debtor entity*. The non-debt (under this definition) liabilities can be described as equity. Although not stated as succinctly as this, this second definition is consistent with the 2008 SNA that describes equity as *those financial instruments that entitle the holder to a claim on the residual of the corporation on liquidation* (noting that the 2008 SNA has a specific definition of a corporation that includes certain types of unincorporated entities). This implies that all liabilities that rank before equity on liquidation are payable and therefore debt.
5. It should be noted that both definitions agree that a liability involves a payable between two different parties, the debtor and the creditor. For the remainder of this paper, such liabilities will be referred to as *financial instruments*, recognising that the contracts are simultaneously a liability of the debtor and an asset of the holder. Therefore the concept of debt requires an examination of the characteristics and the classification of financial instruments in statistical standards.

6. It should be noted that the 2008 SNA has a definition of debt that contains a certain degree of ambiguity... all liabilities that require payment or payments of interest or principal by the debtor to the creditor at a date or dates in the future. Consequently, all debt instruments are liabilities, but some liabilities such as shares, equity and financial derivatives are not debt. However, due to specific legal, institutional or practical arrangements some other definitions of debt may also exist. It is therefore useful in all cases to clearly identify the definition of debt according to the instruments included. (Paragraph 22.104, System of National Accounts, 2008)

The instrument dimension of debt

7. The 2008 SNA and related standards use a common definition and classification of financial instruments. Detailed definitions are provided in the 2008 SNA, BPM6, the draft revised IMF GFSM and the MFSM. How these definitions and classification has been applied in Australia is given in the ABS Australian System of National Accounts Concepts Sources and Methods (ABS 2013). For the purposes of this paper the following high level listing of the classification should be sufficient.

Classification of financial instruments, 2008 SNA and related standards

- F1. Monetary gold and Special Drawing Rights (SDRs)
- F2. Currency and deposits
- F3. Debt securities
- F4. Loans
- F5. Equity and investment fund shares
- F6. Insurance, pension and standardised guarantee schemes
- F7. Financial derivatives and employee stock options
- F8. Other accounts receivable / payable (includes non-contingent “provisions”)

8. Note that monetary gold is a contract restricted to central banks and for which asset positions exist without a counterpart liability. SDRs are contracts between the IMF and national governments. Also note that under the SNA classification some items classifiable as “provisions” under commercial accounting standards, such as accrued employee leave, are classified as accounts payable / receivable, and provisions without a debtor/creditor dimension such as depreciation are not recognised as an asset/liability.

9. Using the implicit 2008 SNA definition of debt from the preceding section, *debt instruments are those that are not equity*, all financial instruments not classifiable to category F5 Equity and investment funds shares or the Monetary gold part of category F1 would be classifiable as debt.

10. Using the IMF Staff Paper definition of debt some ambiguity arises for some types of contract through applying the properties of future payments of principal and/or interest. For example some contracts are designed to provide returns to holders in the form of capital gains not interest (derivatives), or pay no interest in return for provision of implicit services (current accounts at banks). Worldwide there is a certain amount of discomfort at recognising technical reserves of unfunded pension plans as debt. Some argue that accounts payable have neither “principal” nor “interest” obligations but arise as a timing difference between delivery of goods and services versus payment. A narrowly applied regime for the IMF Staff Paper might result in a grouping of financial instruments more properly defined as *borrowings* rather than *debt*.

11. To address these ambiguities, and the way in which reporting regimes differentially address them, the IMF Staff paper suggests a range of instrument coverages expanding from narrow to broad groupings of financial instruments, illustrated by the following list that references the 2008 SNA

classification. The expansion could be seen as moving from instruments that are unequivocally borrowings to liabilities arising from activities not related to borrowing.

IMF Staff Paper Suggested Instrument Groupings

- D1: debt securities (cat. F3) + loans (cat. F4)
- D2: D1 + SDRs (cat. F1) + currency and deposits (cat. F2)
- D3: D2 + accounts payable (includes some “provisions”) (cat. F8)
- D4: D3 + insurance, pension and standard guarantees liabilities (cat. F6)

12. Note the IMF grouping excludes derivatives (cat. F7) without much explanation (other than reference to current reporting practices). To be consistent with the SNA definition of debt, an additional grouping may be warranted: D5: D4 + derivatives (cat. F7).

The current Australian System of National Accounts (ASNA) instrument coverage of public sector debt and its alignment with the IMF Staff Paper is provided in the following table.

SNA debt instrument coverage and IMF Public Staff Paper Codes

| SNA code | Financial stocks and flows | IMF Staff Paper Debt Code |
|------------|---|---------------------------|
| F1 | Monetary gold and SDRs | |
| <i>F11</i> | <i>Monetary gold</i> | n/a |
| <i>F12</i> | <i>SDRs</i> | D2 |
| F2 | Currency and deposits | D2 |
| F3 | Debt securities | D1 |
| F4 | Loans | D1 |
| F5 | Equity and investment fund shares | n/a |
| F6 | Insurance, pension and standardised guarantee schemes | D4 |
| F7 | Financial derivatives and employee stock options | Not included |
| F8 | Other accounts receivable / payable | D3 |

The institutional dimension of debt

13. The metrics of debt and their analytical usefulness are sensitive to the accounting units adopted for their aggregation and presentation. The 2008 SNA adopts the *institutional unit* as the accounting unit for transactions and positions in financial instruments, and payment and receipts of income / expenditure. For most practical purposes, the institutional unit is a legal entity. Institutional units are allocated to one national economy (some multinational corporations may require splitting into parents and foreign branches), on the basis of their *residency*. Note resident institutional units may be foreign owned. Resident institutional units are allocated to domestic institutional sectors based on the predominance of their activities and ownership.

14. There are a number of levels of aggregation possible for presenting debt statistics based on the grouping into sectors of institutional units, but some opportunities for ambiguity arise. For example if *National debt* is defined as the amount owed by resident debtors to foreign creditors, the national debt will have *public sector* and *private sector* components, where public and private properties are determined by reference to the control of the debtor institutional units. However, the component of national debt owed by public sector institutional units cannot be characterised as total public sector debt, because public sector

institutional units will owe debt to the domestic private sector. The same logic applies to the private sector. Total public plus private sector debt will be greater than national debt. The same phenomenon occurs as more detail is introduced into the analysis, for example central government and state sectors.

15. The 2008 SNA addresses the question by defining standard groupings of institutional sectors and subsectors. The definitions are provided in detail in the 2008 SNA and the Australian implementation of it described in the ASNA Concepts, Sources and Methods. The sectoring is summarised in the following list, noting that the Rest of World is technically not a sector of the Australian Economy, but it is statistically convenient to treat it as if it were, and the data recorded in Australian accounts are only that part of the rest of world with transactions and positions with Australian residents.

16. It should also be noted that some of the classification points are not existent (social security funds) or not material for Australia and data are not compiled. Equally, some data important to Australia, such as local government, is compiled although not represented in the classification. The classification of the financial corporations sector in the formal classification is by function (depository corporations, insurance corporations, etc.) and the public/private control sub sectoring is not part of the formal classification. However, international agencies and domestic users require reporting of a public/private control split. This is resolved by showing public/private control as an “of which” at the sector level.

2008 SNA Institutional Sectors and Subsectors (modified to show public / private distinction)

1. Non-Financial Corporations
 - 1.1 Private Non-Financial Corporations
 - 1.2 Public Non-Financial Corporations
 - 1.2.1 Central Government Non-Financial Corporations
 - 1.2.2 State and Local Government Non-Financial Corporations
2. Financial Corporations (detailed sub sectoring not shown, public / private splits are “of which” alternatives on the main categories)
 - 2.1 Private Financial Corporations
 - 2.2 Public Financial Corporations
 - 2.2.1 Central Government Financial Corporations
 - 2.2.2 State and Local Government Financial Corporations
3. General Government
 - 3.1 Central Government
 - 3.2 State and Local Government
 - 3.3 Social Security Funds
4. Non Profit Institutions Serving Households
5. Households
6. (Rest of World)

17. The IMF Staff Paper addressed the opportunities for sectoral ambiguity about analytical aggregates of debt through proposing a range of institutional sector groupings starting from narrow and broadening successively. The groupings are shown in the following list:

IMF Staff paper suggested grouping of institutions

- GL1: budgetary central government (not applicable in Australia)
- GL2: GL1 + extra-budgetary central government + social security funds
(= total central government, SNA 3.1)
- GL3: GL2 + state and local governments (SNA 3.1 + 3.2)
- GL4: GL3 + public sector nonfinancial corporations (SNA 3.0 + 1.2)
- GL5: GL4 + public sector financial corporations
(= total public sector = SNA 3.0 + 1.2 + 2.2)

Note + indicates consolidation, not summation, discussed later.

18. It should be noted that there has been debate about the analytical usefulness of inclusion of public financial corporations in measures of public sector debt. Most Financial Corporations are intermediaries in the sense that they incur liabilities in order to acquire financial assets, for example banks accept deposits in order to make loans. Is it analytically useful to include deposits of state-owned banks in measures of public sector debt?

19. These groupings are consistent with the 2008 SNA apart from the budgetary / non-budgetary distinction that is not recognised in SNA, and is not relevant for Australia. Social security funds do not exist in Australia. In Australia, data availability restricts national accounts presentation to the GL2, GL3 and GL4 groupings.

Valuation of debt

20. A core principle of the 2008 SNA is market valuation of stocks and flows. This is consistent with the commercial accounting principle of fair valuation. Unfortunately, the 2008 SNA and related standards deviate from this core principle for certain circumstances such as valuation of loans, because market values are not available by definition and for debt securities where although market values are available, the recommendation is for “debtor” interpretation of market values as opposed to “creditor” interpretation of market values. In both cases the recommended valuation regime is for “nominal” valuation. It should be noted that nominal values are not necessarily the same as face values. The three valuation principles are defined:

Market value is conceptually equal to the required future payments of principal and contractual interest discounted at the existing market yield interest rate.

Nominal value is conceptually equal to the required future payments of principal and interest discounted at the contractual interest rate.

Face value is historic cost.

21. For reference, the definition of **fair value** from AASB 13 is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at measurement date. The ABS considers this to be consistent with market value as defined above.

22. The essential difference between nominal and market valuation is the use of current yield instead of contractual rate(s) as the discount rate(s) applicable. The relevance of historical (contractual) interest rates to current valuation is questioned by the ABS, and therefore the ABS has decided to apply the market valuation principle in all circumstances in ABS economic statistics, in a departure from the standards.

23. It should be noted that for consistency, valuation of debt at current market values requires measurement of interest payments and receipts at market yield, not contractual rates. This is another element of the “debtor/creditor” debate.

24. An example of how the valuation principle can make a difference is provided in the IMF Staff Paper concerning Greek debt.

Greece: Valuation of Gross Debt of General Government (GL3/D2) billions of Euros

| | 2008 | 2009 | 2010 |
|-----------------------|------|------|------|
| Debt at market value | 273 | 309 | 280 |
| Debt at face value | 276 | 314 | 344 |
| Debt at nominal value | 263 | 299 | 329 |

At the end of 2010 the Greek government could buy back all debt for 280 billion euros, rather than pay out the debt discounted at contractual rates for 329 billion euros (that is if they had the resources).

Accounting for debt

25. In addition to the instrument, institutional and valuation aspects of debt measurement, debt metrics are influenced by other accounting rules applicable. There are the related questions of net or gross measures, and aggregation by simple summation or consolidation.

26. Commercial accounting addresses the question of netting liability observations against asset observations across a reporting entity’s balance sheet by permitting it when there is a legal right to do so. The 2008 SNA applies the same principles. However, arguments have been advanced that for analytical purposes some net measure might be useful. The intuitive proposal is to derive net debt as gross debt liabilities less gross debt assets. Despite the intuitive appeal, there are probable quality and timing mismatches between assets and liabilities across balance sheets that may distort the analytical usefulness.

27. Another objection is that government debt, in particular, is aimed at acquiring non-financial and equity assets, not debt assets, and that liquid assets of all sorts are available in a crisis to pay off debt, and should therefore be netted off gross debt for analytical purposes. An objection to this proposal is that assessment of liquidity is difficult.

28. Given the lack of consensus about netting, the IMF and ABS favour gross measures of debt, while noting that current practices by Australian Treasuries under the Uniform Presentation Framework is for net debt at the IMF D2 coverage.

29. A related question to netting is aggregation techniques. Commercial accounting applies consolidation between related entities to form aggregated reports that exclude double counting by eliminating transactions and positions between the related companies. For example aggregation to group summaries are derived by consolidation. The 2008 SNA is somewhat imprecise about aggregation methods with recommendations differing between measurement of output (simple summation) and financial positions and flows (may be useful for some purposes). The ABS for many years has employed simple summation for measuring output and other market aggregates in supply/use, input/output and financial instrument market tables.

30. However, for sectoral presentations of income and expenditure and financial transactions and flows, consolidation techniques have been employed. It should be noted that the consolidation “domains” employed are the institutional sectors discussed above, not domains formed with reference to corporate

relationships employed in commercial accounting. Income/expenditure or financial position relationships between institutional units in the same sector (or subsector) are eliminated. The first reason is that simple summation results are difficult to interpret. A bank making a deposit with another bank does not add to the resources of the banking sector, but grosses up the assets and liabilities of the sector. A second reason is that netting assets and liabilities across classes produces the correct balancing item for the sector, but reduces the detail available to explain how the balancing item was arrived at.

31. There is a cost for producing consolidated sectoral data. Detail about counterparties to transactions and positions is needed, adding to reporting burden.

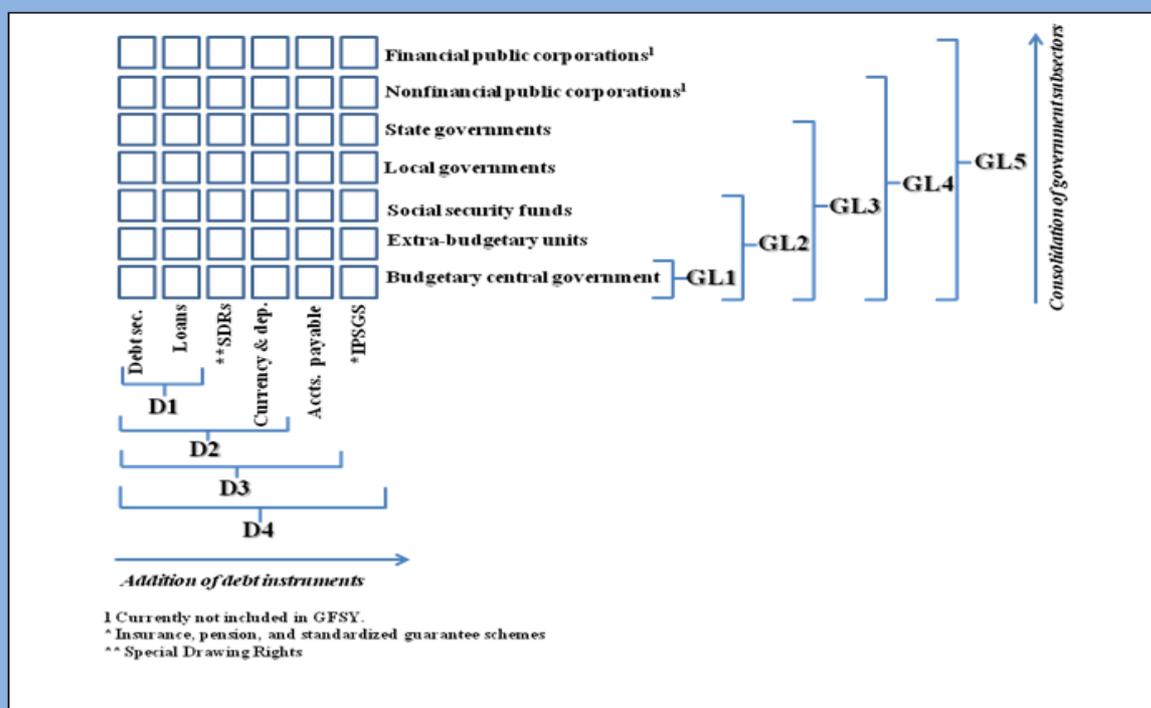
32. In the context of debt measurement both the IMF staff paper and the ABS conclude that consolidation is the preferred method of aggregation, for example in moving from GL1 to GL4 institutional coverage described above. This will eliminate double counting of, for example, Commonwealth / State transactions and positions.

Presenting debt data

33. Thus far it can be seen that the ABS and the IMF Staff Paper are in agreement on concepts and the general principles of instrument and institutional coverage, and with accounting rules. There is some disagreement about valuation, but this is not an obstacle to using the IMF framework to analyse presentation options. The IMF Staff paper proposes presenting debt data in a specified grid with widening instrument coverage on one axis (D1-D4) and widening institutional coverage on the other (GL1-GL5).

34. The paper proposes firstly that any presentation of debt data specify the concept being measured as part of that presentation and thus reduce opportunities for ambiguity. Secondly, the paper proposes an internationally comparable public sector debt “headline” measure, being GL3/D4 in terms of the grid shown in the following graphic. The IMF Staff Paper notes that data at this instrument and institutional coverage, which is equivalent to the 2008 SNA General Government, needs to be compiled for national accounts purposes.

Figure 2. Codifying Debt Based on Level of Government and Debt Instruments



Source: IMF Staff Paper

35. The IMF Staff paper further proposes that the headline debt data to this coverage be compiled on a gross basis, and consolidated within the institutional coverage.

36. The ABS national accounts have components for GL4/D5, gross and consolidated. This expands the instrument coverage to include derivatives, and therefore the concept of debt is that of non-equity liabilities. With some additional work the GL5/D5 coverage could be compiled, but the question of the analytical usefulness of including public financial corporations in public sector debt measures would need to be addressed.

Recommendations for discussion

1. The Concept of Debt

The ABS prefers a definition along the lines of *liabilities payable to creditors within the life of the accounting entity*.

2. The instrument dimension of debt

Consistent with recommendation 1, the ABS prefers a definition along the lines of *non-equity liabilities of the accounting entity*. This would include all liabilities at the IMF D4 classification plus derivatives.

3. The institutional dimension of debt

The ABS will have to compile debt data consistent with the 2008 SNA sectoring of institutions (general government total, central general government, state / territory and local general government, public non-financial corporations total, State / territory and local public non-financial corporations, public financial corporations total, State/territory and local public financial corporations. Analytical

aggregates may be constructed from these, such as total non-financial public sector and whole of government.

4. **Debt Valuation.**

The ABS debt valuation preference is for market values, and sees no reason to compile debt statistics on both market and nominal valuation, and further suggests that nominal values will be misleading.

5. **Accounting**

The ABS prefers gross, not net, measurement of debt.

6. **Presentation**

Noting from 3 (above) that data will have to be compiled for component aggregates for a number of purposes, the ABS broadly agrees with the IMF headline proposal of gross debt of the consolidated total general government (GL3/D4 coverage) but disagrees that derivatives should be omitted from the instrument coverage, and disagrees with nominal valuation instead of market valuation. The ABS thinks that the secondary proposal to clearly state coverage, valuation and accounting bases for any published debt data has merit.

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2008 SNA: System of National Accounts 2008, UN, Eurostat, IMF, OECD, World Bank

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