

NEW ANALYTICAL MEASURES OF INCOME SAVING AND WEALTH

INTRODUCTION

This article continues the discussion featured in '*Saving, Borrowing, Investment and Wealth*', published in the 2000–01 release of *Australian System of National Accounts* (cat. no. 5204.0). The focus here is the link between the income accounts and the balance sheets with particular emphasis on the role of holding gains and losses. The article introduces new series relating to the measurement of income, saving, consumption and wealth. The new series primarily concern estimates of real holding gains and losses and the addition of these and other changes in wealth to traditional measures of income and saving. They are presented in this publication in tables 21 and 47, in such a way as to highlight the links between the traditional income flows and the change in net worth as reflected in the balance sheet. The calculation and presentation of these new measures should provide additional insights into changes in income, saving and wealth in Australia.

THE DEFINITION OF INCOME

The concept of disposable income used in the Australian System of National Accounts (ASNA) is directly linked to the measure of production. Disposable income can be generated either directly by participating in the process of production or indirectly through the redistributive process (taxation, social security benefits, income flows with the rest of the world, etc). Holding gains and losses, capital transfers and flows categorised as other changes in volume are excluded from the national accounts' income measures but they form part of the change between closing and opening net worth in the balance sheet. If these other changes in wealth were added to current estimates of income, then new analytical measures of income and saving could be derived. These would be more consistent with the concepts often described in economic theory where 'income' is defined as

'...the maximum that a household...can consume without reducing its real net worth' (SNA93, 8.51, p. 186).

The calculation of an alternative income series based primarily on adding real holding gains to the traditional national accounts income measure seems a simple step. However, there is an important debate over the validity of treating real holding gains in the same manner as gross disposable income. The impact of real holding gains on economic activity may not be equivalent to income received in cash or in kind. Arguably, if a real holding gain accrues due to an increase in the price of a particular asset, then if many agents wish to realise this gain and attempt to 'cash out' at the same time, the price may fall and the size of the realised gain may be smaller than the imputed real holding gain. In addition, the realisation of a holding gain may lead to the payment of tax, which would reduce the amount of funds available to the asset holder. Thus the new measures introduced here should not be seen as replacing or 'correcting' the traditional income and saving measures in the national accounts. Rather they are provided to give users an alternative view of the available information.

CHANGES IN NET WORTH
AND NET SAVING

Net worth for Australia (national wealth) is shown in the national balance sheet. It is the difference between the value of Australia's financial and non-financial assets and its liabilities to the rest of the world. In the national balance sheet for 2002–03, opening net worth is \$2991.6 billion and closing net worth is \$3262.0 billion. The difference between these two balances (\$270.3 billion) represents the change in net worth, the composition of which is shown below.

COMPOSITION OF THE CHANGE IN NET WORTH

	2002–03
	\$b
Closing net worth	3 262.0
less Opening net worth	2 991.6
equals Change in net worth	270.3
Net capital formation	64.7
plus Net financial transactions	–41.6
plus Other changes in volume	4.4
plus Revaluations	242.8
equals Change in net worth	270.3

Source: ASNA 2002–03 (cat. no. 5204.0)

Net capital formation is calculated as gross fixed capital formation less consumption of fixed capital plus changes in inventories. Net financial transactions is the net transactions in financial assets and liabilities. Other changes in volume is the flow associated with changes in the stock of non-financial, non-produced assets. This category consists of assets such as land, sub-soil assets, native standing timber and so on. Revaluations are the holding gains and losses resulting from price changes in assets and liabilities over the accounting period. Other changes in volume and revaluations are shown in the other changes in assets account.

The relationship between changes in net worth and net saving is presented in the table below. It can be seen that the major difference between change in net worth (wealth) and net saving in any particular accounting period is the revaluation item. The next section discusses revaluations, usually referred to as holding gains and losses, in more depth.

CHANGES IN NET WORTH
AND NET SAVING *continued*

NET SAVING AND CHANGE IN NET WORTH

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	2002-03
	\$b
Gross disposable income	731.7
less Total final consumption expenditure	586.9
less Consumption of fixed capital	121.6
equals Net saving	23.2
Closing net worth	3 262.0
less Opening net worth	2 991.6
equals Change in net worth	270.3
less Revaluations	242.8
less Net capital transfers	1.4
less Other changes in volume	4.4
less Net errors and omissions	-1.4
plus Statistical discrepancy	-0.2
less Other differences (a)	-0.2
equals Net saving	23.2

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(a) Includes some minor differences in treatment of stock and flow concepts and rounding errors.

Source: ASNA 2002-03 (cat. no. 5204.0)

HOLDING GAINS AND
LOSSES

Nominal holding gains and losses result from changes in the value of assets and liabilities due solely to changes in their prices. They exclude the decline in value due to the use of assets in production, which is recorded in the national accounts as consumption of fixed capital. Nominal holding gains and losses can arise from all assets and liabilities whose values are not fixed in nominal terms. Gains and losses arising from price changes in land, building, inventories, equity and tradeable securities are the most significant in Australia.

The *System of National Accounts, 1993* (SNA93) defines neutral holding gains as

'...the value of the holding gain that would accrue if the price of the asset changed in the same proportion as the general price level -i.e, merely kept pace with the general rate of inflation or deflation. It is the value of the holding gain needed to preserve the real value of the asset in question intact over time.' (SNA93, 12.64, p. 273)

and real holding gains as

'...the value of the additional command over real resources accruing to the holder of the asset as a result of a change in its price relatively to the prices of goods and services in the general economy.' (SNA93, 12.64, p. 273).

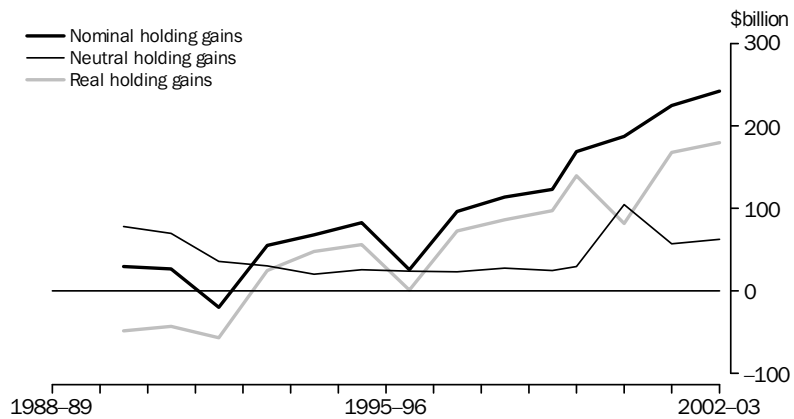
Real holding gains are derived residually by deducting neutral holding gains from nominal holding gains. It should be noted that real holding gains and losses can also apply to assets and liabilities whose values are fixed over time, such as cash, deposits and loans. Even though their nominal values do not change, their real values in terms of purchasing power do vary with the general price change in the economy.

**HOLDING GAINS AND
LOSSES** *continued*

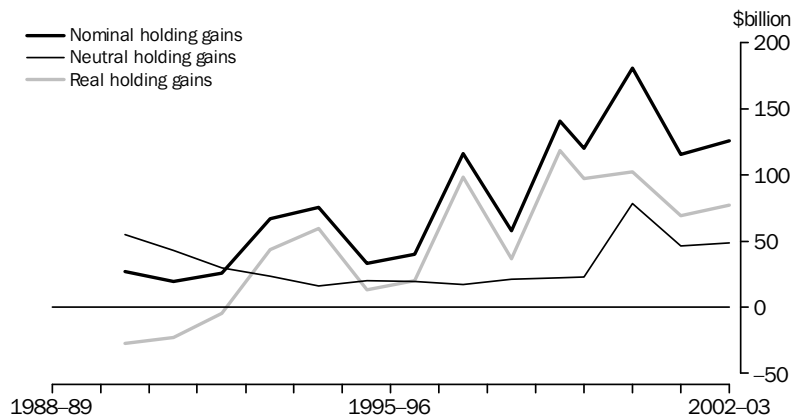
There is no unique measure of real and neutral holding gains and losses. Their magnitude depends to a large extent on the rate of inflation used. In the ASNA, the domestic final demand implicit price deflator (DFD IPD) has been used as the indicator of movement in general prices for estimates of national and household real and neutral holding gains and losses. It could be argued that the price measure should be specific to the goods and services that are purchased by the asset holder. For the household sector, this could suggest the use of the household final consumption expenditure implicit price deflator or a composite deflator including changes in land and dwelling prices. However, a sector specific price deflator was not chosen as it would imply that the real holding gain or loss on an identical asset (for example equity in a particular company) would differ depending on the sector in which it was held.

The graphs below plot the decomposition of holding gains and losses shown in the revaluation account for the total economy and for the household sector. The estimates of real holding gains have been used to derive the new analytical measures of income, saving and wealth. Also, starting from this issue of the ASNA, the revaluation account shown in table 20 has been subdivided into real and neutral holding gains. Previously, only nominal holding gains were shown.

NATIONAL REVALUATION ACCOUNT



HOUSEHOLD REVALUATION ACCOUNT



THE NEW ANALYTICAL MEASURES

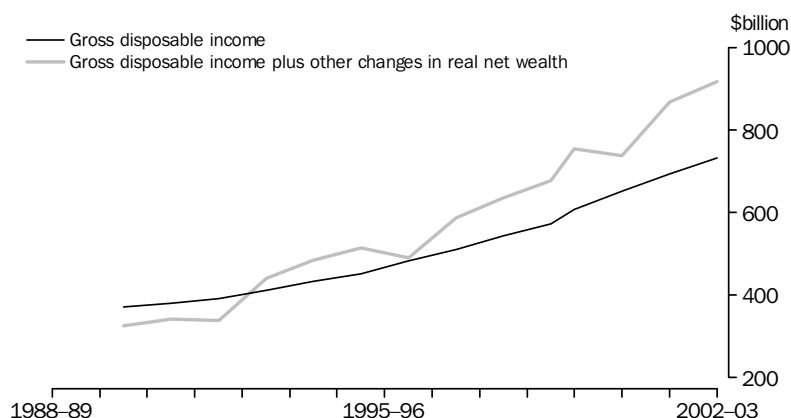
In the ASNA framework, holding gains and losses are included in the balance sheet when estimating the value of closing assets and liabilities, but they are excluded from the income accounts and therefore from estimates of income and saving. SNA93 recognises that real holding gains are an economic variable in their own right that could be taken into account alongside income for the purposes of analysing consumption or capital formation. It states that:

'...It can be argued that real holding gains ought to be assimilated with income as defined in the System to obtain a more comprehensive measure of income, but there is no consensus on this. Apart from the practical difficulty of estimating real holding gains and losses, it is likely that their impact on economic behaviour is not the same as that of income received in cash or in kind.' (SNA93, paragraph 12.81)

The new series introduced in this publication supplement the traditional estimates of gross disposable income and net saving by adding in a number of items—real holding gains and losses, net capital transfers and other changes in volume. In total, these additions are referred to as 'other changes in real net wealth' which, when added to gross disposable income and net saving, give the new analytical measures. The way in which the new series are presented in tables 21 and 47 make explicit the accounting links between the analytical measures of net saving and income and the change in net worth.

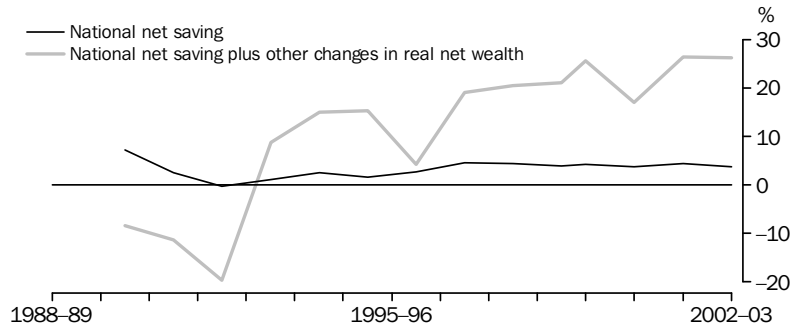
The graphs below show the effect of adding 'other changes in real net wealth' to gross disposable income and net saving for both Australia as a whole (the 'national' measures) and the household sector. The net saving ratios are equal to net saving (net saving plus other changes in real net wealth) as a percentage of net disposable income (net disposable income plus other changes in real net wealth). Net disposable income is equal to gross disposable income less consumption of fixed capital.

NATIONAL GROSS DISPOSABLE INCOME



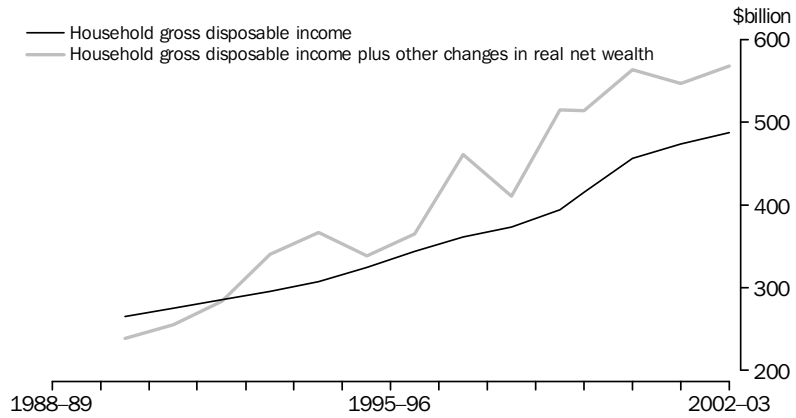
THE NEW ANALYTICAL MEASURES *continued*

NATIONAL NET SAVING RATIO

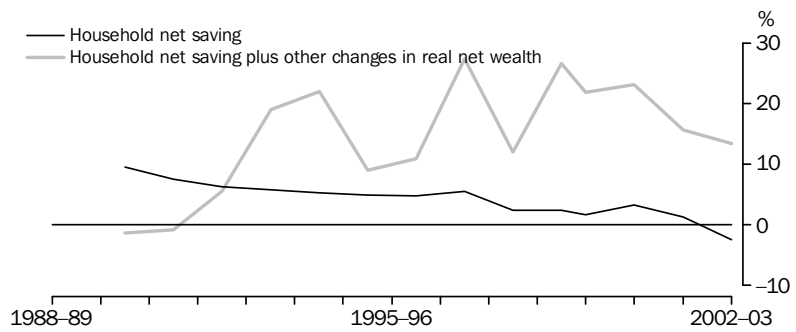


Notes: The net saving ratios are equal to net saving (net saving plus other changes in real net wealth) as a percentage of net disposable income (net disposable income plus other changes in real net wealth).

HOUSEHOLD GROSS DISPOSABLE INCOME



HOUSEHOLD NET SAVING RATIO



Notes: The net saving ratios are equal to net saving (net saving plus other changes in real net wealth) as a percentage of net disposable income (net disposable income plus other changes in real net wealth).

AN ALTERNATIVE
MEASURE OF THE
CONSUMPTION OF
CONSUMER DURABLES

Table 47: Analytical Measures of Household Income, Saving, Consumption and Wealth also contains an alternative measure of final consumption expenditure on consumer durables. Unlike other final goods and services which are used up in the same accounting period in which they are purchased, consumer durables (such as cars, refrigerators and computers) provide a flow of services to their owners over several accounting periods. For some purposes, it may be useful to consider the flow of services received during the accounting period as final consumption expenditure, rather than the purchase of the durable itself. The perpetual inventory method has been used to estimate the net stock of consumer durables found as a memorandum item to Table 16: National Balance Sheet and the services from consumer durables has been estimated using the methods for calculating consumption of fixed capital of consumer durables.

Ideally, the services flow would have been calculated in a manner analogous to the estimation of flows of capital services within the general capital stock model. This was not possible in this instance. Flows of capital services and flows of consumption of fixed capital are related but different concepts. Capital services relate to the changing efficiency of an asset whereas depreciation relates to the changing price of an asset.

A full accounting for consumer durables has not been attempted either in the new table or in this feature article and is an area for future research. A full accounting would require a satellite account presentation where the asset boundary of the national accounts is allowed to change. In this way, consumer durables could be treated as gross fixed capital formation of households, who would be in effect operating as rental businesses providing capital services to themselves. This would be analogous to the existing treatment in the national accounts of owner occupied housing. Gross operating surplus and capital services would include a rental (normal return to capital invested after operating costs) in addition to depreciation.

CONCLUSION

New tables showing analytical measures of income, saving and wealth have been included in the ASNA to aid certain analyses where it may be useful to adopt alternative combinations of data items to those used in the standard national accounts measures. In particular, items from the other changes in assets account relating to real holding gains and losses on assets and liabilities and net additions to natural resources have been added to the traditional national accounts measures of income and saving. They may aid in the analysis of consumption and saving behaviour. They are also more consistent with concepts of income and saving often described in economic theory. Nevertheless, the standard measures used in the national accounts remain relevant for most types of analyses.

A paper '*Alternative Measures of Income and Saving*', presented at the 32nd Annual Conference of Economists, contains a more detailed discussion on the theoretical concepts used to derive the estimates of real and neutral holding gains implemented in the ASNA. A copy of this paper and the savings paper published in the 2000–01 release of 5204.0 can be found on the National Accounts' theme page on the ABS website at <<http://www.abs.gov.au>>.

Comments on this article may be directed to Tanuja Doss on (02) 6252 6104, or email tanuja.doss@abs.gov.au.

REFERENCES

Commission of the European Economic Communities, International Monetary Fund, Organisation for Economic Cooperation and Development, World Bank, United Nations, (1993) *System of National Accounts 1993*, Brussels/Luxemburg, New York, Washington.