

# **Measuring Governments' Net Worth**

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**I**ncreasingly, governments are making legislative commitments to be fiscally responsible and, as part of those commitments, are undertaking to maintain their net worth and report against that undertaking. The principles commonly cited in support of these commitments are transparency and inter-generational equity. Until recently most governments used cash accounting for their budgeting and financial reporting systems. Debt and of changes in debt were the main indicators of governments' fiscal responsibility — that is, cash surpluses or deficits. However, cash accounting ignores such significant costs as asset depreciation and accruing employee entitlements (superannuation and long service leave) unless an equivalent amount of moneys is set aside in a separate fund. Cash accounting can also give a distorted view of whether a government is acting in a fiscally responsible manner because asset sale proceeds have been classified as either revenue or as reductions in expenditure. Such shortcomings in the quality of financial information provided to governments can lead to poor decisions being made in relation to an investment or disinvestment in public sector assets and in relation to the cost-effectiveness of alternative providers of public services. Further, the use of cash accounting as the basis of government financial reporting has been a significant impediment to holding governments accountable, on a year-to-year basis, for the quality of their fiscal management.

The above deficiencies of cash accounting have resulted in an increasing number of governments adopting an accrual-based accounting system for both budgeting and reporting purposes. Accrual accounting provides a transparent and more valid measure of the annual cost of government operations and of annual changes in the value of a government's net worth (the difference between the values of its assets and liabilities). Bradbury et al (1999) called this 'reported net worth', while Albon (1994) termed it 'net economic position'. At the same time, accrual financial reports will not highlight the future fiscal impact of changes in the composition of a government's net worth. For example, while they will show the negative impact of asset sales proceeds being used to fund a government's operating costs, they will not by themselves show the negative fiscal impact of the proceeds of an income producing asset being reinvested in a depreciating asset. Further, putting aside the issue of the composition of government net worth and its effect on the sustainability of fiscal policy settings, there will be circumstances where an increase in a government's net worth may

be associated with a decline in social welfare and *vice versa*. An example of the former is the sale of a government business being a price that exceeds the value of its net assets, but which is significantly less than its value as a business.

International experience in the adoption of accrual accounting by governments varies. A 1995 study conducted by the Organisation for Economic Cooperation and Development (quoted in National Commission of Audit, 1996:227) indicated that most member countries were examining the merits of adopting accrual accounting within their governments. At that time, only two jurisdictions (New Zealand and Iceland) had fully implemented accrual accounting, but a number of governments, including that of the United Kingdom, have since taken steps to do so. In Australia, following the development of Australia Accounting Standard *AAS 31 Financial Reporting by Governments* (AARF, 1996), the Commonwealth and all State governments have agreed to produce accrual-based whole-of-government financial statements.

This recent development in public sector accounting has provided the basis for the reporting of net worth that is often linked with government commitments to fiscal responsibility policies. In Queensland, for example, the current government has undertaken to implement a Charter of Social and Fiscal Responsibility. One of its fiscal responsibility principles is a commitment to at least maintain or to seek to increase public sector net worth (Queensland Government, 1998a). A similar principle was included in New Zealand's *Fiscal Responsibility Act 1994*. By comparison, the New South Wales Government is committed to maintaining the net worth of the general government sector (Fiscal Principle No. 2 of the *General Government Debt Elimination Act 1995*). Irrespective of the difference in the scope of the commitment, modern approaches to fiscal responsibility provide for reporting of audited information on net worth, and of changes in net worth, to provide a more transparent view of a government's fiscal management.

Some (Buiter, 1985 and Bradbury et al, 1999) have argued that the usefulness of the accounting measure 'Reported Net Worth' could be improved by supplementing it with information about future cashflows under current or proposed policy settings. Reported Net Worth, adjusted for forward looking information, is referred to as 'Comprehensive Net Worth'. Comprehensive Net Worth is thus a broader measure of government solvency and intergenerational equity. While Comprehensive Net Worth may be a more valid measure in making long-term assessments of intergenerational equity, it requires the measurement of such items as the present value of future tax revenues and social security benefits. Currently at least, measuring these items involves lower levels of reliability than are accepted in audited financial statements (HM Treasury, 1998:11). Consequently, the present paper focuses on measuring net worth in accordance with generally accepted accounting principles.

In order to ensure relevant and reliable information on net worth is being reported, the following questions must be answered:

- (i) Should net worth be monitored on a per capita basis, as well as in aggregate?
- (ii) Should net worth be measured in nominal or real terms?

The purpose of this paper is to examine some key issues relating to the measurement of public sector net worth in the context of fiscal responsibility principles. First, the measurement of net worth is examined. This is followed by an attempt to answer the two questions raised above. Some implications are considered before a conclusion is drawn.

### **Valuation Basis of a Government's Net Worth: An Example**

The method of measuring assets and liabilities has a pervasive impact on an entity's reported financial position. To facilitate consideration of the measurement issues relating to a government's net worth, the Queensland Government's (1998b) Consolidated Financial Statements are used as an example. The reported net worth of the Queensland Government as at 30 June 1997 was \$53.6 billion (or 62 per cent of total assets). Since net worth is a measure of the accounting value of assets less the value represented by liabilities, the valuation basis for both assets and liabilities has a significant effect on this measure. Table 1 exhibits the breakdown of various balance sheet items together with their valuation bases.

As with most Australian governments, a large proportion (67 per cent) of the Queensland Government's assets is in the form of property, plant and equipment. Financial assets (investments, receivables and cash) and self generating and regenerating assets constitute the remaining 33 per cent. Table 1 shows the different valuation approaches used for assets and liabilities. For example, current value is used for physical assets with a value in excess of agency thresholds (up to \$1m) and an estimated useful life of at least three years, while book value (modified historical cost) is used for other physical assets.

The use of different valuation bases for different types of physical assets is justified by the greater subjectivity and higher costs in maintaining current values than historical costs. Most financial assets, including investments, are more readily valued at current (market) value. By comparison, in the private sector, historical costs are much more widely used in the reporting of financial position than are current values, except in certain industries such as insurance.

Table 1 shows that, with the exception of creditors and other relatively low value liabilities (which are valued at book value), the Queensland Government's liabilities are reported on a current value basis — using either market values or present values. This is because:

- Queensland Government securities are raised solely by the Queensland Treasury Corporation which, as a financial institution, adopts market-to-

market accounting in accordance with accounting standard AAS 32 *Financial Reporting by Financial Institutions*;

- Insurance claims are accounted for on a present value basis in accordance with AAS 26 *Financial Reporting of General Insurance Activities*; and
- Employee entitlements such as long service leave are accounted for in accordance with AAS 30 *Accounting for Employee Entitlements* and so are measured at the present value of the estimated future cash outflows arising from employees' service to date.

**Table 1: Balance Sheet Valuation Bases<sup>1</sup> of Queensland Government**

Category	Size		Valuation Basis
	%	\$billion	
<b>Assets</b>			
Cash, debtors, etc. <sup>2</sup>	12	10.6	Historical cost
Investments and Plantation Forests	21	18.0	Current (market) value
Property, Plant & Equipment <sup>3</sup>	67	57.5	Current value (if assets > revaluation threshold) Modified historical cost or current value (if assets < revaluation threshold)
<b>Liability &amp; Net Worth</b>			
Creditors, etc	4	3.3	Book value
Empl. Entitlements & Insurance Claims	13	10.9	Current (present) value
Borrowings	21	18.3	Current (market) value
Net worth	62	53.6	Weighted average of current and book values, as above

Notes:

1. These do not differentiate between current and non-current items.
2. This item includes inventories and prepayments.
3. Includes infrastructure, heritage and culture assets.

Source: Queensland Government (1997)

### Should Net Worth be Maintained on a Per Capita Basis?

Due to the fact that reporting of government net worth is a recent development in public finance, existing literature has generally not considered whether the maintenance of a net worth objective should be based on a particular approach. Further, the word 'maintenance' may imply optimality of the *status quo*. However, as noted in HM Treasury (1998), there are no clear guides to determining an optimal level of public sector net worth.

Putting aside the issue of optimality, one approach is to report net worth on a per capita basis. This approach could be considered to be both equitable (in

terms of intergenerational equity) and prudent (in terms of financial management). In the case of a jurisdiction that has a growing population, a commitment to maintain net worth on a per capita basis requires a whole-of-government surplus — the larger the population increase, the greater the surplus required. Table 2 shows the net worth and net worth per capita of various governments in Australia for which data are available.

**Table 2: Whole-of-Government Net Worth as at 30 June 1997**

	NSW	VIC	QLD	WA	SA	ACT	Cwealth
Net Worth (\$m)	65,525	20,825	53,643	30,972	8,318	7,093	(74,555)
Population ('000)	6,274	4,605	3,401	1,798	1,480	310	18,311
Net Worth Per Capita (\$) (Net worth/population)	10,444	4,522	15,773	17,226	5,620	22,881	(4,072)

Source: ACT (1997), Commonwealth of Australia (1997), NSW (1997), Qld (1997), SA (1997), Vic (1997) and WA (1997).

As can be seen from Table 2, the net worth per capita of the various jurisdictions varies significantly (ranging from \$22,881 to - \$4,072). Apart from the Commonwealth Government, which reports a negative net worth, most other jurisdictions have substantial net worth. The maintenance of net worth on a per capita basis would require those jurisdictions with a growing population, such as Queensland, Western Australia, New South Wales and Victoria to at least maintain their surpluses at their annual population growth rates. According to estimates by the Australian Bureau of Statistics, the population growth rates for both Queensland and Western Australia in 1997-98 was 1.7 per cent and that for New South Wales and Victoria was estimated as one per cent.

**Table 3: Maintenance of Per Capita Net Worth for Four Jurisdictions**

	NSW	Victoria	Queensland	W Australia
Projected population Growth (1998)	1.0%	1.0%	1.7%	1.7%
Net Worth (in \$m) (1997)	65,525	20,825	53,643	30,972
Required Increase in Net Worth (in \$m) in 1998	655	208	912	526
Actual Increase in Net Worth (in \$m) in 1998	6,679	7,178	1,612	1,186

Source: NSW (1998), Qld (1998b), Vic (1998) and WA (1998).

Table 3 shows that each of these jurisdictions has been able to maintain their net worth on a per capita basis in the financial year 1997-98. Of course, the 'bottom-line' change in net worth reported for a particular year may not be representative of a sustainable fiscal trend. Although adjustments can be made to remove the impact of abnormal items, such as the significant gains that the Government of Victoria recorded from privatisations, an analysis of this issue needs to await the development of a time series of reliable data on government net worth.

It should be pointed out that the comparability of figures in Tables 2 and 3, and of the per capita figures, requires clarification. In particular, there are some differences in the way that these governments account for their assets.

**Table 4: Measurement of Non-Current Physical Assets**

Jurisdiction	Physical Assets	Infrastructure Assets	Heritage Assets	Land under Roads
NSW	w/d current cost	w/d current cost	w/d current cost <sup>a</sup>	not recognised
Victoria	w/d current cost	w/d current cost	w/d current cost	not recognised
Queensland	w/d current cost	w/d current cost	w/d current cost <sup>a</sup>	not recognised
South Australia	w/d current cost	w/d current cost	mainly w/d current cost	not recognised
Western Australia	current cost (land); acquisition costs and revaluation (other assets)	w/d cost (utilities); w/d valuation (roads network, water storage distribution); w/d cost & valuation (other assets)	No mandatory requirement	recognised
ACT	w/d current cost	w/d current cost or \$1,000 nominal value	\$1,000 nominal value for each	not recognised
Commonwealth	market value (land/buildings); w/d replacement cost (plant & equipment) w/d historical cost or valuation (other assets)	w/d replacement cost	either not recognised or revalued since reliable measurement of these assets is not available	not recognised

Note: a = collection assets not recognised

Source: ACT (1997), Commonwealth of Australia (1997), NSW (1997), Qld (1997), SA (1997), Vic (1997) and WA (1997).

The largest category of assets is of non-current physical assets. Table 4 summarises the general approach to the measurement of non-current physical assets by the Commonwealth and State governments in Australia, as well as the approach to valuing certain types of assets for which the approach to valuation can be contentious. For example, most of the net worth amounts in Table 2 do not include the value of land under roads, due to concerns about the reliability of such information. At the same time, however, the Auditor-General of New South Wales has qualified the 1996-97 financial statements of that government due to, amongst other things, the exclusion of land under roads. These assets had an estimated value of approximately \$15 billion.

On the other hand, the Government of Western Australia has included an amount of \$4 billion as the value of land under roads in its 1996-97 financial report. The Western Australian Government uses the average rateable value of surrounding land to value land under roads in the Perth metropolitan area, and the unimproved broad acre value to value land under roads outside the metropolitan area (the 1997-98 annual report used valuations provided by the WA Valuer General's Office to value land under roads). This approach raises an issue of circularity — that is, the value of land under roads depends on the value of surrounding land which, in turn, is significantly influenced by the existence of the road network. Nevertheless, accounting standard AAS 31 currently provides only a transitional arrangement for the non-recognition of land under roads until 1 July 1999.

Another area of contention (Ma and Mathews, 1993) is the valuation of some heritage and community assets. While these assets are disclosed in the balance sheets of relevant departments and governments with positive values, the heritage and community attributes often do not provide utility for those reporting entities. Bradbury et al (1999) thus proposed the removal of these assets from the reported net worth. Amongst the Commonwealth and State governments, several do not recognise heritage and community assets whose costs or other values are difficult to measure reliably. The Government of the Australian Capital Territory arbitrarily allocates a nominal value of \$1,000 per item (see Table 4). However, taking into account the size of most Australian governments' balance sheets, the valuation of these assets is largely inconsequential.

The above discussion shows that, while it is possible to measure reliably a government's net worth and to do so on a per capita basis, reasonable care is needed in relation to difficult-to-value items which may be brought onto a jurisdiction's balance sheet at a point in time (such as land under roads) and in comparing results across jurisdictions (in relation to cultural and heritage assets).

### **Should Net Worth be Measured in Nominal or Real Terms?**

The second issue associated with the reporting of net worth is whether it should be measured in nominal (actual dollar) or real (purchasing power dollar) terms. As one of the major arguments in favour of accrual accounting and hence measures of net worth is transparency of government financial performance, a failure to take inflation into account in valuing the components of net worth would have an effect on the net worth of a government. Amongst those jurisdictions in which maintaining net worth is a fiscal responsibility principle, only New South Wales has committed to maintaining net worth (albeit of the general government sector) in real terms. In view of this difference, there is a need to examine the issues relating to the measurement of net worth in real terms.

The impact of price changes on the measurement and comparison of financial reports has long been recognised (and argued about) by accountants. As early as 1922, Professor Paton wrote:

The value of the dollar — its general purchasing power — is subject to serious change over a period of year ... . Accountants ... deal with an unstable, variable unit; and comparisons of unadjusted accounting statements prepared at intervals are accordingly always more or less unsatisfactory and are often positively misleading (page 427).

In the 1970s and 1980s, when inflation again became a serious issue in most western countries, accounting theorists proposed several models to report information about changing price levels (AARF, 1998). Various accounting pronouncements were issued as a result of this development. However, many of these have either been withdrawn, rejected or largely ignored in the private sector.

Although it is well documented that reporting of information about the effects of changing prices has not been a success in the private sector, it does not follow that a similar fate would befall it in the public sector. This is because there are significant differences between the two sectors. For example, although research studies have shown that reporting of information about changing prices in the private sector is not useful to users of financial reports, the absence of an efficient capital market within the public sector and the need for a surrogate measure of market capitalisation for commercial activities has meant that this finding cannot be generalised to the public sector.

In the public sector, the debate concerning the reporting of information about changing prices is a more recent event. This is because it is only in recent years that government departments have produced balance sheets. Indeed, it was not much earlier that many government business enterprises adopted accrual accounting. From a theoretical viewpoint, there is a strong case for accounting

for changes in price levels. HM Treasury (1997:7) proposes the adoption of inflation accounting by the United Kingdom Government because, amongst other things, it would represent more accurately the costs of assets consumed.

Australian public sector financial reporting requirements in various jurisdictions currently provide for a modified historical cost accounting approach that includes reporting of current values for most non-current physical assets. Table 5 summarises the primary features of this approach, together with the one generally adopted in the private sector.

**Table 5: Key Features of the Accounting Models Adopted by the Private and Public Sectors**

Sector	Model	Basis of Asset Valuation	Adjustment for Money Unit Changes	Concept of Capital (or Net Worth)	Concept of Capital Maintenance
Private	Modified Historical Cost Accounting	Lower of historical cost and net realisable value, with ad hoc revaluations permitted	No	Money value of capital contributions, plus retained profit and revaluations	Money value of capital
Public	Modified Historical Cost Accounting	Current value (or value to the entity) for non-current physical assets	No	Value to the entity of assets <i>less</i> liabilities.	Operating capability

As Table 5 shows, public sector financial reporting has largely adopted the measurement of assets on a current value basis. However, changes in the value of the unit of measurement are not recognised separately from changes in the value of specific assets. The concept of capital maintenance under this approach relates to the entity's operating capability (the ability of an entity to carry out its activities at the scale determined by its existing resources).

The issue of whether public sector entities should adopt a physical or financial concept of capital maintenance has generated considerable debate. The view expressed by opponents to a financial concept of capital maintenance is well reflected in Brisbane City Council (1992:31) as follows:

The Council is not provided with any original amount of financial capital, which has to be maintained, and the Council's resources consist primarily of physical assets. Therefore, it is the physical operating capability of those physical assets that should be maintained or enhanced over time. In addition, there is no present or prospective

requirement for the Council to return money to the constituents or the State Government, or to pay a dividend.

On the other hand, the Byatt Report (1986) has argued that maintenance of physical operating capability is not sufficient. Paragraph 46 of the Report states that 'for assets with long lives, the effect of even modest continued rates of inflation is considerable'. The Report thus proposed the adoption of 'real (or relative) current value accounting'. Under this approach, assets and liabilities are re-measured at each reporting date at their value to the entity and changes in general purchasing power are recognised. This concept of capital maintenance is based on the current purchasing power of the entity's net worth.

The recent publication of Accounting Theory Monograph 10 (AARF, 1998) also proposes the relative current value approach on the basis that it would enhance the relevance of reported financial information in assessing an entity's financial position and operating performance. Conceptually, it is difficult to argue that this finding does not apply to the reporting of government net worth.

### **Some Implications of Measuring Net Worth in Real Terms**

There are a number of implications of measuring a government's net worth in real terms. In terms of accounting standards, there is currently a constraint on doing so. Although the Australian Accounting Standards Board and Public Sector Accounting Standards Board proposed in 1994 that a statement of accounting concepts on measurement would be issued by the end of 1997, to date only the Accounting Theory Monograph 10 (AARF, 1998) has been published. The absence of a statement of accounting concepts on measurement has led to a lack of authoritative guidance on the issue. Nevertheless, the Australian Accounting Standards AAS 29 and AAS 31 have encouraged revaluation of non-current assets at their current value.

The next implication relates to implementation issues. A commitment to maintain a government's net worth in real terms (using a relative current value accounting model) would require agencies to account for the effects of changing prices in a different way than they do currently. In particular, instead of accounting for most changes in asset values directly to the balance sheet, only changes arising from general price level movements would be accounted for that way — changes in the relative values of specific types of assets, such as land, are accounted for as revenues or expenses before they are brought to account as changes in net worth.

The use of this approach would require a substantial learning process on the part of those who prepare and use financial reports. Further, financial statements prepared on this basis might create difficulties for budgeting and parliamentary control purposes. At present, most governments in Australia have implemented, or are in the process of implementing, some form of accrual

output budgeting. The introduction of accounting procedures that account for (real) price changes for assets and liabilities as revenues and expenses would, although conceptually valid, undoubtedly create difficulties for this process.

Further, applying the relative current value accounting model may involve additional costs and, in some situations, greater subjectivity.

### Concluding Remarks

While Bradbury et al (1999) have proposed the supplementation of Reported Net Worth measures with information about the present value of future tax revenue and welfare benefits (to derive what is called 'Comprehensive Net Worth'), this paper examines the measurement of government net worth from a more conventional accounting context. Within the context of existing accounting principles and standards, it is feasible to measure reliably net worth in real terms, although care is needed in comparing figures across jurisdictions or across financial years. The lack of success of previous attempts to encourage private sector entities to report the effects of changing price levels does not mean that similar moves in the public sector will meet the same fate. Unlike in the private sector, there has been a greater degree of support for the reporting of information about the impact of changing prices from regulators of public sector financial reporting. As argued in Accounting Theory Monograph 10, measuring net worth in real terms enhances the relevance and comparability of the information reported to users.

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